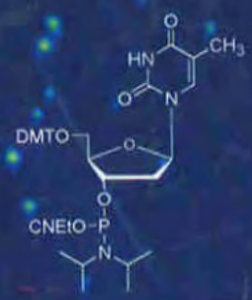
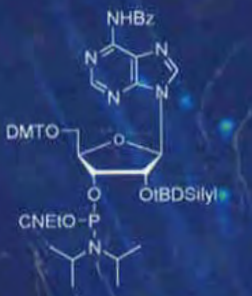
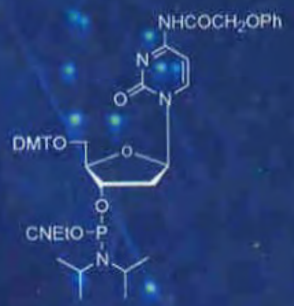
CHEM GENES

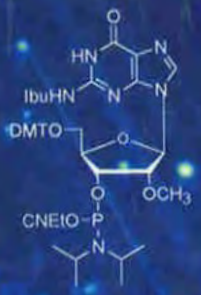
CORPORATION











ChemGenes
Corporation
33 Industrial Way
Wilmington, MA 01887

CHEMGENES EXHIBIT 2029
Shanghai Hongene v. ChemGenes
Case IPR2023-00490

Bio Technology Products & Manufacturer of DNA-RNA Intermediates

CHEM GENES

CORPORATION

032981

1x5-4m

2 days

"Bio Technology Products & Manufacturer of DNA-RNA Intermediates"

0532-0208-0

Ashland Technology Center
200 Homer Avenue, Ashland, MA 01721
508-881-5200, 800-762-9323. Fax (508) 881-3443
email : chemgenes@aol.com
info@chemgenes.com

GENERAL INFORMATION

★Large quantities of Ultra Pure Dimethoxytrityl Mononucleosides are available.★
★These products are ready for production of phosphite products ★
★or synthesis of dimer and triester blocks ★

★The products and services provided by ChemGenes Corporation will continue ★
★to accelerate the pace of DNA-RNA synthesis, research, and development ★
★in the field of genetic engineering in general.★

Special Gratitude

★★★★★ The nucleoside phosphoramidites available in this catalog are the result of the classical research contribution by Professor M.H. Caruthers and colleagues (University of Colorado, Boulder, CO) (S.L. Beaucage and M.H. Caruthers, Tet. Letters, 22,1859-1862, 1981). Other enormous contributions in this field have been made by Professor K.K. Ogilvie and colleagues (Arcadia University, Arcadia, Canada), Professor R.L. Letsinger and colleagues (Northwestern University, Evanston, IL), and Professor H. G. Khorana, Noble Laureate and colleagues (Massachusetts Institute of Technology, Cambridge, MA).★★★★★

The DNA phosphoramidite products are sold with license agreement for U.S. Patent No. 4,415,732 and corresponding patents issued in other countries and a license to manually practice the process claimed in U.S. Patent No. 4,458,066, and license agreement for U.S. Patent No. Re 34,069 and the corresponding patents issued in other countries.

"The purchaser may use these reagents with an instrument licensed under U.S. Patent No. 4,458,066 and U.S. Patent No. Re 34,069, and the corresponding patents issued in other countries."

OUR COMMITMENT TO YOU:
MOST COMPETITIVE PRICES
HIGHEST QUALITY

TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

ABOUT CHEMGENES

ChemGenes Corporation, a biotechnology company located in Waltham, Massachusetts, has been a strong partner to researchers engaged in the field of DNA/RNA synthesis for more than 17 years. By starting out as a supplier of 'Ultra Pure Products' and then also by becoming an active Contract Researcher, ChemGenes Corporation has achieved unparalleled expertise in the field of DNA/RNA synthesis. Thus, all of us at ChemGenes have the opportunity and great pleasure to serve a vast numberof scientists in the US and all over the world.

ChemGenes holds a number of patents in the field of standard, modified, as well as backbone modified DNA/RNA synthesis products. We hold patents for 2'-O-Methyl phosphoramidites (US patent #s 5,214,135 and 5,525,719), propargyl modified sugar nucleosides as well as phosphoramidites, and a number of pending patents. ChemGenes has a worldwide licensing agreement on US patents # 4,415,732 and 4,458,066, pioneering patents on the discovery of DNA and RNA phosphoramidites by Caruthers and Beaucage. We have another worldwide licensing agreement on US patent # Re 34,069, the presently popular cyanoethyl (CED) phosphoramidite version for DNA and RNA synthesis.

ChemGenes' product lines include phosphoramidites for DNA and RNA synthesis, Antisense phosphoramidites, modified bases for DNA, as well as RNA modification. In addition, we produce a variety of modified phosphoramidites for the introduction of chromophores and ligands. The availability of prepacked disposable columns of various pore sizes, loadings, low volume columns, ancillary reagents in configurations suitable for each synthesizer, and DNA purification cartridges and barrels is another way ChemGenes meets its customers' needs.

ChemGenes manufactures many natural and modified nucleoside bases, including DMT protected deoxy and ribo nucleosides, 2'-O-methyl and 2'-O-propargyl nucleosides, and silyl protected ribonucleosides.

A large variety of Reagents for the synthesis of DNA/RNA are also available. These include tetrazole, 5-thioethyltetrazole, DMT-chloride,TMT-chloride, and several types of phosphorylating reagents such as cyanoethyl chloro phosphitylating reagent, cyanoethyl tetra isopropyl phosphitylating reagent, cyanoethyl dichloro phosphitylating reagent and 5', 3'-bis silylating reagent.

As the market for oligonucleotides continues to grow, ChemGenes will stay committed to introducing novel products, while maintaining its existing product mix. We also have the capacity to custom synthesize products on request. Our highly trained technical staff is always available and happy to help you with your special needs and demands in this area. For information regarding the full range of products and their applications, please call us at 508-881-5200or toll-free - 1-800-762-9323, fax : 508-881-3443, e-mail: chemgenes@aol.com or info@chemgenes.com.

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SUMMARY OF PRODUCTS

DNA and RNA Synthesis Products
CED Phosphoramidites.
Mixed Base CED Phosphoramidites.
CED Phosphoramidites for ABI, Expedite, Pharmacia & Beckman Synthesizers.
CED Phosphoramidites of Modified Bases.
Fast Deprotecting Base Phosphoramidities

p-Methyl Phosphonate DNA Synthesis Products
p-Methyl Phosphonates of regular DNA bases for the synthesis of DNA with p-methyl phosphate.
Antisense DNA Synthesis.

RNA Synthesis Products
CED Phosphoramidites for RNA Synthesis.
Standard Nucleoside Base Protecting Phosphoramidites.
PAC Protected Nucleoside Base Phosphoramidites for Faster RNA Synthesis
and RIBOZYME Synthesis.

Unnatural RNA Synthesis Products
These Products are for Introduction of 2'-5' Linkage of RNA Molecules such as
p2'-5'-poly Adenosine.

RNA-2'-O-Methyl Synthesis Products
CED-2'-O-Methyl Phosphoramidites of RNA Monomers for the synthesis of
Defined Sequence RNA-2'-O-Methyl Oligomers,
RNA Biological Studies.and
Antisense Product development
CED-3'-O-Methyl Phosphoramidites of RNA Monomers for 2'-5" Linkage, carrying a neighboring 3'-O-Methyl for enhanced stability of oligomers.

2'-O-Propargyl RNA Synthesis
For ANTISENSE, RIBOZYMES, and BIOCHEMICAL APPLICATIONS.

3'-O-Propargyl RNA Synthesis
For the development of Novel Drugs

BIOTIN, Fluorescein, Psoralen, Carboxyl Terminal, Molecular Beacon, and Amino Link Phosphoramidites

Highly Fluorescent EthenoAdenosine Phosphoramidites

7-Deaza deoxy and riboGuanosine and 7-Deaza deoxy and riboAdenosine Phosphoramidites
Both for deoxy and ribo DNA and RNA synthesis.

Mononucleosides 1% cross-linked Polystyrene

Controlled Pore Glass Based Supports

Blocked Nucleosides

Chromophores and Ligands

Custom Synthesis and Contract Research and Development
(involving any or all of the above products)

Dimethoxytrityl chloride (DMT-Cl)-bulk quantity

1-H-Tetrazole-Bulk Quantity

5-Thioethyl Tetrazole-Bulk Quantity

Chloro Cyanoethyl Reagent- Bulk Quantity

Tetraisopropyl Cyanoethyl Reagent- Bulk Quantity

Other DNA Synthesis Reagents

DNA Purification Cartridges

96 Well Automatic DNA Purification System

DNA Drying Traps

Triphosphates of Modified deoxy and ribo nucleosides

TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

SUMMARY OF PRODUCTS (Cont.)

Prepacked Reaction Columns & Supports

- **DNA Synthesis Columns**
  500Å, 1000Å, 2000Å — These pore size columns can be loaded for four different scales of synthesis and are designed for synthesizers: Applied Biosystems Pharmacia, and PerSeptive Expedite Configurations.

- **DNA Synthesis Supports**
  500Å, 1000Å, 2000Å — These pore size CPG's are available for four different scales of synthesis.

- **RNA Synthesis Columns**
  500Å, 1000Å — These pore size columns can be loaded for three different scales of RNA synthesis.

- **RNA Synthesis Supports**
  500Å, 1000Å, 2000Å — These pore size CPG's are available for three different scales of RNA synthesis.

- **2'-O-Methyl RNA Synthesis Columns**
  500Å — These pore size column can be loaded for one scale of 2'-O-Methyl RNA synthesis.

- **2'-O-Methyl RNA Synthesis Support**
  500Å — These pore size CPG's are available for one scale of 2'-O-Methyl RNA synthesis.

- **Minor and Modified Bases CPG columns & Supports**

CED PHOSPHORAMIDITES

ChemGenes uses versatile DNA synthesis chemistry employing β-cyanoethyl phosphoramidites. These activated monomers have proven to be excellent reagents for polymer supported DNA-RNA synthesis on CPG supports, allowing routine synthesis of DNA-oligonucleotides of up to 175 residues with average cycle time of 5-7 minutes.

- **Chromophore and Ligand attached synthesis column**
  500Å, 1000Å — These pore sizes are available for medium scale and high scale DNA/RNA synthesis.

- **Chromophore and Ligand attached synthesis supports**
  500Å, 1000Å — These pore sizes are available for medium scale and high scale DNA/RNA synthesis.

- **Very High Loaded CPG**
  CPG with a loading of 90-95 µmole/gm
  CPG with a loading of 150 µmole/gm

TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

ORDERING INFORMATION

Quality:

ChemGenes Corporation products are manufactured under carefully controlled conditions and whenever applicable are continually analyzed by Ultra Violet (UV) Spectroscopy. Thin Layer Chromatography, Electrophoresis, High Performance Liquid Chromatography (HPLC), Enzymatic, and Sequential Analysis. A product analysis report is enclosed with each shipment of our products.

Conditions for Sales:

ChemGenes Corporation products are sold for laboratory and manufacturing use only. Our products are not for use in humans for drugs or clinical diagnostics. Liability for any loss or damage which may arise from the sale, storage, use, and handling of these products is solely the responsibility of the user of purchase. ChemGenes Corporation does not assume any responsibility for patent infringement which may occur with the use of these products.

Our products are of highest purity and conform to the pertinent technical data sheet enclosed with each product. However, should any of our products fail to meet the enclosed data, ChemGenes Corporation will replace the products free of charge.

Any damage, due to thawing and breakage in transit, must be reported in less than five days. Any quality related problems, which do not conform to the technical data sheet, must be reported in less than thirty days. No return authorization or credit will be allowed after thirty days. All products returned need proper authorization from us.

The information supplied in this catalog is correct to the best of our knowledge.

Errors:

ChemGenes Corporation shall not be liable for any errors of clerical nature in prices or statements contained in our catalog, product literature, labels, and product data sheet. All errors are subject to correction.

OUR COMMITMENT TO YOU:
MOST COMPETITIVE PRICES
HIGHEST QUALITY

TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

ORDERING INFORMATION (Cont.)

Please include the following information with each order:
*****Our catalog number.
*****Product name.
*****Quantity.
*****Your purchase order number.
*****Shipping and billing address.

If order is confirmation of telephone order, it must be marked "confirming."

Quotations for quantities in excess of those listed in our product catalog will be supplied on request.

Delivery:
Orders for the products listed in our catalog will be filled promptly from our stock. When complete shipments can not be made, partial shipments will be made at our discretion.

All products are shipped freight paid with ChemGenes Corporation reserving the right to choose the best possible shipping method.

Shipping dates provided by ChemGenes Corporation are given on the basis of the best available information on hand. However, ChemGenes Corporation shall not be liable for any loss, damage, expense (consequential or otherwise) incurred by the buyer if ChemGenes Corporation fails to meet specified delivery.

Title of Products & Shipment:
The title of goods and products sold hereunder shall pass to the buyer upon delivery of products to the carrier.

Terms:
..... Invoices are due net 30 days from the date of invoice in the US.
..... All prices are F.O.B. Ashland, MA 01721 approved.
..... Payments received with in 20 days of invoice date are subject to a 2% special discount.

DNA PHOSPHORAMIDITES

Quality Control Criteria of UltraPure DNA Phosphoramidites

Thin Layer Chromatography

sharp doublet in most cases, or single spot
detection limit: 0.5%
leaves no visible impurity

^{31}P NMR

single or double peak
detection limit: 0.08%

Solubility Test

200mg pure dry product in 1.0ml dry acetonitrile
(H_2O content <0.004-0.005gm/100ml)

Coupling Test

greater than 99% under conditions specified in Table 1 (Please see below).

HPLC

single or double peak
detection limit: 0.5%

UV Characterization

to characterize the purine or pyrimidine structure and substitution

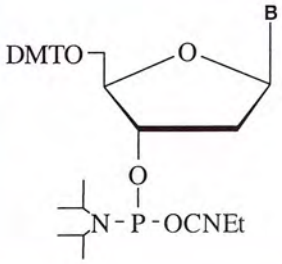
Table 1, Recommended Conditions for Using CED Phosphoramidites

(1)	CED Phosphoramidite solution (dissolved in dry anhydrous CH_3CN with H_2O contents< 0.004-0.005%) Swirl gently to make sure there are no particulate matters at any time during the synthesis process. Name of Amidite: dA dC dG T	0.1M
(2)	1-H Tetrazole (Dry, sublimed) Solution (Activator)	0.45M soln in acetonitrile
(3)	Derivatized Icaa-CPG as support	0.2 - 0.5µm/column
(4)	Final Reaction Conditions	
	(a) Molar ratio of Phosphoramidite to CPG support	30-40 fold to 1 (65µl)
	(b) Molar ratio of 1-H Tetrazole to CPG support	450-550 fold to 1 (175µl)
	(c) Total Reaction Time with support bound Nucleoside	25 seconds
(5)	Capping (a) Acetic Anhydride/2,6-Lutidine/CH_3CN (1:1:8) (b) 1-Methyl-Imidazole/THF (16%w/v)	15 seconds
(6)	Oxidation Iodine/Pyridine/THF/H_2O (2.5%w/v/8/84/8)	15 seconds
(7)	Detritylation 2.5% Dichloroacetic Acid/CH_2Cl_2	25 seconds
(8)	Cleavage from the CPG support concentrated aqueous NH_4OH	1 hour at R.T.
(9)	Bases Deprotection concentrated aqueous NH_4OH (28% ammonia)	16 hours at 37°C

Note: It is advisable to add DNA drying traps (please see page 19) to the solution of the CED phosphoramidite in dry CH_3CN). This not only prolongs the life of the amidite solution, but also helps in getting peak performance during the coupling reaction.

DNA PHOSPHORAMIDITES (Cont.)

5'-DMT-Deoxynucleoside, β-cyanoethyl N,N-Diisopropyl Phosphoramidites



B	Cat. #
bzA	ANP 5551
bzC	ANP 5552
ibuG	ANP 5553
T	ANP 5554
ibuC	ANP 5559
acC	ANP 5560

Catalog #	Product	Prices $/500mg	$/gm	$/5gm	$/10gm
ANP-5551	deoxy Adenosine (N-bz) phosphoramidite F.W.: 857.915	26.00	40.00	145.00	270.00
ANP-5552	deoxy Cytidine (N-bz) phosphoramidite F.W.: 833.886	26.00	40.00	145.00	270.00
ANP-5553	deoxy Guanosine (N-ibu) phosphoramidite F.W.: 839.901	26.00	40.00	145.00	270.00
ANP-5554	Thymidine phosphoramidite F.W.: 744.799	26.00	40.00	145.00	270.00
PRICES FOR KITS:					
ANP-5555	2gm KIT (500mg each of the above four products):			$75.00	
ANP-5556	4gm KIT (1gm each of the above four products):			$130.00	
ANP-5557	20gm KIT (5gm each of the above four products):			$530.00	
ANP-5558	40gm KIT (10gm each of the above four products):			$980.00	
ANP-5559-ibudC	deoxy Cytidine (N-ibu) phosphoramidite F.W.: 799.872	26.00	40.00	145.00	270.00
ANP-5560-acdC	deoxy Cytidine (N-acetyl) phosphoramidite F.W.: 771.820	26.00	40.00	145.00	270.00

Quality Specifications:
(1) Products purified on silica gel column to homogenity.
(2) Purity above 99% by ^{31}P NMR and TLC.
(3) Coupling efficiency above 99%.
(4) Purity above 99% by HPLC.

** Please specify whether bz-Cytidine, ibu-Cytidine, or ac-Cytidine (ANP 5552, ANP 5559, or ANP 5560) when ordering.

FOR PREPACKED COLUMNS - SEE PAGE 20 -22
FOR ANCILLARY REAGENTS - SEE PAGE 13 - 17

DNA PHOSPHORAMIDITES (Cont.)

CATALOG NUMBERS OF PHOSPHORAMIDITES FOR VARIOUS DNA/RNA SYNTHESIZERS

FOR PREPACKED DISPOSABLE COLUMNS-SEE PAGES 20-22
FOR ANCILLARY REAGENTS-SEE PAGES 13-17

Milligen Cyclone	Beckman 1000	Pharmacia	ABI	Expedite	Price
5551-CYC-25A 5552-CYC-25C 5553-CYC-25G 5554-CYC-25T 5559-CYC-25ibuC 5560-CYC-25acC	5551-BK-25A 5552-BK-25C 5553-BK-25G 5554-BK-25T 5559-BK-25ibuC 5560-BK-25acC		5551-ABI-25A 5552-ABI-25C 5553-ABI-25G 5554-ABI-25T 5559-ABI-25ibuC 5560-ABI-25acC	5551-MEX-25A 5552-MEX-25C 5553-MEX-25G 5554-MEX-25T 5559-MEX-25ibuC 5560-MEX-25acC	$12.00/ 250mg
		5551-PH-04A 5552-PH-04C 5553-PH-04G 5554-PH-04T 5559-PH-04ibuC 5560-PH-04acC			$25.00/ 400mg
5551-CYC-05A 5552-CYC-05C 5553-CYC-05G 5554-CYC-05T 5559-CYC-05ibuC 5560-CYC-05acC	5551-BK-05A 5552-BK-05C 5553-BK-05G 5554-BK-05T 5559-BK-05ibuC 5560-BK-05acC		5551-ABI-05A 5552-ABI-05C 5553-ABI-05G 5554-ABI-05T 5559-ABI-05ibuC 5560-ABI-05acC	5551-MEX-05A 5552-MEX-05C 5553-MEX-05G 5554-MEX-05T 5559-MEX-05ibuC 5560-MEX-05acC	$26.00/ 500mg
5551-CYC-75A 5552-CYC-75C 5553-CYC-75G 5554-CYC-75T 5559-CYC-75ibuC 5560-CYC-75acC					$35.00/ 750mg
	5551-BK-10A 5552-BK-10C 5553-BK-10G 5554-BK-10T 5559-BK-10ibuC 5560-BK-10acC	5551-PH-10A 5552-PH-10C 5553-PH-10G 5554-PH-10T 5559-PH-10ibuC 5560-PH-10acC	5551-ABI-10A 5552-ABI-10C 5553-ABI-10G 5554-ABI-10T 5559-ABI-10ibuC 5560-ABI-10acC	5551-MEX-10A 5552-MEX-10C 5553-MEX-10G 5554-MEX-10T 5559-MEX-10ibuC 5560-MEX-10acC	$40.00/ 1.0gm
			5551-ABI-20A 5552-ABI-20C 5553-ABI-20G 5554-ABI-20T 5559-ABI-20ibuC 5560-ABI-20acC		$65.00/ 2.0gm
			5551-ABI-50A 5552-ABI-50C 5553-ABI-50G 5554-ABI-50T 5559-ABI-50ibuC		$145.00/ 5.0gm

DNA PHOSPHORAMIDITES (Cont.)

5'-DMT-Deoxynucleoside, β-cyanoethyl N,N-Diisopropyl Phosphoramidites

LARGE QUANTITY

Catalog #	Product	Qty.	Price$
ANP-5551	deoxy Adenosine (N-bz) phosphoramidite F.W.: 857.915	100gm	2,200.00
ANP-5552	deoxy Cytidine (N-bz) phosphoramidite F.W.: 833.886	100gm	2,200.00
ANP-5553	deoxy Guanosine (N-ibu) phosphoramidite F.W.: 839.901	100gm	2,200.00
ANP-5554	Thymidine phosphoramidite F.W.: 744.799	100gm	2,200.00
ANP-5550	100gm KIT (25gm each of the above 4 products): $2,200.00		
ANP-5559-ibudC	deoxy Cytidine (N-ibu) phosphoramidite F.W.: 799.872	100gm	2,200.00
ANP-5560-acdC	deoxy Cytidine (N-acetyl) phosphoramidite F.W.: 771.820	100gm	2,200.00

Quality Specifications:
(1) Product purified on silica gel column to homogenity.
(2) Purity above 99% by ^{31}P NMR and TLC.
(3) Coupling efficiency above 99%.
(4) Purity above 99% by HPLC.

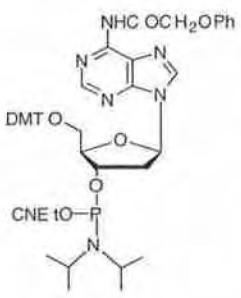
** Please specify whether bz-Cytidine, ibu-Cytidine, or ac-Cytidine (ANP 5552, ANP 5559, or ANP 5560) when ordering.

FOR PREPACKED COLUMNS - SEE PAGE 20 - 22
FOR ANCILLARY REAGENST - SEE PAGE 13 - 17

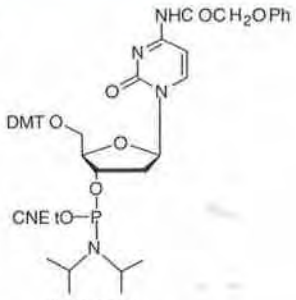
DNA PHOSPHORAMIDITES (Cont.)

N-PAC PROTECTION

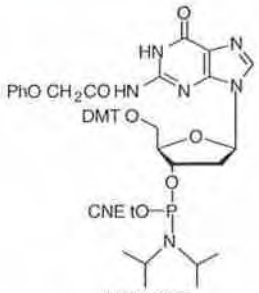
N-PAC Deoxynucleoside, β-Cyanoethyl N,N-Diisopropyl Phosphoramidite
Fast Deprotection Avoiding AMA Treatment



ANP-6661
PAC dAdenosine



ANP-6662
PAC dCytidine



ANP-6663
PAC dGuanosine

Catalog #	Product	Price$ 500mg	1gm	5gm	10gm
ANP-6661	N-PAC deoxy Adenosine phosphoramidite F.W.: 887.941	40.00	65.00	258.00	455.00
ANP-6662	N-PAC deoxy Cytidine phosphoramidite F.W.: 863.912	40.00	65.00	258.00	455.00
ANP-6663	N-PAC deoxy Guanosine* phosphoramidite F.W.: 903.941	40.00	65.00	258.00	455.00
ANP-5554	Thymidine phosphoramidite F.W.: 744.799	26.00	40.00	145.00	270.00
ANP-5560-ac-dC	deoxy Cytidine (N-Acetyl) phosphoramidite F.W.: 771.882	26.00	40.00	145.00	270.00

KITS (consists of ANP-6661, ANP-6662, ANP-6663, and ANP-5554):

ANP-6666	2gm KIT (500mg each of 6661, 6662, 6663 and 5554):	$126.00
ANP-6667	4gm KIT (1gm each of 6661, 6662, 6663 and 5554):	$215.00
ANP-6668	20gm KIT (5gm each of 6661, 6662, 6663 and 5554):	$900.00
ANP-6669	40gm KIT (10gm each of 6661, 6662, 6663 and 5554:	$1,600.00

*Dissolves in 50:50, anhydrous acetonitrile and methylene chloride).

Table 2, Recommended Conditions for Using Fast Deprotecting Phosphoramidites

Phenoxyacetyl (PAC) protection is a reasonable alternative to the standard base protecting groups.

(1) - (7)	Refer to Table 1 on page 5.	
(8)	Cleavage from the CPG support reagent with aq. ammonium hydroxide	45 minutes at R.T.**
(9)	Base Deprotection using the same reagent.	2-4 Hrs. depending on chain lenght.

**J. C. Shullhof, D. Molko, and R. Teoule, Nucleic Acids Res., 1987, 15, 397; Analects Vol. 21, Pharmacia P-L Biochemicals, Inc., (1993).

Note: Ancilliary reagents for DNA synthesis using Fast Deprotecting Phosphoramidites are available as listed on page 13-17.

DNA PHOSPHORAMIDITES (Cont.)

CATALOG NUMBERS OF PHOSPHORAMIDITES FOR VARIOUS DNA/RNA SYNTHESIZERS

N-PAC

Milligen Cyclone	Beckman 1000	Pharmacia	ABI	Expedite	Price
6661-CYC-25A 6662-CYC-25C 6663-CYC-25G	6661-BK-25A 6662-BK-25C 6663-BK-25G		6661-ABI-25A 6662-ABI-25C 6663-ABI-25G	6661-MEX-25A 6662-MEX-25C 6663-MEX-25G	$22.00/250mg
		6661-PH-04A 6662-PH-04C 6663-PH-o4G			$37.00/400mg
6661-CYC-05A 6662-CYC-05C 6663-CYC-05G	6661-BK-05A 6662-BK-05C 6663-BK-05G		6661-ABI-05A 6662-ABI-05C 6663-ABI-05G	6661-MEX-05A 6662-MEX-05C 6663-MEX-05G	$40.00/500mg
6661-CYC-75A 6662-CYC-75C 6663-CYC-75G					$56.00/750mg
	6661-BK-10A 6662-BK-10C 6663-BK-10G	6661-PH-10A 6662-PH-10C 6663-PH-10G	6661-ABI-10A 6662-ABI-10C 6663-ABI-10G	6661-MEX-10A 6662-MEX-10C 6663-MEX-10G	$65.00/1.0gm
			6661-ABI-20A 6662-ABI-20C 6663-ABI-20G		$110.00/2.0gm
			6661-ABI-50A 6662-ABI-50C 6663-ABI-50G		$258.00/5.0gm

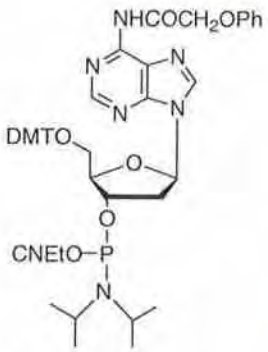
P-METHOXY

Milligen Cyclone	Beckman 1000	Pharmacia	ABI	Expedite	Price
3761-CYC-25A 3762-CYC-25C 3763-CYC-25G 3764-CYC-25T	3761-BK-25A 3762-BK-25C 3763-BK-25G 3764-BK-25T		3761-ABI-25A 3762-ABI-25C 3763-ABI-25G 3764-ABI-25T	3761-MEX-25A 3762-MEX-25C 3763-MEX-25G 3764-MEX-25T	$7.00/ 250mg
		3761-PH-04A 3762-PH-04C 3763-PH-04G 3764-PH-04T			$15.00/ 400mg
3761-CYC-05A 3762-CYC-05C 3763-CYC-05G 3764-CYC-05T	3761-BK-05A 3762-BK-05C 3763-BK-05G 3764-BK-05T		3761-ABI-05A 3762-ABI-05C 3763-ABI-05G 3764-ABI-05T	3761-MEX-05A 3762-MEX-05C 3763-MEX-05G 3764-MEX-05T	$16.00/ 500mg
3761-CYC-75A 3762-CYC-75C 3763-CYC-75G 3764-CYC-75T					$26.00/ 750mg
	3761-BK-10A 3762-BK-10C 3763-BK-10G 3764-BK-10T	3761-PH-10A 3762-PH-10C 3763-PH-10G 3764-PH-10T	3761-ABI-10A 3762-ABI-10C 3763-ABI-10G 3764-ABI-10T	3761-MEX-10A 3762-MEX-10C 3763-MEX-10G 3764-MEX-10T	$30.00/ 1.0gm
			3761-ABI-20A 3762-ABI-20C 3763-ABI-20G 3764-ABI-20T		$58.00/ 2.0gm
			3761-ABI-50A 3762-ABI-50C 3763-ABI-50G 3764-ABI-50T		$120.00/ 5.0gm

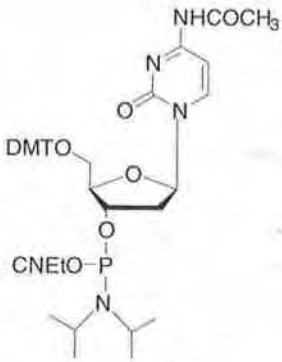
FOR PREPACKED DISPOSABLE COLUMNS-SEE PAGES 20-22
FOR ANCILLARY REAGENTS-SEE PAGES 13 - 17

DNA PHOSPHORAMIDITES (Cont.)

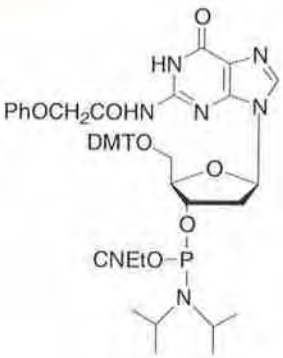
Fast Deprotecting Phosphoramidites
Fast Deprotection with AMA Reagent
(Using Base-Protected dA & dG bases and Ac-dC bases/ Standard Protection dA and dG bases & Ac-dC bases)



ANP-6661
N-PAC dAdenosine



ANP-5680-acdC
N-acetyl dCytidine



ANP-6663
N-PAC dGuanosine

Catalog #	Product	Prices $/500mg	$/gm	$/5gm	$/10gm
ANP-6661	N-PAC deoxy Adenosine phosphoramidite F.W.: 887.941	40.00	65.00	258.00	455.00
ANP-5560-ac-dC	deoxy Cytidine (N-acetyl) phosphoramidite F.W.: 771.820	26.00	40.00	145.00	270.00
ANP-6663	N-PAC deoxy Guanosine phosphoramidite F.W.: 903.941	40.00	65.00	258.00	455.00
ANP-5554	Thymidine phosphoramidite F.W.: 744.799	26.00	40.00	145.00	270.00
ANP-5990	2gm KIT (500mg each of the above 4 products):				$120.00
ANP-5991	4gm KIT (1gm each of the above 4 products):				$195.00
ANP--5992	20gm KIT (5 gm of each of the abve 4 products)				$900.00
ANP-5993	40gm KIT (10gm each of the above 4 products)				$1,600.00

Table 3, Recommended Conditions for Using Fast Deprotecting Phosphoramidites

(1) - (7)	Refer to Table 1 on page 8.	
(8)	Cleavage from the CPG support using AMA reagent, (50:50, aq ammonium hydroxide and aq methyl amine), AMA reagent available from Aldrich, Cat.# 2,775-1	5 minutes at R.T. 30 minutes at 37°C
(9)	Base Deprotection using the same AMA reagent.	10 minutes at 55°C

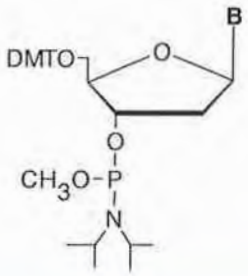
For shorter sequences, standard base protected dA& dG (Catalog# ANP 5551 and ANP 5553, along with Ac-dC (ANP5560ac-dC) can be used, while for long sequences Pac protected dA & dG listed here are recommended.

Note: Ancilliary reagents for DNA synthesis using Fast Deprotecting Phosphoramidites are available as listed on page 13-17.

SECTION 3 : DNA PHOSPHORAMIDITES

DNA PHOSPHORAMIDITES (Cont.)

5'-DMT Deoxynucleoside, p-methoxy phosphoramidite



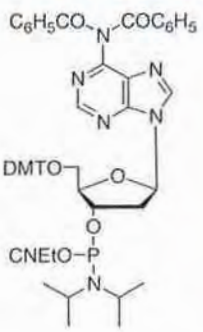
B	Cat. #
bzA	ANP 3761
bzC	ANP 3762
ibuG	ANP 3763
T	ANP 3764

Catalog #	Product	Qty.	Price$
ANP-3761	deoxy Adenosine (N-bz), p-methoxy phosphoramidite	500mg 1.0gm	16.00 30.00
	F.W.: 818.877		
ANP-3762	deoxy Cytidine (N-bz), p-methoxy phosphoramidite	500mg 1.0gm	16.00 30.00
	F.W.: 794.848		
ANP-3763	deoxy Guanosine (N-ibu), p-methoxy phosphoramidite	500mg 1.0gm	16.00 30.00
	F.W.: 800.863		
ANP-3764	Thymidine, p-methoxy phosphoramidite	500mg 1.0gm	16.00 30.00
	F.W.: 705.761		

**Requires p-methoxy deprotection with thiophenol or other nucleophiles instead of ammonia.
**Also useful for synthesis of p-methoxy neutral charge DNA.
**See page 75 for p-methoxy with N-PAC protection

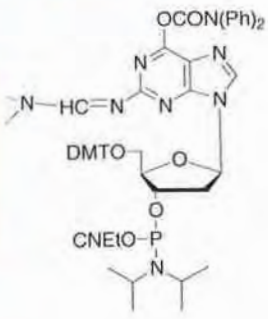
EXTRA PROTECTED PURINE DEOXY NUCLEOSIDE PHOSPHORAMIDITES FOR HIGH QUALITY DNA SYNTHESIS

N6-Dibenzoyl-deoxy Adenosine CED Phosphoramidite



Catalog #: ANP-6767
F.W.: 962.03
Price: $50.00/500mg
$80.00 /1.0 gm

N2-(Dimethylaminomethylidene) O6-(diphenylcarbamoyl)-deoxyguanosine CED Phosphoramidite



Catalog #: ANP-6768
F.W.: 1020.8
Price: $50.00/500mg
$80.00 /1.0 gm

For corresponding CPG Columns, please see page 35

ANCILLRY REAGENTS FOR AUTOMATED DNA SYNTHESIZERS

ABI Configurations

Catalog #	Product	Qty.	Price$
RN-1447-S-ABI	Acetonitrile Anhydrous	45m	9.00
RN-1447-M-ABI	(Phosphoramidite diluent, DNA Synthesis grade)	100ml	14.00
RN-1447-L-ABI		450ml	20.00
RN-1462-M-ABI	DMT Removal Reagent	450ml	27.00
RN-1462-L-ABI	(3% Trichloroacetic Acid/Dichloromethane)	2L	108.00
RN-1468-M-ABI	DMT Removal Reagent	450ml	36.00
RN-1468-L-ABI	(3% Dichloroacetic Acid/Dichloromethane)	2L	120.00
RN-1451-SS-ABI	Activation Reagent	45ml	26.00
RN-1451-S-ABI	(Tetrazole/Acetonitrile)	180ml	80.00
RN-1451-M-ABI		450ml	168.00
RN-1451-L-ABI		2L	640.00
RN-1411-ABI	Tetrazole (resublimed) M.W.: 70.06	1.5gm	19.00
RN-1458-SS-ABI	CAP A	45ml	15.00
RN-1458-S-ABI	(Acetic Anhydride/THF(Pyridine)	180ml	25.00
RN-1458-M-ABI		450ml	54.00
RN-1458-L-ABI		2L	230.00
RN-1481-SS-ABI	CAP B	45ml	15.00
RN-1481-S-ABI	(1-Methyl-Imidazole/THF)	180ml	25.00
RN-1481-M-ABI		450ml	54.00
RN-1481-L-ABI		2L	230.00
RN-1455-S-ABI	Oxidation Solution	200ml	20.00
RN-1455-M-ABI	(Iodine/Pyridine/THF/H_2O)	450ml	40.00
RN-1455-L-ABI	.02M Iodine	2L	168.00
RN-1456-S-ABI	Oxidation Solution	200ml	20.00
RN-1456-M-ABI	(Iodine/Pyridine/THF/H_2O)	450ml	40.00
RN-1456-L-ABI	0.1M Iodine	2L	168.00
RN-1465-ABI	Thiophenol/Triethylamine/Dioxane	10ml	28.00
	DNA Dryinng Traps *Please see page 19*		
RN-1470-S-ABI	Neutralizing Reagent	250ml	18.00
RN-1470-M-ABI	(Triethylamine/Acetonitrile)	450ml	30.00
RN-1470-L-ABI		950ml	50.00
RN-1535-S-ABI	Sulfurizing Reagent for Introduction of	100mg	15.00
RN-1535-M-ABI	Phosphorothioate, "Beaucage Reagent"	1.0gm	50.00
RN-1535-L-ABI	*for Silanized bottles, please see page 119*	2.0gm	90.00
RN-1471-ABI	Reagent KIT, consisting of one each as follows: (RN-1447-S, RN-1451-S, RN-1455-S, RN-1458-S, RN-1481-M, RN-1462-M)		$205.00
RN-1475-ABI	Reagent KIT, consisting of one each as follows: (RN-1447-M: Qty-2, RN-1451-M, RN-1455-M, RN-1458-M, RN-1481-L, RN-1462-L)		$600.00

ANCILLARY REAGENTS FOR AUTOMATED DNA SYNTHESIZERS (Cont.)

Pharmacia Configurations

Catalog #	Product	Qty.	Price$
RN-1447-S-PH	Acetonitrile Anhydrous	45ml	9.00
RN-1447-M-PH	(Phosphoramidite diluent, DNA Synthesis grade)	100ml	14.00
RN-1447-L-PH		1L	45.00
RN-1448-PH	Acetonitrile (wash)	1L	32.00
RN-1462-M-PH	DMT Removal Reagent	450ml	22.00
RN-1462-L-PH	(Trichloroacetic Acid/Dichloroethane)	1L	53.00
RN-1400-PH	Dichloroethane	1L	25.00
RN-1451-S-PH	Activation Reagent	45ml	26.00
RN-1451-M-PH	(Tetrazole/Acetonitrile)	60ml	30.00
RN-1411-PH	Tetrazole (resublimed)	2gm	25.00
	M.W.: 70.06		
RN-1458-S-PH	CAP A	45ml	15.00
RN-1458-M-PH	(Acetic Anhydride/THF)	100ml	20.00
RN-1458-L-PH		180ml	25.00
RN-1481-S-PH	CAP B1	50ml	16.00
RN-1481-M-PH	(1-Methyl-Imidazole/THF/pyridine)	180ml	25.00
RN-1461-S-PH	CAP B2	50ml	16.00
RN-1461-M-PH	(4-Dimethylamino pyridine/THF)	180ml	25.00
RN-1455-S-PH-02	Oxidation Solution (Iodine/Pyridine/THF/H_2O) 0.02 M*	100ml	14.00
RN-1455-M-PH-02	Oxidation Solution (Iodine/Pyridine/THF/H_2O) 0.02 M*	200ml	14.00
RN-1455-S-PH-01	Oxidation Solution (Iodine/Pyridine/THF/H_2O) 0.1 M*	100ml	14.00
RN-1455-M-PH-01	Oxidation Solution (Iodine/Pyridine/THF/H_2O) 0.1 M*	200ml	14.00
* Each oxidation solution is also available as :			
PH-01-I	Pyridine : H_2O: THF: 1:2:7		
PH-01-II	0.5% Iodine:THF		
	Please specify if desired in this formulation		
RN-1470-S-PH	Neutralizing Reagent	250ml	18.00
RN-1470-M-PH	(Triethylamine/Acetonitrile)	450ml	30.00
RN-1470-L-PH		950ml	50.00
RN-1535-S-PH	Sulfurizing Reagent for Introduction of	100mg	15.00
RN-1535-M-PH	Phosphorothioate, "Beaucage Reagent"	1.0gm	50.00
RN-1535-L-PH	*for Silanized bottles, please see page 119*	2.0gm	90.00
RN-1471-PH	Reagent KIT, consisting of one each as follows: (RN-1447-S, RN-1451-S, RN-1455-S, RN-1458-S, RN-1481-S, RN-1462-M, RN-1481-S or RN-1461-S)		$110.00
RN-1475-PH	Reagent KIT, consisting of one each as follows (RN-1447-M: Qty-2, RN-1451-M, RN-1455-M, RN-1458-M, RN-1481-M, RN-1481-M or RN-1461-M, RN-1462-L)		$165.00

DNA DRYING TRAPS - SEE PAGE 19

ANCILLARY REAGENTS FOR AUTOMATED DNA SYNTHESIZERS (Cont.)

Beckman Oligo 1000

Catalog #	Product	Qty.	Price$
RN-1447-S-BK	Acetonitrile Anhydrous	45ml	9.00
RN-1447-M-BK	(Phosphoramidite diluent, DNA Synthesis grade)	100ml	14.00
RN-1448-BK	Acetonitrile (wash)	1L	32.00
RN-1462-M-BK	DMT Removal Reagent	450ml	27.00
RN-1462-L-BK	(Trichloroacetic Acid/Dichloromethane)	2L	108.00
RN-1451-S-BK	Activation Reagent	180ml	80.00
RN-1451-M-BK	(Tetrazole/Acetonitrile)	450ml	168.00
RN-1458-S-BK	CAP A	180ml	25.00
RN-1458-M-BK	(Acetic Anhydride/THF/2,6-Lutidine)	450ml	54.00
RN-1481-S-BK	CAP B	180ml	25.00
RN-1481-M-BK	(1-Methyl-Imidazole/THF/Pyridine)	450ml	54.00
RN-1455-S-BK	Oxidation Solution	200ml	20.00
RN-1455-M-BK	(0.1M Iodine/Pyridine/THF/H_2O)	450ml	40.00
RN-1470-S-BK	Neutralizing Reagent	250ml	18.00
RN-1470-M-BK	(Triethylamine/Acetonitrile)	450ml	30.00
RN-1470-L-BK		950ml	50.00
RN-1535-S-BK	Sulfurizing Reagent for Introduction of	100mg	15.00
RN-1535-M-BK	Phosphorothioate, "Beaucage Reagent"	1.0gm	50.00
RN-1535-L-BK	*for Silanized bottles, please see page 119*	2.0gm	90.00
RN-1484-BK	Reagent KIT, consisting of one each as follows: (RN-1447-M, RN-1451-M, RN-1455-M, RN-1458-M, RN-1481-M, RN-1462-M)		$345.00

DNA DRYING TRAPS - SEE PAGE 19

ANCILLARY REAGENTS FOR AUTOMATED DNA SYNTHESIZERS

Milligen Cyclone Configurations

Catalog #	Product	Qty.	Price$
RN-1447-S-CYC	Acetonitrile Anhydrous	45ml	9.00
RN-1447-M-CYC	(Phosphoramidite diluent, DNA Synthesis grade)	100ml	14.00
RN-1468-M-CYC	DMT Removal Reagent	450ml	36.00
RN-1468-L-CYC	(2.5% Dichloroacetic Acid/Dichloromethane)	1L	50.00
RN-1451-M-CYC	Activation Reagent	120ml	60.00
RN-1451-L-CYC	(Tetrazole/Acetonitrile)	150ml	70.00
RN-1458-S-CYC	CAP A	90ml	20.00
RN-1458-M-CYC	(Acetic Anhydride/THF)	125ml	22.00
RN-1481-S-CYC	CAP B	90ml	20.00
RN-1481-M-CYC	(1-Methyl-Imidazole/THF/Pyridine)	125ml	22.00
RN-1455-S-CYC	Oxidation Solution	150ml	18.00
RN-1455-M-CYC	(Iodine/Pyridine/THF/H_2O)	235ml	23.00
	0.02M Iodine		
RN-1470-S-CYC	Neutralizing Reagent	250ml	18.00
RN-1470-M-CYC	(Triethylamine/Acetonitrile)	450ml	30.00
RN-1470-L-CYC		950ml	50.00
	DNA Drying Traps: *Please see page 19.*		
RN-1535-S-CYC	Sulfurizing Reagent for Introduction of	100mg	15.00
RN-1535-M-CYC	Phosphorothioate, "Beaucage Reagent"	1.0gm	50.00
RN-1535-L-CYC	*for Silanized bottles, please see page 119*	2.0gm	90.00
RN-1484-CYC	Reagent KIT, consisting of one each as follows: (RN-1447-M, RN-1451-M, RN-1455-M, RN-1458-M, RN-1481-M, RN-1468-M)		175.00

FOR DNA SYNTHESIS - PHOSPHORAMIDITES - SEE SECTION 3
FOR DNA SYNTHESIS - PREPACKED COLUMNS - SEE SECTION 5

TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

ANCILLARY REAGENTS FOR AUTOMATED DNA SYNTHESIZERS

Expedite Configurations

MODEL 8905

Catalog #	Product	Qty.	Price$
RN-1447-S-MEX5	Acetonitrile Anhydrous (Phosphoramidite diluent, DNA Synthesis grade)	45ml	10.00
RN-1448-MEX5	Acetonitrile (wash)	450ml	20.00
RN-1462-MEX5	DMT Removal Reagent (Trichloroacetic Acid/Dichloromethane)	180ml	12.00
RN-1451-MEX5	Activation Reagent (Tetrazole/Acetonitrile)	60ml	30.00
RN-1458-MEX5	CAP A (Acetic Anhydride/THF)	60ml	17.00
RN-1481-MEX5	CAP B (1-Methyl-Imidazole/THF/Pyridine)	60ml	17.00
RN-1455-MEX5	Oxidation Solution (0.02M I_2 Iodine/Pyridine/THF/H_2O)	60ml	12.00
RN-1470-S-MEX5	Neutralizing Reagent	250ml	18.00
RN-1470-M-MEX5	(Triethylamine/Acetonitrile)	450ml	30.00
RN-1535-S-MEX5	Sulfurizing Reagent "Beaucage Reagent"	100mg	15.00
RN-1535-M-MEX5	*for Silanized bottles, please see page 119*	1.0gm	50.00
	DNA Drying Traps *Please see page 19.*		
RN-1484-MEX5	Reagent KIT, consisting of one each as follows: (RN-1447-S, RN-1462, RN-1451, RN-1458, RN-1481, RN-1455, RN-1448)		$110.00

MODEL 8909

RN-1447-M-MEX9	Acetonitrile Anhydrous (Phosphoramidite diluent, DNA Synthesis grade)	100ml	14.00
RN-1448-MEX9	Acetonitrile (wash)	300ml	18.00
RN-1462-MEX9	DMT Removal Reagent (Trichloroacetic Acid/Dichloromethane)	900ml	50.00
RN-1451-MEX9	Activation Reagent (Tetrazole/Acetonitrile)	200ml	82.00
RN-1458-MEX9	CAP A (Acetic Anhydride/THF)	200ml	26.00
RN-1481-MEX9	CAP B (1-Methyl-Imidazole/THF/Pyridine)	200ml	26.00
RN-1455-MEX9	Oxidation Solution (0.02M Iodine/Pyridine/THF/H_2O)	200ml	20.00
RN-1470-L-MEX9	Neutralizing Reagent	950ml	50.00
RN-1535-L-MEX9	Sulfurizing Reagent "Beaucage Reagent"	2.0gm	90.00
RN-1535-M-MEX5	*for Silanized bottles, please see page 119*	1.0gm	50.00
RN-1484-MEX9	Reagent KIT, consisting of one each as follows: (RN-1447-M, RN-1448, RN-1462, RN-1451, RN-1458, RN-1481, RN-1455)		230.00

PURI-PAK™ CARTRIDGES

The **Puri-Pak**™ has been developed by ChemGenes to desalt oligonucleotides which have been purified by ion-exchange HPLC or Gel Electrophoresis, and also to produce high purity oligonucleotides after synthesis.

The **Puri-Pak**™ cartirdges are suitable for the following applications:
-Low scale and also 1.0 µmol scale purification of synthetic oligonucleotides, modified synthetic oligonucleotides carrying amino-terminals, biotin, phosphororthioate olignoucleotides, 2'-OMe-oligonucleotides.
-Desalting of oligonucleotides

Technical Details

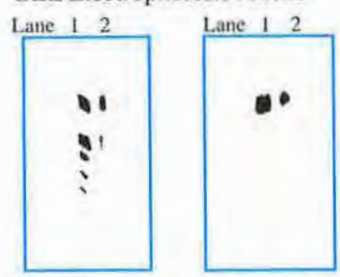
The Puri-Pak columns are designed for efficient and fast desalting of oligonucleotides. They are recommended for single use, and 25 OD units can be loaded. The Puri-Pak columns can also efficiently purify crude oligonucleotides. Also, 5'-DMT-ON oligonucleotides can be separated cleanly from the shorter deletion sequences.

After NH_3 deprotection of the oligonucleotide, the NH3 solution containing the dissolved oligo can be loaded directly onto the Puri-Pak column. We recommend washing the crude oligo with ether prior to removal of the cleaved base protecting groups. The oligo should then be dissolved in either water or 0.1M triethylammonium acetate (1-3ml) and loaded onto the Puri-Pak column.





GEL Electrophoresis Profile



(a) Before Puri-Pac™ purification of of synthetic oligonucleotides

(b) After Puri-Pac™ purification of of synthetic oligonucleotides

ORDERING INFORMATION

Catalog #	Product	Qty.	Prices($)
CSS-3920-1	Cartridge	1	6.50
CSS-3920-5	Cartridge	5	30.00
CSS-3920-10	Cartridge	10	55.00
CSS-3940-1	Barrel	1	8.00
CSS-3940-10	Barrel	10	65.00
CSS-3940-50	Barrel	50	300.00

AUTOMATED DNA PURIFICATION & DRYING TRAPS

ChemGenes Corporation now offers several manifold systems for DNA desalting/purification. The GeneSys-12™ and GeneSys-24 ™ allow parallel extraction, elution and filtration of synthetic DNA samples at scales between 50 nmole to 1 μ mole. These manifold consist of a clear glass cabinet and top, to which vacuum is applied. The 12 & 24 female luer connectors allow use of all 12 & 24 port or as many as required. These can be fitted with Puri Pak™ cartridges or barrels (please see page 18).

For 96 well purification, ChemGenes offers GeneSys-1 solid phase extraction/purification 96 well micro-purifier to enable parallel purification of approx. 5 OD (260 nm) to 50 OD (260 nm) quantities. The 96 position GeneSys-1 consists of a 96 well sample preparation plate, and a 96 well collection plate, which fit into Prep-Sep manifold™. (Prep-Sep manifold; is a trademark of Alltech Associates). The 96 well sample preparation plates are alpha numerically coded and packed with high quality packing materials suitable for DMT-ON purification/desalting of synthetic oligos.



Fig. 1. : GeneSys - 12 shown complete with Puri Pak cartridges and water aspirator



Fig. 2 : GeneSys - 1 shown with Prep-Sep manifold™ and 96 well extaraction plate.

Catalog #	Product	Price
GS-11542	GeneSys-12, complete with glass cabinet, top; female luer connectors and collection racks for sealing various sizes of tubes.	$550.00
GS-11586	GeneSys-24-complete with glass cabinet, top; female luer connectors and collection racks for sealing various sizes of tubes.	$780.00
GS-8366	GeneSys manifold for 96 well format GeneSys-1, complete with gasket for top and bottom plate, collection plate for 1 ml. liquid.	$2100.00
GS-3249	96 well extraction plate filled with packing material for synthetic DNA purificaiton/desalting.	$280.00

DNA MOISTURE TRAPS

For producing high quality and maintaining moisture-free environments in oligonucleotide sysnthesis. The use of these traps will generate super anhydrous conditions for high quality full length DNA/RNA. The traps are available in four different sizes: Small, Medium, Large, Extra Large.

They allow highly effective drying of either phosphoramidite solution in acetonitrile, tetrazole solution in acetonitrile (activator solution) or anhydrous acetonitrile used to make either phosphoramidite solutions or activator solutions. Further use of the trap in acetonitrile bottles for wash cycles traps maintain the DNA synthesizer, stay dry and results in consistently high coupling in the synthesis per cycle. The traps also restore the usability of "wet" acetonitrile (app. 250 ppm moisture content) and brings the moisture content below 50 ppm.

ORDERING INFORMATION

Catalog #	Size	Drying Capability	Price: 5	Price: 10
MTRAP-S	(small)	10-15 ml acetonitrile solution	$30.00/5	$55.00/10
MTRAP-M	(medium)	50-100 ml acetonitrile solution	$34.00/5	$60.00/10
MTRAP-L	(large)	up to 1 litre acetonitrile solution	$38.00/5	$65.00/10
MTRAP-EL	(extra large)	up to 4 litres acetonitrile solution	$40.00/5	$74.00/10

PREPACKED COLUMNS

Applied Biosystems, Expedite, & Pharmacia DNA & RNA Synthesizers
DNA Solid Support columns, Standard Protection

Size of CPG lcaa (long chain alkyl amino)	Scale of Synthesis
500 Ångstrom Pore Size	1.0 µmole Scale
1000 Ångstrom Pore Size	0.5 µmole Scale
2000 Ångstrom Pore Size	0.2 µmole Scale
	(50 nmole) 0.05 µmole Scale

Please inquire regarding other loadings and CPG sizes.

Catalog #	Product	Pack of 4 Columns	Price$
NSS-8101-5A1CL	500Å deoxy Adenosine (N-bz) lcaa CPG	1.0µmole	40.00
NSS-8102-5C1CL	500Å deoxy Cytidine (N-bz) lcaa CPG	1.0µmole	40.00
NSS-8103-5G1CL	500Å deoxy Guanosine (N-ibu) lcaa CPG	1.0µmole	40.00
NSS-8104-5T1CL	500Å Thymidine lcaa CPG	1.0µmole	40.00
NSS-8201-5A05CL	500Å deoxy Adenosine (N-bz) lcaa CPG	0.5µmole	36.00
NSS-8202-5C05CL	500Å deoxy Cytidine (N-bz) lcaa CPG	0.5µmole	36.00
NSS-8203-5G05CL	500Å deoxy Guanosine (N-ibu) lcaa CPG	0.5µmole	36.00
NSS-8204-5T05CL	500Å Thymidine lcaa CPG	0.5µmole	36.00
NSS-8301-5A02CL	500Å deoxy Adenosine (N-bz) lcaa CPG	0.2µmole	32.00
NSS-8302-5C02CL	500Å deoxy Cytidine (N-bz) lcaa CPG	0.2µmole	32.00
NSS-8303-5G02CL	500Å deoxy Guanosine (N-ibu) lcaa CPG	0.2µmole	32.00
NSS-8304-5T02CL	500Å Thymidine lcaa CPG	0.2µmole	32.00
NSS-8401-10A1CL	1000Å deoxy Adenosine (N-bz) lcaa CPG	1.0µmole	40.00
NSS-8402-10C1CL	1000Å deoxy Cytidine (N-bz) lcaa CPG	1.0µmole	40.00
NSS-8403-10G1CL	1000Å deoxy Guanosine (N-ibu) lcaa CPG	1.0µmole	40.00
NSS-8404-10T1CL	1000Å Thymidine lcaa CPG	1.0µmole	40.00
NSS-8501-10A05CL	1000Å deoxy Adenosine (N-bz) lcaa CPG	0.5µmole	36.00
NSS-8502-10C05CL	1000Å deoxy Cytidine (N-bz) lcaa CPG	0.5µmole	36.00
NSS-8503-10G05CL	1000Å deoxy Guanosine (N-ibu) lcaa CPG	0.5µmole	36.00
NSS-8504-10T05CL	1000Å Thymidine lcaa CPG	0.5µmole	36.00
NSS-8601-10A02CL	1000Å deoxy Adenosine (N-bz) lcaa CPG	0.2µmole	32.00
NSS-8602-10C02CL	1000Å deoxy Cytidine (N-bz) lcaa CPG	0.2µmole	32.00
NSS-8603-10G02CL	1000Å deoxy Guanosine (N-ibu) lcaa CPG	0.2µmole	32.00
NSS-8604-10T02CL	1000Å Thymidine lcaa CPG	0.2µmole	32.00
NSS-8701-10A005CL	1000Å deoxy Adenosine (N-bz) lcaa CPG	0.05µmole (50 nmole)	32.00
NSS-8702-10C005CL	1000Å deoxy Cytidine (N-bz) lcaa CPG	0.05µmole (50 nmole)	32.00
NSS-8703-10G005CL	1000Å deoxy Guanosine (N-ibu) lcaa CPG	0.05µmole (50 nmole)	32.00
NSS-8704-10T005CL	1000Å Thymidine lcaa CPG	0.05µmole (50 nmole)	32.00

For Corresponding Unpacked CPG Supports, Please See Pages 85-89

PREPACKED COLUMNS (Cont.)

Applied Biosystems, Expedite, & Pharmacia DNA & RNA Synthesizers
DNA Solid Support columns, Standard Protection (Cont.)

Size of CPG lcaa (long chain alkyl amino)

500 Ångstrom Pore Size
1000 Ångstrom Pore Size
2000 Ångstrom Pore Size

Scale of Synthesis

1.0 µmole Scale
0.5 µmole Scale
0.2 µmole Scale
(50 nmole) 0.05 µmole Scale

Please inquire regarding other loadings and CPG sizes.

Catalog #	Product	Pack of 4 Columns	Price$
NSS-8801-20A1CL	2000Å deoxy Adenosine (N-bz) lcaa CPG	1.0µmole	40.00
NSS-8802-20C1CL	2000Å deoxy Cytidine (N-bz) lcaa CPG	1.0µmole	40.00
NSS-8803-20G1CL	2000Å deoxy Guanosine (N-ibu) lcaa CPG	1.0µmole	40.00
NSS-8804-20T1CL	2000Å Thymidine lcaa CPG	1.0µmole	40.00
NSS-8901-20A05CL	2000Å deoxy Adenosine (N-bz) lcaa CPG	0.5µmole	36.00
NSS-8902-20C05CL	2000Å deoxy Cytidine (N-bz) lcaa CPG	0.5µmole	36.00
NSS-8903-20G05CL	2000Å deoxy Guanosine (N-ibu) lcaa CPG	0.5µmole	36.00
NSS-8904-20T05CL	2000Å Thymidine lcaa CPG	0.5µmole	36.00
NSS-9001-20A02CL	2000Å deoxy Adenosine (N-bz) lcaa CPG	0.2µmole	32.00
NSS-9002-20C02CL	2000Å deoxy Cytidine (N-bz) lcaa CPG	0.2µmole	32.00
NSS-9003-20G02CL	2000Å deoxy Guanosine (N-ibu) lcaa CPG	0.2µmole	32.00
NSS-9004-20T02CL	2000Å Thymidine lcaa CPG	0.2µmole	32.00
NSS-9101-20A005CL	2000Å deoxy Adenosine (N-bz) lcaa CPG	0.05µmole (50 nmole)	32.00
NSS-9102-20C005CL	2000Å deoxy Cytidine (N-bz) lcaa CPG	0.05µmole (50 nmole)	32.00
NSS-9103-20G005CL	2000Å deoxy Guanosine (N-ibu) lcaa CPG	0.05µmole (50 nmole)	32.00
NSS-9104-20T005CL	2000Å Thymidine lcaa CPG	0.05µmole (50 nmole)	32.00

For Corresponding Unpacked CPG Supports, Please See Pages 85-89

PREPACKED COLUMNS (Cont.)

Applied Biosystems, Expedite & Pharmacia DNA & RNA Synthesizers
DNA Solid Support columns, N-PAC Protection and Fast-Deprotection

Size of CPG lcaa (long chain alkyl amino)

500 Ångstrom Pore Size
1000 Ångstrom Pore Size
Please inquire for other loadings and CPG sizes.

Scale of Synthesis

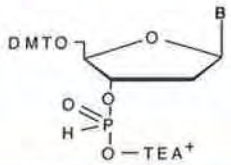
1.0 µmole Scale
0.5 µmole Scale
0.2 µmole Scale
0.05 µmole Scale (50 nmole)

Catalog #	Product	Pack of 4 Columns	Price$
NSS-P8101-5A1CL	500Å deoxy Adenosine (N-PAC) lcaa CPG	1.0µmole	48.00
NSS-P8102-5C1CL	500Å deoxy Cytidine (N-PAC) lcaa CPG	1.0µmole	48.00
NSS-8102-5CAC1CL	500Å deoxy Cytidine (n-Ac) lcaa CPG	1.0µmole	48.00
NSS-8102-5CIBU1CL	500Å deoxy Cytidine (n-ibu) lcaa CPG	1.0µmole	48.00
NSS-P8103-5G1CL	500Å deoxy Guanosine (N-PAC) lcaa CPG	1.0µmole	48.00
NSS-8104-5T1CL	500Å Thymidine lcaa CPG	1.0µmole	48.00
NSS-P8201-5A05CL	500Å deoxy Adenosine (N-PAC) lcaa CPG	0.5µmole	40.00
NSS-P8202-5C05CL	500Å deoxy Cytidine (N-PAC) lcaa CPG	0.5µmole	40.00
NSS-P8202-5CAC05CL	500Å deoxy Cytidine (n-Ac) lcaa CPG	0.5µmole	40.00
NSS-P8202-5CIBU05CL	500Å deoxy Cytidine (n-Ibu) lcaa CPG	0.5µmole	40.00
NSS-P8203-5G05CL	500Å deoxy Guanosine (N-PAC) lcaa CPG	0.5µmole	40.00
NSS-8204-5T05CL	500Å Thymidine lcaa CPG	0.5µmole	40.00
NSS-P8301-5A02CL	500Å deoxy Adenosine (N-PAC) lcaa CPG	0.2µmole	32.00
NSS-P8302-5C02CL	500Å deoxy Cytidine (N-PAC) lcaa CPG	0.2µmole	32.00
NSS-P8302-5CAC02CL	500Å deoxy Cytidine (n-Ac) lcaa CPG	0.2µmole	32.00
NSS-P8302-5C02CL	500Å deoxy Cytidine (n-Ibu) lcaa CPG	0.2µmole	32.00
NSS-P8303-5G02CL	500Å deoxy Guanosine (N-PAC) lcaa CPG	0.2µmole	32.00
NSS-8304-5T02CL	500Å Thymidine lcaa CPG	0.2µmole	32.00
NSS-P8401-10A1CL	1000Å deoxy Adenosine (N-PAC) lcaa CPG	1.0µmole	48.00
NSS-P8402-10C1CL	1000Å deoxy Cytidine (N-PAC) lcaa CPG	1.0µmole	48.00
NSS-P8402-10CAC1CL	1000Å deoxy Cytidine (n-Ac) lcaa CPG	1.0µmole	48.00
NSS-P8402-10CIBU1CL	1000Å deoxy Cytidine (n-Ibu) lcaa CPG	1.0µmole	48.00
NSS-P8403-10G1CL	1000Å deoxy Guanosine (N-PAC) lcaa CPG	1.0µmole	48.00
NSS-8404-10T1CL	1000Å Thymidine lcaa CPG	1.0µmole	48.00
NSS-P8501-10A05CL	1000Å deoxy Adenosine (N-PAC) lcaa CPG	0.5µmole	40.00
NSS-P8502-10C05CL	1000Å deoxy Cytidine (N-PAC) lcaa CPG	0.5µmole	40.00
NSS-P8502-10C05CL	1000Å deoxy Cytidine (n-Ac) lcaa CPG	0.5µmole	40.00
NSS-P8502-10C05CL	1000Å deoxy Cytidine (n-Ibu) lcaa CPG	0.5µmole	40.00
NSS-P8503-10G05CL	1000Å deoxy Guanosine (N-PAC) lcaa CPG	0.5µmole	40.00
NSS-8504-10T05CL	1000Å Thymidine lcaa CPG	0.5µmole	40.00
NSS-P8601-10A02CL	1000Å deoxy Adenosine (N-PAC) lcaa CPG	0.2µmole	32.00
NSS-P8602-10C02CL	1000Å deoxy Cytidine (N-PAC) lcaa CPG	0.2µmole	32.00
NSS-P8602-10CAC02CL	1000Å deoxy Cytidine (n-Ac) lcaa CPG	0.2µmole	32.00
NSS-P8602-10CIbu02CL	1000Å deoxy Cytidine (n-Ibu) lcaa CPG	0.2µmole	32.00
NSS-P8603-10G02CL	1000Å deoxy Guanosine (N-PAC) lcaa CPG	0.2µmole	32.00
NSS-8604-10T02CL	1000Å Thymidine lcaa CPG	0.2µmole	32.00
NSS-P8701-10A005CL	1000Å deoxy Adenosine (N-PAC) lcaa CPG	0.05µmole (50 nmole)	32.00
NSS-P8702-10C005CL	1000Å deoxy Cytidine (N-PAC) lcaa CPG	0.05µmole (50 nmole)	32.00
NSS-P8702-10CAC005CL	1000Å deoxy Cytidine (n-Ac) lcaa CPG	0.05µmole (50 nmole)	32.00
NSS-P8702-10CIBU005CL	1000Å deoxy Cytidine (n-Ibu) lcaa CPG	0.05µmole (50 nmole)	32.00
NSS-P8703-10G005CL	1000Å deoxy Guanosine (N-PAC) lcaa CPG	0.05µmole (50 nmole)	32.00
NSS-8704-10T005CL	1000Å Thymidine lcaa CPG	0.05µmole (50 nmole)	32.00

For Corresponding Unpacked CPG Supports, Please See Pages 85 - 95

H-PHOSPHONATE MONOMERS

(For DNA synthesis via H-Phosphonate chemistry)



B	Cat. #
bzA	ANP 3410
bzC	ANP 3411
ibuG	ANP 3412
T	ANP 3413

Catalog #	Product	Qty.	Price$
ANP-3410	deoxy Adenosine (N-bz), H-phosphonate TEA Salt F.W.: 822.871	250mg 500mg	25.00 45.00
ANP-3411	deoxy Cytidine (N-bz), H-phosphonate TEA Salt F.W.: 798.842	250mg 500mg	25.00 45.00
ANP-3412	deoxy Guanosine (N-ibu), H-phosphonate TEA Salt F.W.: 804.857	250mg 500mg	25.00 45.00
ANP-3413	Thymidine, H-phosphonate TEA Salt F.W.: 709.755	250mg 500mg	25.00 45.00

ANCILLARY REAGENTS FOR AUTOMATED DNA SYNTHESIZERS

(For H-Phosphonate Chemistry)

Catalog #	Product	Qty.	Price$
RN-6464	Dipentafluorophenyl carbonate* (Highly efficient coupling reagent for H-Phosphonate chemistry and superior to Adamantanecarbonylchloride)	2 gm. 5 gm.	65.00 120.00
RN-6664	Activator for monomers and Capping Reagent (Adamantane Carbonyl Chloride)	2gm.	10.00
RN-4523-P	Acetonitrile/Pyridine (50:50), Anhydrous (Diluent for monomers)	100ml	18.00
RN-1356-P2	Acetonitrile/Pyridine (95:5), Anhydrous (Diluent for activator)	100ml	18.00
RN-6645-IP	Capping for ABI synthesizers (Isopropyl Phosphite/Acetonitrile/Pyridine)	45ml	27.00
RN-7684-AP	Acetonitrile/Pyridine (Wash solvent)	960ml	67.00
RN-1210-PHT	**Oxidation Solution 1 (Iodine in Pyridine/H_2O/THF)	45ml	9.00
RN-1220-THT	**Oxidation Solution 2 (THF/H_2O/TEA)	45ml	9.00

*V.A. Efimov, A.L.Kalinkina and O.G. Chakhmakhcheva, Nucl. Acids. Res., Vol. 2, 5337-5344 (1993).

**Note: Both Oxidation Solutions, 1 and 2, are needed for H-phosphonate oxidation.

H-PHOSPHONATE MONOMERS (Cont.)

CATALOG NUMBERS OF H - PHOSPHONATE MONOMERS FOR VARIOUS DNA/RNA SYNTHESIZERS

Milligen Cyclone	Beckman 1000	Pharmacia	ABI	Expedite	Price
3410-CYC-25A 3411-CYC-25C 3412-CYC-25G 3413-CYC-25T	3410-BK-25A 3411-BK-25C 3412-BK-25G 3413-BK-25T		3410-ABI-25A 3411-ABI-25C 3412-ABI-25G 3413-ABI-25T	3410-MEX-25A 3411-MEX-25C 3412-MEX-25G 3413-MEX-25T	$25.00/ 250 mg.
		3410-PH-04A 3411-PH-04C 3412-PH-04G 3413-PH-04T			$31.00/ 400mg
3410-CYC-05A 3411-CYC-05C 3412-CYC-05G 3413-CYC-05T	3410-BK-05A 3411-BK-05C 3412-BK-05G 3413-BK-05T		3410-ABI-05A 3411-ABI-05C 3412-ABI-05G 3413-ABI-05T	3410-MEX-05A 3411-MEX-05C 3412-MEX-05G 3413-MEX-05T	$45.00/ 500mg
3410-CYC-75A 3411-CYC-75C 3412-CYC-75G 3413-CYC-75T					$70.00/ 750mg
	3410-BK-10A 3411-BK-10C 3412-BK10G 3413-BK-10T	3410-PH-10A 3411-PH-10C 3412-PH-10G 3413-PH-10T	3410-ABI-10A 3411-ABI-10C 3412-ABI-10G 3413-ABI-10T	3410-MEX-10A 3411-MEX-10C 3412-MEX-10G 3413-MEX-10T	$84.00/ 1.0gm
			3410-ABI-20A 3411-ABI-20C 3412-ABI-20G 3413-ABI-20T		$154.00/ 2.0gm
			3410-ABI-50A 3411-ABI-50C 3412-ABI-50G 3413-ABI-50T		$378.00/ 5.0gm

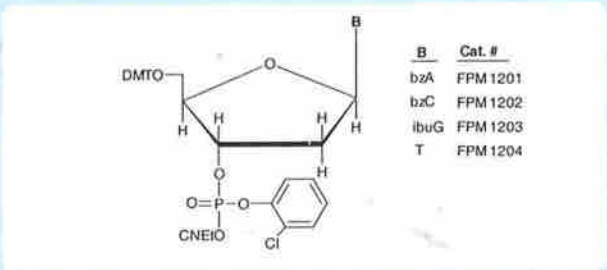
FOR PREPACKED DISPOSABLE COLUMNS-SEE PAGES 20-22

FOR ANCILLARY REAGENTS-SEE PAGE 23

O-CHLOROPHENYL NUCLEOSIDE TRIESTERS

5'-DMT-Deoxynucleoside-3'-(Ortho-chlorophenyl)-Cyanoethyl Phosphates

(For DNA Synthesis via Triester Chemistry)



B	Cat. #
bzA	FPM 1201
bzC	FPM 1202
ibuG	FPM 1203
T	FPM 1204

Catalog #	Product	Prices $/500mg	$/gm	$/5gm
FPM-1201	deoxy Adenosine (N-bz)-3'-O-chlorophenyl phosphate F.W. 901.284	52.00	85.00	325.00
FPM-1202	deoxy Cytidine (N-bz)-3'-O-chlorophenyl phosphate F.W. 877.255	52.00	85.00	325.00
FPM-1203	deoxy Guanosine (N-ibu)-3'-O-chlorophenyl phosphate F.W. 883.270	61.00	102.00	468.00
FPM-1204	Thymidine-3'-O-chlorophenyl phosphate F.W. 788.168	40.00	68.00	285.00
FPM-1205	4gm KIT (1gm each of the above 4 products):		$326.00	
FPM-1206	Oligodeoxynucleoside synthesis KIT: (sufficient for ≈ 3 sixteen nucleotide long oligomers)		$375.00	

Consists of the following:

(a) 500mg each of the above four, FPM-1201..1204
(b) 100mg each of all four Polystyrene Supported Nucleosides (NSS-7501-1..7504-1, page 98)
(c) 5.0gm of MSNT (RN-1403, page 118)
(d) 5.0gm of Pyridine-2-Carboxaldoxime (RN-1440, page 118)
(e) 10ml of N, N, N', N'-Tetramethyl Guanidine (RN-1445, page 118)
(f) A protocol for synthesis

MODIFIED DEOXY NUCLEOSIDE PHOSPHORAMIDITES

5'-DMT Modified Deoxynucleoside, CED Phosphoramidites (For Sequencing / Therapeutic Studies)

AVAILABLE IN MILLIGEN CYCLONE, BECKMAN 1000, PHARMACIA, ABI AND EXPEDITE CONFIGURATIONS

Substituted Pyrimidines and Purines

The incorporation of modified purines and pyrimidines has been utilized to optimize DNA-protein interactions and sequence recognition for many proteins and enzymes such as repressor proteins, restriction endonucleases, modification enzymes, and promoters (J. W. Dubendorff, P. L. de Hasett, M. S. Rosendahl, M. H. Caruthers, J. Biol. Chem., 262, 892, 1987; C. A. Brennan, M. D. Van Cleve, R. I. Gumpert, J. Biol. Chem., 261, 7270 & 7279, 1986).

C-5 substituted Pyrimidines

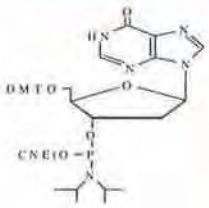
C-5 methyl pyrimidine nucleosides are known to stabilize duplexes relative to their non-methylated bases. Therefore, enhanced stability can be achieved by using ***5-methyl-2'-deoxy Cytidine*** *instead of 2'-deoxy Cytidine and the same is true for the Thymidine duplex [(A-T)$_n$] which have enhanced stability compared to the 2'-deoxy Uridine duplex [(A-U)$_n$]. Triple helix formation is enhanced and occurs over a wide pH range using* ***5-methyl-2'-deoxy Cytidine*** *in synthetic DNA (B. C. Froehler, S. Wadawani, T. J. Terhorst, S. R. Gerrard, Tet. Letters, 33, 5307, 1992; J. Kyrp, J. Sagi, E. Szakonyi, K. Ebinger, H. Penazova, J. Chadkova, Biochemistry, 33, 3801, 1994, L. E. Xodo, G. Manzini, F. Quadrifoglio, G. A. van der Marel, J. H. vanBoom, Nucl. Acids Res., 19, 5625, 1991). Even further improved binding is observed using 5-halogen substituted pyrimidines. Thus substitution of thymine by 5-bromouracil extends the helix stability (T. J. Posvic, P. B. Dervan, J. Am. Chem. Soc., 111, 3059, 1989). The* ***5-bromo-2'-deoxy Uridine phosphoramidite*** *has been previously incorporated into synthetic DNA (T. A. Allen, K. L. Wick, K. S. Matthews, J. Biol. Chem., 266, 6113, 1991).*

The modified base ***5-Methyl Cytidine*** *constitutes appr. 1% of human DNA. This modification is also produced by mutation in human and somatic cells (J. C. Shen, W. M. Rideout III, P. A. Jones, Nucl. Acids Res., 22, 972, 1994).*

C-8 substituted Purine Deoxy and Ribonucleosides

The bromo in Adenosine and Guanosine at the C-8 position is photolabile in nature. The ***8-Bromo-deoxy Adenosine phosphoramidite*** *has been incorporated into synthetic DNA as a means to create a site which can be photo-activated after duplex formation. Such DNA or RNA probes containing* ***8-bromo Adenosine or Guanosine*** *could thus be useful to determine specific contact in protein DNA complexes (J. Liu, G. L. Verdine, Tet. Letters, 33, 4265, 1992).*

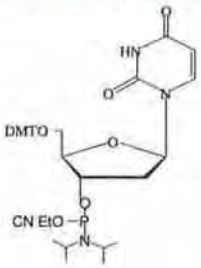
DEOXY INOSINE PHOSPHORAMIDITE



Catalog #: ANP-6411
F.W.: 754.799
Price: $50.00/100µm
$150.00/250mg
$275.00/500mg

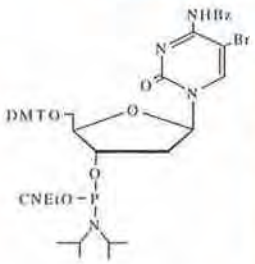
For Corresponding CPG columns, see page 33-35

DEOXY URIDINE PHOSPHORAMIDITE



Catalog #: ANP-6131
F.W.: 730.773
Price: $50.00/100µm
$150.00/250mg
$275.00/500mg

5-BROMO-DEOXY CYTIDINE (N-bz) PHOSPHORAMIDITE



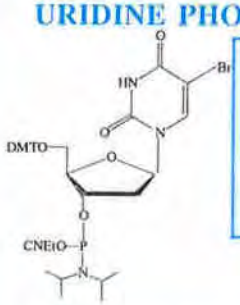
Catalog #: ANP-6141
F.W.: 912.794
Price: $50.00/100µm
$150.00/250mg
$275.00/500mg

For Corresponding CPG columns, see page 33-35

MODIFIED DEOXY NUCLEOSIDE PHOSPHORAMIDTES (Cont.)

5'-DMT Modified Deoxynucleoside, CED Phosphoramidites (Cont.)
(For Sequencing/ Therapeutic Studies)

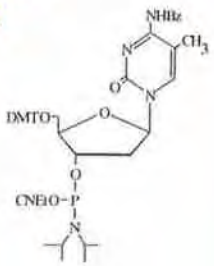
5-BROMO-DEOXY URIDINE PHOSPHORAMIDITE



Catalog #: ANP-6415
F.W.: 809.663
Price: $50.00/100 µM
$150.00/250mg
$275.00/500mg

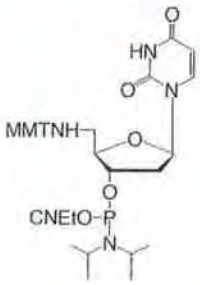
5-METHYL-DEOXY CYTIDINE (N-bz) PHOSPHORAMIDITE

Catalog #: ANP-6421
F.W.: 847.912
Price: $100.00/100µM
$250.00/250mg



For Corresponding CPG columns, see page 33 - 35

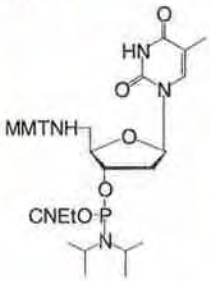
5'-AMINO 2'-DEOXY URIDINE PHOSPHORAMIDITE



Catalog #: ANP-9401
F.W.: 699.66
Price: $: 165.00/100µM
$ 325.00/250mg

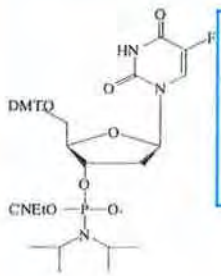
5'-AMINO 2'-DEOXY THYMIDINE PHOSPHORAMIDITE

Catalog #: ANP-9402
F.W.: 713.66
Price: $165.00/100µM
$325.00/250mg



For Corresponding CPG columns, see page 33 - 35

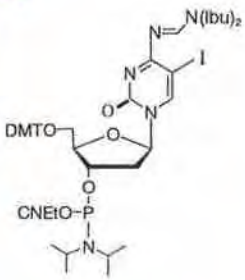
5-FLUORO-2'-DEOXY URIDINE PHOSPHORAMIDITE



Catalog #: ANP-6151
F.W.: 748.765
Price: $125.00/100 µM
$350.00/250mg
$680.00/500mg

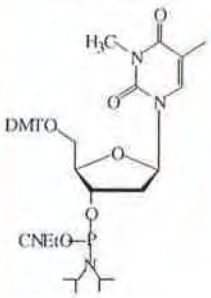
5-IODO-DEOXY CYTIDINE (N-dbf) PHOSPHORAMIDITE (5-IODO-DEOXY CYTIDINE)

Catalog #: ANP-45911
F.W.: 1037.76
Price: $110.00/100µM
$300.00/250mg



For Corresponding CPG columns, see page 33 - 35

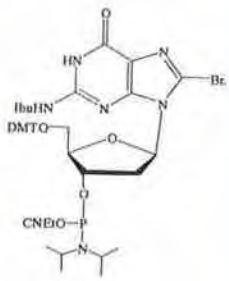
N^3-METHYL-2'-DEOXY THYMIDINE PHOSPHORAMIDITE



Catalog #: ANP-6153
F.W. 758.825
Price: $115.00/100µM
$260.00/250mg

8-BROMO-DEOXY GUANOSINE (N-ibu) PHOSPHORAMIDITE

Catalog #: ANP-6152
F.W.: 918.809
Price: $95.00/100 µM
$130.00/250mg
$240.00/500mg



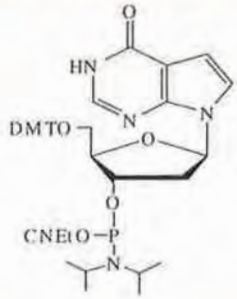
For Corresponding CPG columns, see page 33 - 35

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MODIFIED DEOXY NUCLEOSIDE PHOSPHORAMIDTES (Cont.)

5'-DMT Modified Deoxynucleoside, CED Phosphoramidites (Cont.)
7-Deaza Deoxy Purine Phosphoramidites
(For Sequencing/ Therapeutic Studies)
AVAILABLE IN MILLIGEN CYCLONE, BECKMAN 1000, PHARMACIA, ABI AND EXPEDITE CONFIGURATIONS

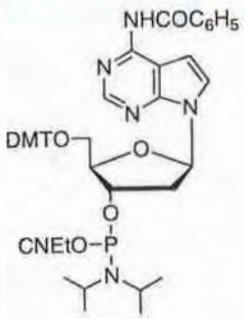
5'-DMT-7-DEAZA-2'-DEOXY INOSINE 3'-PHOSPHORAMIDITE



Catalog #: ANP-1145
F.W: 753.79
Prices : $ 165.00/50µmole
$ 300.00/100µmole
$ 900.00/250mg
Purity: 98%+

For Corresponding CPG columns, see page 33 - 35

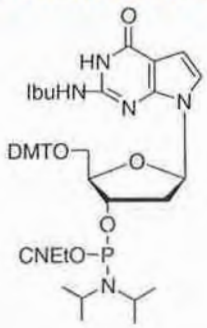
5'-DMT-7-DEAZA-2'-DEOXY ADENOSINE (n-bz) PHOSPHORAMIDITE



Catalog #: ANP-48515
F.W.: 856.925
Price: $165.00/50µm
$300.00/100µm
$900.00/250mg
Purity: 98%+

For Corresponding CPG columns, see page 33 - 35

5'-DMT-7-DEAZA-2'-DEOXY GUANOSINE (n-ibu) PHOSPHORAMIDITE



Catalog #: ANP-48575
F.W.: 838.911
Price: $165.00/50µm
$300.00/100µm
$900.00/250mg
Purity: 98%+

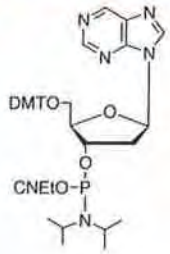
For Corresponding CPG columns, see page 33 - 35

7-Deaza 2'-deoxy Inosine, Adenosine (2'-deoxytubercidin) and Guanosine
These analogs of natural deoxy Inosine, deoxy Adenosine and deoxy Guanosine have found great interest among molecular biologists for the purpose of localizing DNA-enzyme interactions (F. Seela, H. Driller, Nucl. Acids Res., 13, 911, 1985) and facilitating DNA sequencing using M13 chain-termination methodology (S. Mizusawa, S. Nishimura, F. Seela, Nucl. Acids Res., 14, 1315, 1986). The high stability of the oligomers containing these bases and their possible application in MALDI mass spectrometry (K. Schneider, B. T. Chait, Nucl. Acids Res., 23. 1570, 1995) allows for these substances to play a key role in DNA sequencing.

MODIFIED DEOXY NUCLEOSIDE PHOSPHORAMIDTES (Cont.)

5'-DMT Modified Deoxynucleoside, CED Phosphoramidites (Cont.)
(For Sequencing/ Therapeutic Studies)

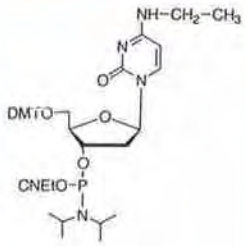
Purine 2'-deoxy Riboside Phosphoramidite



Catalog #:ANP-7601
F.W: 738.8
Price $: 95.00/100µmole
240.00/250mg
Purity: 98%+

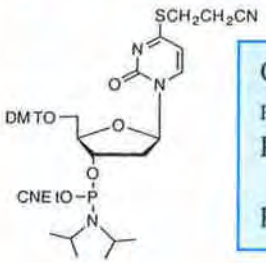
N-Ethyl 2'-deoxy Cytidine Phosphoramidite

Catalog #: ANP-6444
F.W: 757.85
Prices $: 95.00/100µmole
240.00/250mg
Purity: 98%+



For Corresponding CPG columns, see page 33 - 35

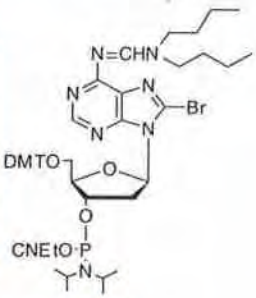
5'-DMT-4-Thiocyanoethyl-2'-deoxy Uridine CED phosphoramidite
(for the introduction of 2'-deoxy-4-thiouridine)



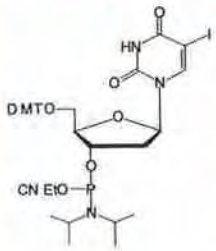
Catalog #:ANP-7624
F.W: 799.92
Price $: 125.00/100µmole
350.00/250 mg
Purity: 98%+

5'-DMT-8-Bromo-2'deoxy Adenosine (N,N-dibutyl formamidine) CED phosphoramidite

Catalog #: ANP-4791
F.W: 971.96
Prices $: 135.00/100 µmole
315.00/250 mg
Purity: 98%+



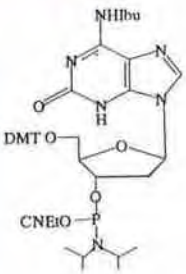
5-Iodo-Deoxy Uridine CED Phoshporamidite (5-Iodo Deoxy Uridine)



Catalog #: ANP-46711
F.W.: 856.675
Price: $55.00/100µm
$150.00/250mg
Purity 98%+

5'-DMT-2'- Deoxy-Isoguanosine(ibu) CED-phosphoramidite

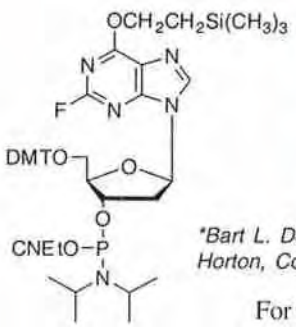
Catalog #: ANP-4267
F.W: 839-9
Prices $: 125.00/100µmole
350.00/250mg
Purity: 98%+



For Corresponding CPG columns, see page 33 - 35

For Corresponding CPG columns, see page 33 - 35

2-Fluoro-2'-deoxy Inosine (O6-tert-butyl silyl ethoxy) 5'-DMT-CED-phosphoramidite
*(for post-synthetic modification of Guanosine-Carbon-2)**



Catalog #:ANP-7702
F.W: 873.04
Prices $: 135.00/100µmole
365.00/250mg
Purity: 98%+

**Bart L. DeCorte, Dimitrios Tsarouhtsis, Satyanarayan Kuchimanchi, Monica D. Cooper, Pamela Horton, Constance M. Harris, and Thomas S. Harris, Chem. Res. Toxicol. 9, 630-637 (1996).*

For Corresponding CPG columns, see page 33 - 35

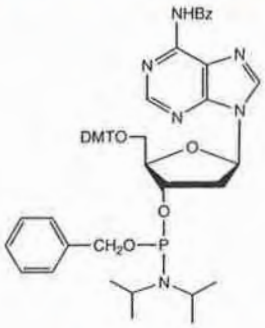
TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

MODIFIED DEOXY NUCLEOSIDE PHOSPHORAMIDTES (Cont.)

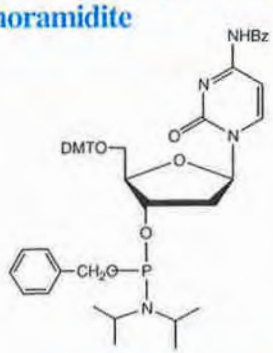
5'-DMT p-o-benzyl Deoxynucleoside, Phosphoramidites*

AVAILABLE IN MILLIGEN CYCLONE, BECKMAN 1000, PHARMACIA, ABI AND EXPEDITE CONFIGURATIONS

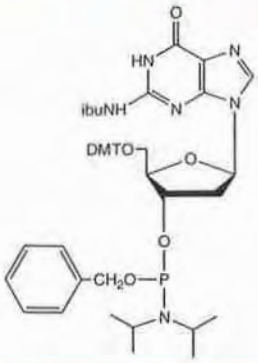
ANP-6731 5'-DMT-2'-deoxy Adenosine(n^6-bz)3'-p-o benzyl phosphoramidite



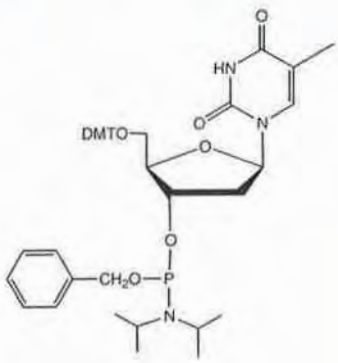
ANP-6732 5'-DMT-2'-deoxy-Cytidine (N^4-bz) 3'-p-o benzyl phosphoramidite



ANP-6733 5'-DMT-2'-deoxy-Guanosine(N^2-ibu) 3'-p-o-benzyl phosphoramidite



ANP-6734 5'-DMT Thymidine 3'-p-o-benzyl -Phosphoramidite



Catalog #	Name	Price$ 100mg	0.5gm	1.0gm
ANP-6731	5'-DMT-2'-deoxy Adenosine(bz) 3'-p-o benzyl phosphoramidite F.W: 894.915	24.00	68.00	128.00
ANP-6732	5'-DMT-2'-deoxy Cytidine(bz) 3'- p-o benzyl phosphoramidite F.W: 870.97	24.00	68.00	128.00
ANP-6733	5'-DMT-2'-deoxy Guanosine(ibu) 3'- p-o benzyl phosphoramidite F.W: 876.9	24.00	68.00	128.00
ANP-6734	5'-DMT-2'-deoxy Thymidine 3'- p-o benzyl phosphoramidite F.W: 781.799	22.00	65.00	115.00

* For the Synthesis of Natural DNA fragments. Cleavege of p-o-benzyl phosphate occurs smoothly with aq ammonia.
* For the synthesis of sequence specific phophoramidates
Ref : John Nielson and Marvin H. Caruthers, J. Am. Chem. Soc., 110, 6275-6276 (1988).

TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

MODIFIED DEOXY NUCLEOSIDE PHOSPHORAMIDITES (Cont.)

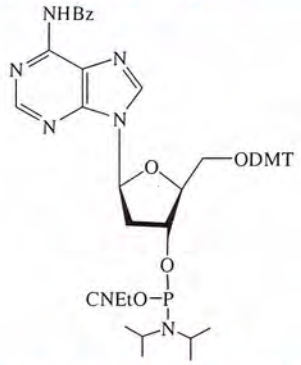
(For Crosslinking/ Therapeutic Studies)

AVAILABLE IN MILLIGEN CYCLONE, BECKMAN 1000, PHARMACIA, ABI AND EXPEDITE CONFIGURATIONS

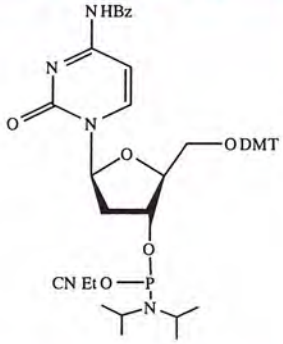
Mirror Image of Natural DNA
***** Offer A Wide Variety of Applications *****
β-L- Deoxy Nucleoside Phosphoramidites
For The Synthesis of L-DNA

1. β-L-deoxyribonucleoside polymers do not form double strands with complementary strands. *Ulysse Aseline, et. al., N.A.R. 19, 15 4067-4074 (1991).*
2. β-L-deoxyribonucleosides have high resistance to digestion by various nucleases.
3. Synthetic 56-nucleotide β-L-DNA bind with Vasopressin and is an antagonist of Vasopressin. *K. P. Williams et. al., PNAS, USA, 94, 11285-11290, (1997).*

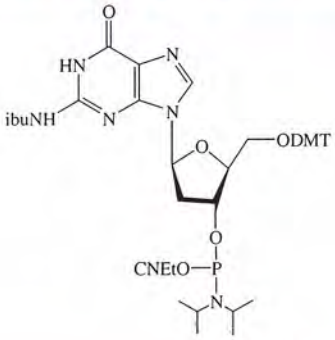
ANP-8031 5'-DMT- β-L-2'-deoxy Adenosine(n-bz) 3'- phosphoramidite



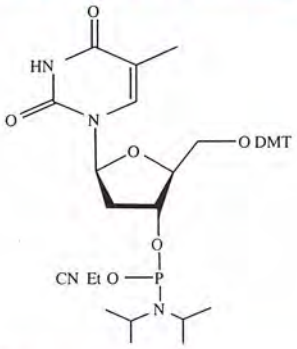
ANP-8032 5'-DMT- β-L-2'-deoxy Cytidine(n-bz) 3'-phosphoramidite



ANP-8033 5'-DMT β-L-2'-deoxy Guanosine(n-ibu) 3'-phosphoramidite



ANP-8034 5'-DMT β-L-2'-deoxy Thymidine 3'-phosphoramidite



For Corresponding CPG columns, see page 36

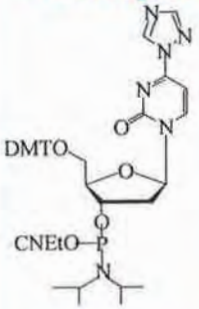
Catalog #	Name	Price 100mg	0.5gm	1.0gm
ANP-8031	5'-DMT-β–L-2'-deoxy Adenosine(bz) 3'-phosphoramidite F.W: 857.93	175.00	340.00	625.00
ANP-8032	5'-DMT-β–L-2'-deoxy Cytidine(bz) 3'-phosphoramidite F.W: 833.91	175.00	340.00	625.00
ANP-8033	5'-DMT-β–L-2'-deoxy Guanosine(ibu) 3'-phosphoramidite F.W: 839.92	195.00	360.00	660.00
ANP-8034	5'-DMT-β–L-2'-deoxy Thymidine 3'-phosphoramidite F.W: 744.81	185.00	350.00	550.00

MODIFIED DEOXY NUCLEOSIDE PHOSPHORAMIDTES (Cont.)

(For Crosslinking/ Therapeutic Studies)

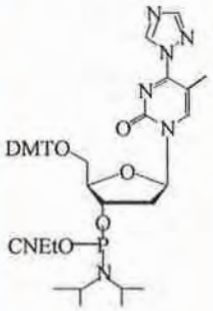
AVAILABLE IN MILLIGEN CYCLONE, BECKMAN 1000, PHARMACIA, ABI AND EXPEDITE CONFIGURATIONS

5'-DMT-O4-Triazolyl-2'-Deoxyuridine -3'-Phosphoramidite



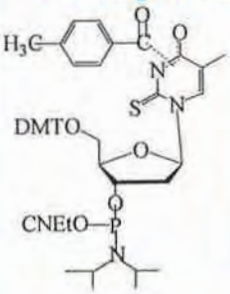
Catalog #: ANP-9211
F.W: 781.8
Prices $: 85.00/100µmole
210.00/250mg.
Purity: 98%+

5'-DMT-O4-Triazolyl-Thymidine -3'-Phosphoramidite



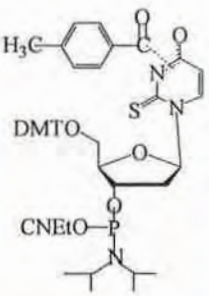
Catalog #: ANP-9212
F.W: 795.8
Prices $: 85.00/100µmole
210.00/250mg.
Purity: 98%+

5'-DMT-2-Thio-deoxyThymidine- 3'-Phosphoramidite



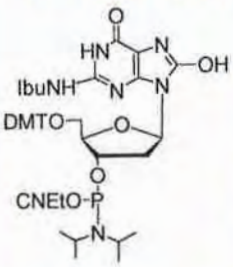
Catalog #: ANP-9213
F.W: 878.8
Prices $: 235.00/100µmole
535.00/250mg.
Purity: 98%+mole

5'-DMT-2-Thio-deoxyUridine -3'-Phosphoramidite



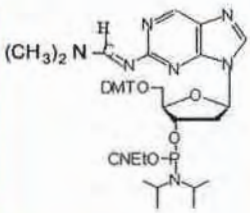
Catalog #: ANP-9214
F.W: 864.8
Prices $: 235.00/100µmole
535.00/250mg
Purity: 98%+

8-OXO-DEOXY GUANOSINE CED PHOSPHORAMIDITE



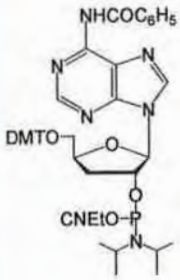
Catalog #: ANP-9311
F.W.: 855.9
Price: $285.00/100 µm
$680.00/250mg
Purity: 98%+

2-AMINO (N-DIMETHYLAMINOMETHYLIDINE AMINO) PURINE 2'-DEOXY PHOSPHORAMIDITE



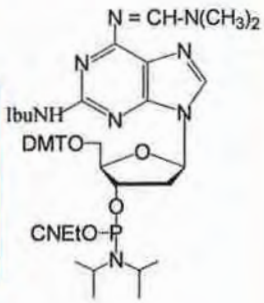
Catalog #: ANP-9314
F.W. 793.88
price: $110.00/100µm
Purity: 98%+

3'-DEOXYADENOSINE(N-BZ) (CORDYCEPIN) PHOSPHORAMIDITE



Catalog #: ANP-9312
F.W.: 857.915
Price: $360.00/100µm
Purity: 98%+

2-AMINO 2'-DEOXY ADENOSINE (2,6-DIAMINO PURINE) PHOSPHORAMIDITE



Catalog#: ANP-9318
F.W: 894.09
Price $:335.00/ 100 µmole
Purity: 98%+

For Corresponding CPG columns, see page 33-35

TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

MODIFIED DEOXY NUCLEOSIDE PREPACKED COLUMNS

Applied Biosystems, Expedite, & Pharmacia DNA & RNA Synthesizers
MODIFIED, MINOR BASE, Ligand and Chromophore Solid Support Columns

Size of CPG lcaa (long chain alkyl amino)
500 Ångstrom Pore Size
1000 Ångstrom Pore Size
Please inquire regarding other loadings and CPG sizes.

Scale of Synthesis
1.0 µmole Scale
0.2 µmole Scale

Catalog #	Product	Pack of 4 Columns	Price$
NSS-1376-5A1CL	500Å 2'-deoxy Inosine 1caa CPG	1.0µmole	48.00
NSS-1376-5C02CL	500Å 2'-deoxy Inosine 1caa CPG	0.2µmole	40.00
NSS-18531-5A1CL	500Å 2'-deoxy acetyl Cytidine 1caa CPG	1.0µmole	48.00
NSS-18531-5A02CL	500Å 2'-deoxy acetyl Cytidine 1caa CPG	0.2µmole	40.00
NSS-31595-5A1CL	500Å 2'-deoxy Uridine 1caa CPG	1.0µmole	60.00
NSS-31595-5A02CL	500Å 2'-deoxy Uridine lcaa CPG	0.2µmole	48.00
NSS-31591-10A1CL	1000Å 2'-deoxy Uridine 1caa CPG	1.0µmole	60.00
NSS-31591-10A02CL	1000Å 2'-deoxy Uridine lcaa CPG	0.2µmole	48.00
NSS-1378-5U1CL	500Å 5-Br-2'-deoxy Uridine 1caa CPG	1.0µmole	100.00
NSS-1378-5U02CL	500Å 5-Br-2'deoxy Uridine 1caa CPG	0.2µmole	72.00
NSS-1379-5C1CL	500Å 5-Br-2'-deoxy Cytidine 1caa CPG	1.0µmole	100.00
NSS-1379-5C02CL	500Å 5-Br-2'deoxy Cytidine 1caa CPG	0.2µmole	72.00
NSS-1353-5A1CL	500Å 5-Me 2'-deoxy Cytidine (N-bz) 3'-Succinyl lcaa CPG	1.0µmole	100.00
NSS-1353-5A02CL	500Å 5-Me 2'-deoxy Cytidine (N-bz) 3'-Succinyl lcaa CPG	0.2µmole	72.00
NSS-7363-5A1CL	500Å 5-Iodo 2'-deoxy Cytidine (N-Formamidine) 3'-Succinyl lcaa CPG	1.0µmole	120.00
NSS-7363-5A02CL	500Å 5-Iodo 2'-deoxy Cytidine (N-Formamidine) 3'-Succinyl lcaa CPG	0.2µmole	80.00
NSS-9750-5A1CL	500Å 3'-Amino Modified-C-3 lcaa CPG	1.0µmole	112.00
NSS-9750-5A02CL	500Å 3'-Amino Modified-C-3 lcaa CPG	0.2µmole	88.00
NSS-7364-5A1CL	500Å 5-Iodo 2'-deoxy Uridine 3'-Succinyl lcaa CPG	1.0µmole	120.00
NSS-7364-5A02CL	500Å 5-Iodo 2'-deoxy Uridine 3'-Succinyl lcaa CPG	0.2µmole	80.00
NSS-7365-5A1CL	500Å 5-Fluoro 2'-deoxy Uridine 1caa CPG	1.0µmole	120.00
NSS-7365-5A02CL	500Å 5-Fluoro 2'-deoxy Uridine 1caa CPG	0.2µmole	80.00
NSS-7366-5A1CL	500Å araAdenosine 1caa CPG	1.0µmole	112.00
NSS-7366-5A02CL	500Å araAdenosine 1caa CPG	0.2µmole	88.00
NSS-7367-5A1CL	500Å araCytidine 1caa CPG	1.0µmole	112.00
NSS-7367-5A02CL	500Å araCytidine 1caa CPG	0.2µmole	88.00
NSS-7368-5A1CL	500Å 2',3'-DideoxyAdenosine 1caa CPG	0.2µmole	100.00
NSS-7369-5A1CL	500Å 2',3'-DideoxyCytidine 1caa CPG	0.2µmole	100.00

For Corresponding Unpacked CPG Supports, Please See Page 99-100

MODIFIED DEOXY NUCLEOSIDE PREPACKED COLUMNS (Cont.)

Applied Biosystems, Expedite, & Pharmacia DNA & RNA Synthesizers
MODIFIED & MINOR BASE Solid Support Columns (Cont.)

Size of CPG lcaa (long chain alkyl amino)
500 Ångstrom Pore Size

Scale of Synthesis
1.0 µmole Scale
0.2 µmole Scale
Please inquire for other loadings and CPG sizes.

Catalog #	Product	Pack of 4 Columns	Prices
NSS-87705-1CL	500Å 7-Deaza deoxy Adenosine lcaa CPG	1.0µmole	145.00
NSS-87705-02CL	500Å 7-Deaza deoxy Adenosine lcaa CPG	0.2µmole	110.00
NSS-87505-1CL	500Å 7-Deaza deoxy Guanosine lcaa CPG	1.0µmole	145.00
NSS-87505-02CL	500Å 7-Deaza deoxy Guanosine lcaa CPG	0.2µmole	110.00
NSS-87506-1CL	500Å 7-Deaza deoxy Insoine lcaa CPG	1.0µmole	145.00
NSS-87506-02CL	500Å 7-Deaza deoxy Insoine lcaa CPG	0.2µmole	110.00
NSS-9999-5G1CL	500Å 8-Bromo-deoxy Guanosine(n-ibu) 1caa CPG	1.0µmole	120.00
NSS-9999-5G02CL	500Å 8-Bromo-deoxy Guanosine(n-ibu) 1caa CPG	0.2µmole	80.00
NSS-9991-5A1CL	500Å 8-Bromo-2'-deoxy Adenosine (N,N-dibutyl formamidine)1caa CPG	1.0µmole	125.00
NSS-9991-5A02CL	500Å 8-Bromo-2'-deoxy Adenosine (N,N-dibutyl formamidine) lcaa CPG	0.2µmole	90.00
NSS-9998-5T1CL	500Å N3-methyl-deoxy Thymidine 3'-Succinyl 1caa CPG	1.0µmole	125.00
NSS-9998-5T02CL	500Å N3-methyl-deoxy Thymidine 3'-Succinyl 1caa CPG	0.2µmole	90.00
NSS-9996-5C1CL	500Å N4-Ethyl-2'-deoxy Cytidine 1caa CPG	1.0µmole	110.00
NSS-9996-5C02CL	500Å N4-Ethyl-2'-deoxy Cytidine 1caa CPG	0.2µmole	60.00
NSS-0001-5TT1CL	500Å 4-Thio-2'-deoxy Thymidine lcaa CPG1	1.0µmole	120.00
NSS-0001-5TT02CL	500Å 4-Thio-2'-deoxy Thymidine lcaa CPG	0.2µmole	80.00
NSS-1380-5A1CL	500Å 4-Thio-2'deoxy Uridine 1caa CPG	1.0µmole	120.00
NSS-1380-5A02CL	500Å 4-Thio 2'deoxy Uridine lcaa CPG	0.2µmole	80.00
NSS-9409-5T1CL	500Å 2-Thio 2'-Deoxy Thymidine lcaa CPG	1.0µmole	120.00
NSS-9409-5T02CL	500Å 2-Thio 2'-Deoxy Thymidine lcaa CPG	0.2µmole	80.00
NSS-9410-5U1CL	500Å 2-Thio-2'-Deoxy Uridine lcaa CPG	1.0µmole	120.00
NSS-9410-5T02CL	500Å 2-Thio-2'-Deoxy Uridine lcaa CPG	0.2µmole	80.00
NSS-9407-5U1CL	500Å 5'-DMT-O4-Triazolyl-2'-Deoxy Uridine lcaa CPG	1.0µmole	120.00
NSS-9407-5U02CL	500Å 5'-DMT-O4-Triazolyl-2'-Deoxy Uridine lcaa CPG	0.2µmole	80.00
NSS-9408-5T1CL	500Å 5'-DMT-O4-Triazolyl Thymidine lcaa CPG	1.0µmole	120.00
NSS-9408-5T02CL	500Å 5'-DMT-O4-Triazolyl Thymidine lcaa CPG	0.2µmole	80.00

For Corresponding Unpacked CPG Supports, Please See Page 99-100

MODIFIED DEOXY NUCLEOSIDE PREPACKED COLUMNS (Cont.)

Applied Biosystems, Expedite, & Pharmacia DNA & RNA Synthesizers
MODIFIED & MINOR BASE Solid Support Columns (Cont.)

Size of CPG lcaa (long chain alkyl amino)
500 Ångstrom Pore Size

Scale of Synthesis
1.0 µmole Scale
0.2 µmole Scale
Please inquire for other loadings and CPG sizes.

Catalog #	Product	Pack of 4 Columns	Prices
NSS-9992-5G1CL	500Å 2-Fluoro- 2'-deoxy inosine (O6-ter-butyl silyl ethoxy) lcaa CPG	1.0µmole	120.00
NSS-9992-5G2CL	500Å 2-Fluoro- 2'-deoxy inosine (O6-ter-butyl silyl ethoxy) lcaa CPG	0.2µmole	80.00
NSS-9400-5G1CL	500Å 8-Oxo-2'-deoxy Guanosine lcaa CPG	1.0µmole	110.00
NSS-9400-5G02CL	500Å 8-Oxo-2'-deoxy Guanosine lcaa CPG	0.2µmole	80.00
NSS-9401-5P1CL	500Å 2-Amino Purine(N-dimethylaminomethylidine) 2'-deoxy lcaa CPG	1.0µmole	120.00
NSS-9401-5P02CL	500Å 2-Amino Purine(N-dimethylaminomethylidine) 2'-deoxy lcaa CPG	0.2µmole	80.00
NSS-9402-5A01CL	500Å 3'-DeoxyAdenosine (N-bz) (Cordycepin) lcaa CPG	1.0µmole	120.00
NSS-9402-5A02CL	500Å 3'-DeoxyAdenosine (N-bz) (Cordycepin) lcaa CPG	0.2µmole	80.00
NSS-9403-5N1CL	500Å 2'-Deoxy Nebularine lcaa CPG (Purine-2'-Deoxy-Riboside)	1.0µmole	140.00
NSS-9403-5N02CL	500Å 2'-Deoxy Nebularine lcaa CPG (Purine-2'-Deoxy-Riboside)	0.2µmole	120.00
NSS-9404-5A1CL	500Å 2-Amino 2'-deoxy Adenosine (2,6 diaminopurine) lcaa CPG	1.0µmole	120.00
NSS-9404-5A02CL	500Å 2-Amino 2'-deoxy Adenosine (2,6 diaminopurine) lcaa CPG	0.2µmole	90.00
NSS-9405-5U1CL	500Å 5'-Amino-2'-deoxyUridine lcaa CPG	1.0µmole	120.00
NSS-9405-5U02CL	500Å 5'-Amino-2'-deoxyUridine lcaa CPG	0.2µmole	80.00
NSS-9406-5T1CL	500Å 5'-amino-2'-deoxy Thymidine lcaa CPG	1.0µmole	120.00
NSS-9406-5A02CL	500Å 5'-Amino-2'-deoxy Thymidine lcaa CPG	0.2µmole	80.00
NSS-9994-5I1CL	500Å 5'-DMT-2'-deoxy-Isoguanosine(ibu) 1caa CPG	1.0µmole	120.00
NSS-9994-5I02CL	500Å 5'-DMT-2'-deoxy-Isoguanosine(ibu) 1caa CPG	0.2µmole	80.00
NSS-67670-A1CL	N6-Dibenzoyl-deoxy Adenosine CED Phosphoramidite	1.0µmole	45.00
NSS-67670-A02CL	N6-Dibenzoyl-deoxy Adenosine CED Phosphoramidite	0.2µmole	36.00
NSS-67680-G01CL	N2-(Dimethylaminomethylidene) O6-(diphenylcarbanoyl)-deoxyguanosine lcaa CPG	1.0µmole	45.00
NSS-67680-G02CL	N2-(Dimethylaminomethylidene) O6-(diphenylcarbanoyl)-deoxyguanosine lcaa CPG	0.2µmole	36.00

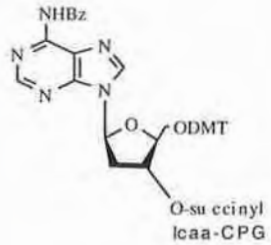
For Corresponding Unpacked CPG Supports, Please See Page 108-114

MODIFIED DEOXY NUCLEOSIDE PHOSPHORAMIDTES (Cont.)

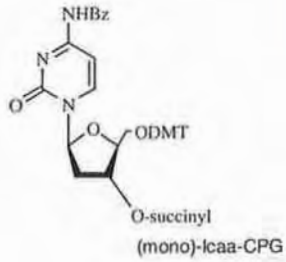
5'-DMT Modified Deoxynucleoside, CPG Columns
(For Crosslinking/ Therapeutic Studies)
AVAILABLE IN MILLIGEN CYCLONE, BECKMAN 1000, PHARMACIA, ABI AND EXPEDITE CONFIGURATIONS

Mirror Image of Natural DNA
*** Offer A Wide Variety of Applications ***
β-L- Deoxy Nucleoside Phosphoramidites
For The Synthesis of L-DNA

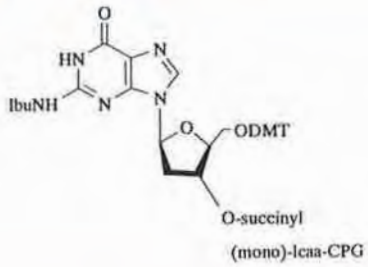
NSS-30511-β-L-2'-deoxy-Adenosine 3' Succinyl-lcaa-CPG



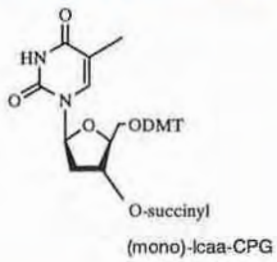
NSS-30512-β-L-2'-deoxy-Cytidine 3' Succinyl-lcaa-CPG



NSS-30513-β-L-2'-deoxy-Guanosine(n-ibu) 3' Succinyl-lcaa-CPG



NSS-30514-β-L-Thymidine- 3' Succinyl-lcaa-CPG



Catalog #	Name	Pack of 4 columns	Price
NSS-30511	5'-DMT-β–L-2'-deoxy Adenosine(bz)	1.0 µmole	140.00
	3'-succinyl-lcaa-CPG	0.2 µmole	120.00
NSS-30512	5'-DMT-β–L-2'-deoxy Cytidine(bz)	1.0 µmole	140.00
	3'-succinyl-lcaa-CPG	0.2 µmole	120.00
NSS-30513	5'-DMT-β–L-2'-deoxy Guanosine(ibu)	1.0 µmole	140.00
	3'-succinyl- lcaa-CPG	0.2 µmole	120.00
NSS-30514	5'-DMT-β–L-2'-deoxy Thymidine	1.0 µmole	140.00
	3'-succinyl-lcaa-CPG	0.2 µmole	120.00

PHOSPHORAMIDITES FOR INTRODUCTION OF CHROMOPHORES AND LIGANDS

ChemGenes offers two reagents for 5'-phosphorylation of an oligonucleotide. The bis-cyanoethyl-N,N-diisopropyl phosphoramidite (catalog #: CLP-1454) quantitatively phosphorylates the 5'-hydroxyl group via phosphoramidite methodology on an automatic DNA/RNA synthesizer. An alternative is the 5'-Phosphate-ON Reagent (catalog #: CLP-1544) which generates DMT orange color after introduction of phophate at the last nucleoside in the oligonucleotide chain. The bis-cyanoethyl phosphoramidite reagent has the disadvantage of not generating any color, however due to its lower price it is the reagent of choice for the production of phophorylated DNA or RNA oligomers in large quantities.

5'-PHOSPHATE INTRODUCING REAGENTS

Bis-cyanoethyl-N, N-diisopropyl phosphoramidite

$[\,(CH_3)_2CH\,]_2\text{-N-P-}(OCH_2CH_2CN)_2$

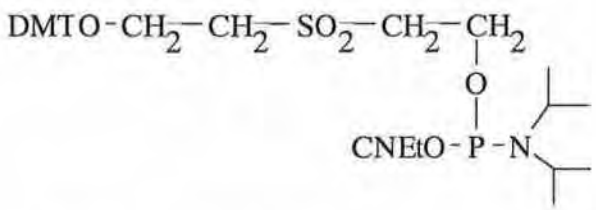
d: 1.023

Description:

This product is used for the introduction of 5'- terminal phosphate on a synthetic DNA/RNA by the phosphoramidite chemistry on automatic DNA Synthesizer to produce probes and primers carrying 5'-phosphate. This is an ideal reagent for the production of phosphorylated DNA or RNA oligomers in large quantity as compared to enzymatic phosphorylation at this position, which has limitation with respect to the quantities. This becomes a significant factor when large quantities of phosphorylated oligomers are required for recombinant DNA applications.

Catalog # CLP-1454	Price: $40.00/100µm
F.W.: 271.295	$50.00/250mg
	$65.00/500mg
	$110.00/gm

5'-Phosphate-ON Reagent (Generating DMT-Orange Color)



Description:

This product is alternative to Bis-cyanoethyl phosphorylating reagent, outlined above.
This reagent generates DMT color after introduction of phosphate at the last nucleoside in the oligonucleotide chain.

Catalog #: CLP-1544	Price: $45.00/100µm
F.W.: 656.755	$150.00/250mg

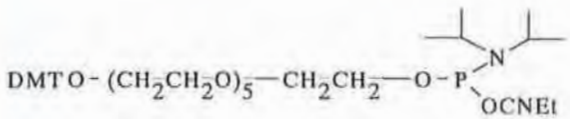
For Corresponding CPG columns, see page 48

TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

PHOSPHORAMIDITES FOR INTRODUCTION OF CHROMOPHORES AND LIGANDS

AVAILABLE IN MILLIGEN CYCLONE, BECKMAN 1000, PHARMACIA AND EXPEDITE CONFIGURATION

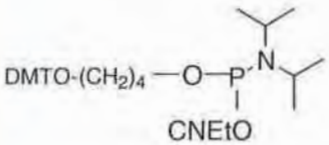
DMT-hexa-ethyloxy-glycol-CED phosphoramidite (C-18 Spacer)



Catalog #: CLP-9765
F.W.: 784.909
Prices$: 80.00/250mg
150.00/500mg

*One of the many application of **DMT-hexa-ethylo-glycol-CED phosphoramidite (catalog # CLP-9765)** is its attachment to the end of an oligonucleotide to obtain better lipophiliicity. (A. Justice, J.P. Furste, E. Nordhoff, F. Hillenkamp, D. Cech, V. E. Erdmann, Nucl. Acids Res., 22, 4810 1994). Recently, this linker has also been used a a non-nuclephilic replacement of an oligonucleotide core with little or no loss of biological activity. (J. B. Thomson, T. Tuschl, F. Eckstein, Nucl. Acids Res., 21, 5600, 1993). The hexathylene glycol chain has also been incorporated into oligonucleotides from a hairpin loop structure. (M. Durand, K. Chevrie, M. Chasingol, N.T. Thuong, J.C. Mauriz, Nucl. Acids Res., 18, 6353, 1990).*

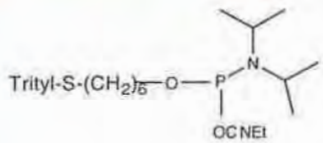
DMT-butanol-CED phosphoramidite



Catalog# CLP-9775
F.W.: 592.689
Prices$: 80.00/250mg
150.00/500mg

***The DMT-butaonl-CED-phosphoramidite (catalog # CLP-9775)** introduces the butanediol moiety (single or mutliple units) into an oligonnucleotide. The butanediol spacer has been incorporated in oligonucleotides consisting of 2', 5'-A and DNA segments to produce oligonucleotide chimeras that catalyze selectie cleavage of RNA in human cells. (R. K. Maitra, G. Li, W. Xiao, B. Dong, P.F. Torrence, R. H. Silverman, J. Biol. Chem.270, 15071, 1995; K. Lesiak, S. Khamnei, and P. F. Torrence, Bioconjugate Chemistry, 4, 467, 1993). The corresponding CPG is also available to incorporate this unit at the 3'-end of an oigonucleotide.*

5'-Thiol Modifier C-6



Catalog #: CLP-5888
F.W.: 576.780
Prices$: 50.00/100µm
100.00/100mg
180.00/250mg

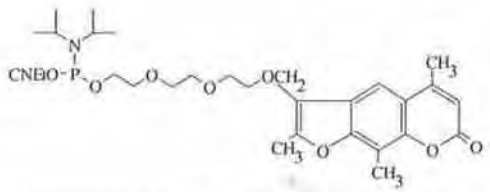
***5'-Thiol Modifier-C-6 (catalog # CLP-5888).** Several methods are available to introduce a thiol group at the 5'-end of an oligonucleotide. B. A. Connolly, P. Rider, Nucl. Acids Res., 12, 4485, 1985; N. D. Sinha, R. M. Cook, Nucl. Acids Res., 16, 2659, 1988; S. Sharma, K. C. Gupta, Nucl. Acids Res., 14, 4404, 1989; A. Kumar, S. Advani, H. Dawar, G. P. Talwar, Nucl. Acids Res., 19, 4561, 1991).*

For Corresponding CPG columns, see page 48

PHOSPHORAMIDITES FOR INTRODUCTION OF CHROMOPHORES AND LIGANDS (Cont.)

PSORALEN PHOSPHORAMIDITE

Catalog #: CLP-6644
F.W.: 590.65
Prices$: 95.00/50µm
155.00/100µm
410.00/250mg



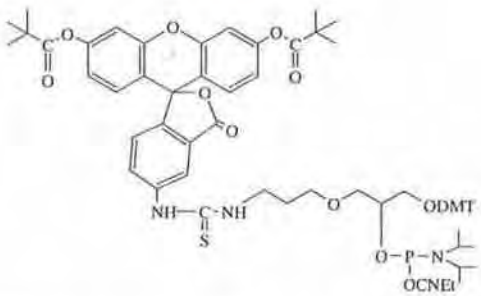
For Corresponding CPG columns, see page 56

Psoralens are a class of naturally occuring compounds which have been used for centuries to treat skin and tumor diseases. Psoralen binds to DNA nopn-specifically. Psoralen modified oligonucleotides are expected to be superior than Psoralen itself as they will hydrolize to target oligonucleotides having complementary sequences. Psoralen derived oligonucleotides have been synthesized and found to recognize complementary target DNA sequences. The double stranded DNA fragments were found to be covalently cross-linked upn irradiation at 35 nm. (U. Pieles, U. English, Nucl. Acids Res., 17, 285, 1989; U. Pieles, B.S. Sproat, P. Neuner, F. Cramer, Nucl. Acids. Res 17, 8967 1989). Psoralen attached oligonucleotides have also been hybridized with complementary target sites on RNA followed by cross-linking after photoreaction. (J. Teare, P. Wollenzien, Nucl. Acids Res.17, 3559 1989). Photoinduced cross-linking has also been achieved on a double-stranded DNA by forming a triple helix. (M. Takasugi, A. Guendouz M. Chassignol, J.L. Decont, J. Lhomme, N.T. Thuoing, C. Helene, Proc Natl. Acad. Sci USA, 88, 5602, 1991). Furthermore, Psoralen derived oligonucleotide methyl-phosphates have been show to cross-link in a sequence specific manner to single-depenent antiviral activity in cultured cells infected with herpes simplex vrus type-1 (HSV-1). (M. Kulka, C. Smith, L. Aurelian, R. Fisheluich, K. Meade, P. Miller, P.O.P. Ts'O, Proc Natl Acad. Sci, USA, 86, 6868 (1989).

ChemGenes' Psoralen Phosphoramidite incorporates a triethyl glycol chain (11 atom spacer) which creates a better hydrophilic environment around the Psoralen molecule making it highly suitable for a cellular environment.

FLUORESCEIN PHOSPHORAMIDITE

Catalog #: CLP-4282
F.W.: 1177.52
Prices$:155.00/50µm
275.00/100µm
655.00/250mg



For Corresponding CPG columns, see page 48-49

PHOSPHORAMIDITES FOR INTRODUCTION OF CHROMOPHORES AND LIGANDS (Cont.)

(Biotinylation in the sequence and at the 5' Terminus)

For use in automated synthesis and associated rapid purification techniques. Applications to which our biotin phosphoramidites have been applied include:

(1) Diagnostic probe development including occasion where multiple biotin molecules may be introduced into a probe to enhance sensitivity of ultimate detection.

(2) Introduction of biotin in the sequence and at the 5'-terminus of a primer prior to PCR amplification and trapping of the derived biotinylated DNA using streptavidin magnetic beads.

(3) Introduction of biotin at the 3'-terminus of a probe capable of blocking chain extension in a PCR experiment. This is acheived through Biotin-CPG (see page 49).

Protection of the N-1 position of biotin with a lipophilic group induces higher solubility. It should be noted that we have found these product to be highly susceptible to deactivation by moisture in the diluent acetonitrile.

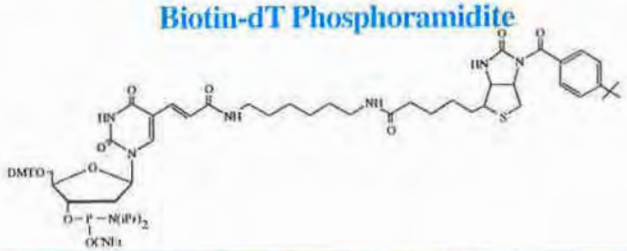
BIOTIN PHOSPHORAMIDITES

"Biotin BB" contains a tert-butyl benzoyl group at one of the secondary amino groups of Biotin. This novel feature is what makes ChemGenes' "Biotin BB" (catalog #CLP-1517) superior to other commercially available biotin products, such as "Biotin dT" and "Biotin TEG". Another biotin product, "Biotin Phosphoramidite" can potentially cause side reactions during oligo synthesis due to the presence of the free urea moiety of the biotin. As repeated synthesis cycles are performed, this side reaction will occur when 3'-end attachment is desired using a solid support. The "Biotin Phosphoramidite" has an additional problem of low solubility. "MMT-Biotin Phosphoramidite", another biotin analog has a MMT-group on the urea portion of the biotin. The MMT-group, however, is potentially susceptible to hydrolysis during oligo synthesis. Furthermore, the MMT-group does not deactivate the urea moiety of biotin towards side reactions during oligo synthesis.

3'-End Labeling with "Biotin BB" CPG Solid Supports

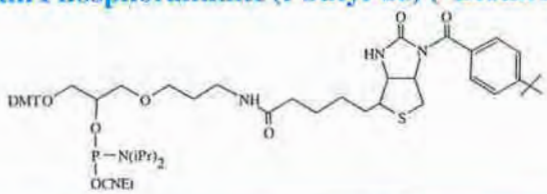
"Biotin BB" CPG is used for synthesis of 3'-Biotin oligomers. The tert-butyl-benzoyl protection prevents biotin chromophore modifications. Also available from ChemGenes are the corresponding prepacked "Biotin BB" CPG columns.

Biotin-dT Phosphoramidite



Catalog #	Product	Qty.	Price$
CLP-1502	Biotin-dT	25µm (32.3mg)	75.00
	Phosphoramidite	50µm (64.3mg)	150.00
	F.W.: 1285.55	100µm (128.6mg)	290.00
		194.4µm (250mg)	580.00

Biotin Phosphoramidite (t-butyl-bz) ("Biotin BB")



Catalog #	Product	Qty.	Price$
CLP-1517	Biotin Phosphoramidite	25µm (26mg)	55.00
	(t-butyl-bz)	50µm (50.4mg)	104.00
	F.W.: 1032.25	100µm (100.7mg)	185.00
		248.44µm (250mg)	340.00

For Corresponding CPG columns, see page 49

PHOSPHORAMIDITES FOR INTRODUCTION OF CHROMOPHORES AND LIGANDS (Cont.)

5'-TERMINAL AMINO INTRODUCING REAGENTS

These products are suitable for the direct introduction of 5'-terminal primary aliphatic amino function on a synthetic oligonucleotide, via a solid phase gene splicing machine.

The standard DNA synthesis protocol and the coupling protocol is followed to quantitatively generate the primary aliphatic AMINO group. This primary aliphatic AMINO group is useful for the subsequent introduction of various chromophores viz. ;

(a) BIOTIN, (b) Fluorescent molecules, (c) Alkaline phosphatase enzyme, etc.
For various DNA BASED DIAGNOSTICS applications. PACKED UNDER ARGON.

These products are suitable for direct introduction of a primary aliphatic amino function into a synthesis oligonucleotide. The primary aliphatic amino group is the chmeical modification of choice since it reacts very smoothly with a wide variety of labeling reagents. Thus covalently linked chromophores can be readily obtained in a synthetic DNA or RNA of interest. (P. S. Nelson, R.S. Gold, R. Leon, Nucl. Acids Res, 17, 7179 1989).

The 5'-Terminal Amino Introducing Reagent with C-4 Spacer ***(TFA-amino C-4, Catalog # CLP-1453)*** *allows only for a single primary amino fucntion per molecule. The amino group is itroduced while protected as trifluoroacetamido which is cleaved during ammonia deprotection of the oligo. The amino group is separated from the 5'-phosphateof an oligonucleotide by four carbon atoms.*

5'-Terminal Amino Introducing Reagent With C-4 Spacer
(TFA-amino-C-4 phosphoramidte)

$CF_3CONH(CH_2)_4$-O-P(OCH_2CH_2CN)-N-[$CH(CH_3)_2]_2$

4-Trifluoroacetamidobutyl-(2-cyanoethyl)-(N,N-diisopropyl) phosphoramidite

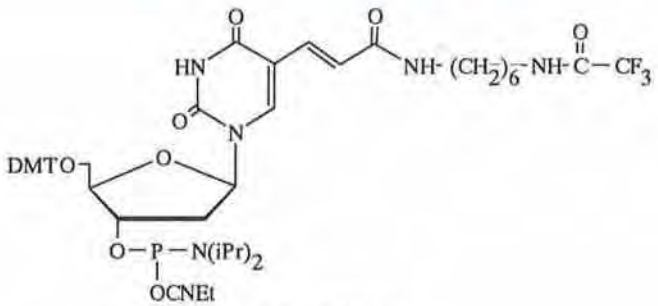
F.W.: 385.367
Catalog #: CLP-1453 Price$: 48.00/100µm
65.00/250mg
170.00/1gm

PHOSPHORAMIDITES FOR INTRODUCTION OF CHROMOPHORES AND LIGANDS (Cont.)

WITHIN THE SEQUENCE AND 5'-TERMINAL AMINO INTRODUCTION

The Amino Modifier dT (C-6), (catalog # CLP-15011) *incorporates an amino fucntion at the C-5 of Thymidine (or better 2'-deoxy Uridine) which is protected with a trifluoracetamido group. The protecting group is cleaved during amonia hydrolysis liberating the terminal amino group. The advantage of this molecule is that it allows for Thymidine hybridization with a complementary strand without intereference of the C-6 arm which sits in the minor groove of the double strand.*

Amino Modifier dT (C-6)

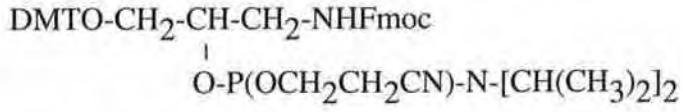


F.W.: 995.023

Catalog #	Product	Qty.	Price$
CLP-15011	Amino Modifier dT (C-6)	100µm	175.00
		250mg	352.00
		500mg	675.00

Amino Introducing Reagent with C-3 Spacer (Fmoc-amino-DMT C-3 phosphoramidite)

The amino introducing reagent with C-6 Spacer ***(Fmoc-amino-DMT C-3 phosphoramidite, calalog #CLP-16611)*** *has a DMT group in additon to the protected primary amino group. This DMT-group facilitates monitoring the efficiency of the phospohoramidite coupling and also allows multiple additions of the amino function.*



(1-Dimethoxytrityloxy-3-fluorenylmethoxycarbonylamino-propan-2-O)-
(2-cyanoethyl)-(N,N-diisopropyl)-phosphoramidite

F.W.: 815.95

Catalog #	Product	Qty.	Price$
CLP-16611	Amino Introducing Reagent with C-3 Spacer	100µm	48.00
		250mg	65.00
		500mg	100.00

FOR THE CORRESPONDING SOLID SUPPORTS, PLEASE SEE PAGE 113

PHOSPHORAMIDITES FOR INTRODUCTION OF CHROMOPHORES AND LIGANDS (Cont.)

5'-TERMINAL AMINO INTRODUCING REAGENTS

5'-Terminal Amino Introducing Reagent With C-6 Spacer
(TFA-amino-C-6 phosphoramidte)

$CF_3CONH(CH_2)_6$-O-P(OCH_2CH_2CN)-N-[$CH(CH_3)_2$]$_2$

6-Trifluoroacetamidohexyl-(2-cyanoethyl)-(N,N-diisopropyl) phosphoramidite

★ *Similar to above reagent, except it allows to introduce* ***C-6 spacer*** *at the*★
★ *5'-hydroxyl and the terminally introduced primary amino group.*★

F.W.: 413.419

Catalog #: CLP-1553 Price$: 50.00/100µm
75.00/250mg
185.00/1gm

The 5'-Terminal Amino Introducting Reagent with C-6 Spacer ***((TFA amino-C-6 phosphoramidite, catalog # CLP-1553)*** *is similarily introduced as the trifluoracetamido but allows for the introduction of a C-6 spacer between the 5'-hydroxyl and the terminally introduced primary amino group.*

5'-Terminal Amino Introducing Reagent With C-6 spacer
(MMT-amino-C-6 phosphoramidite)

MMT-NH-$(CH_2)_6$-O-P(OCH_2CH_2CN)-N-[$CH(CH_3)_2$]$_2$

6-(4-Monomethoxytritylamino)-hexyl-(2-cyanoethyl)-(N,N-diisopropyl) phosphoramidite

F.W.: 589.733

Catalog #: CLP-1563 Price$: 60.00/100µm
135.00/250mg

5'-Terminal Amino Introducing Reagent With C-12 spacer
(MMT-amino-C-12 phosphoramidite)

MMT-NH-$(CH_2)_{12}$-O-P(OCH_2CH_2CN)-N-[$CH(CH_3)_2$]$_2$

12-(4-Monomethoxytritylamino)-dodecyl-(2-cyanoethyl)-(N,N-diisopropyl) phosphoramidite

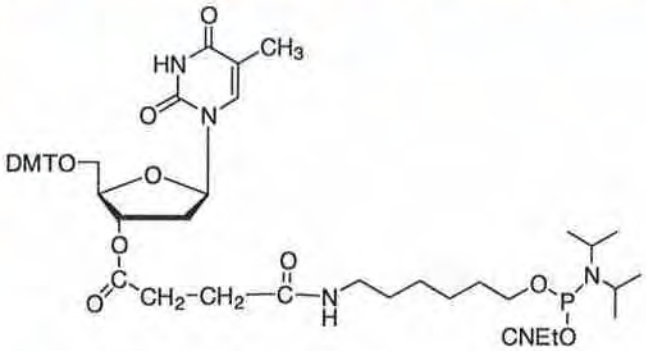
F.W.: 673.893

Catalog #: CLP-1585 Price$: 90.00/100µm
275.00/250mg

The 5'-Terminoal Introducing Reagent with C-6 Spacer ***MMT-amino-C-6-phosphoramidite, calatog # CLP-1563)*** *and the 5'-Terminal Amino Introducing Reagent with C-12 Spacer* ***(MMT-amino-C-6 phosphoramidite, catalog CLP-1585)*** *are used to introduce a primary amino group at the 5'-terminal of an oligonucleotide. The MMT on the amino function is cleave with 3% trichloracetic acid (TCA) similar to DMT removal in oligonucleotide synthesis, however the MMT-group removal is significantly slower (12 minutes contact with TCA). A useful utilization of MMT protected C-6 and C-12 phosphoramidites involes the selective cleavage of the MMT -group fro the synthesized oligonucleotide to obtain the free terminal amino function whle the oligo is still bound to the solid support. Various chomophores can be coupled to the terminal amino group of the support bound oligonulceotide. The excess reagent (chromophores) can easlily be washed off thus leaving almost pure chomophore-oligonucleotide conjugates.*

PHOSPHORAMIDITES FOR INTRODUCTION OF CHROMOPHORES AND LIGANDS (Cont.)

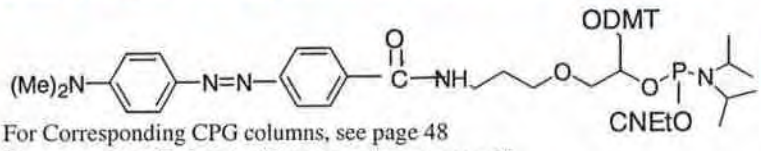
Terminal Carboxyl Group Introducing Reagent (5'-DMT-Thymidine-3'-succinyl hexamide phosphoramidite)



Application: to introduce a 5'-carboxyl terminal in an oligonucleotide with a ten atom spacer between carboxy group and 5'phosphate group.

Catalog #: CLP-2244
F.W: 944.06
Prices $: 120.00/100 µmole
350.00/250 mg
Purity: 98%+

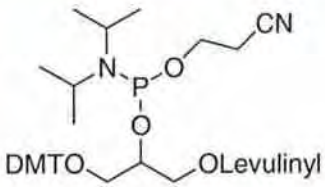
Dabcyl Spacer Phosphoramidite (Molecular Beacon)



For Corresponding CPG columns, see page 48
Please see the UV Spectra Characteristics on page 47

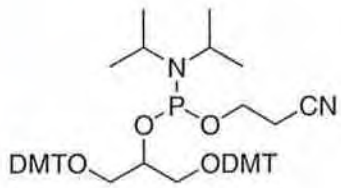
Catalog#: CLP-1522
F.W: 902.8
Prices $: 120.00/100 µmole
350.00/250 mg
Purity: 98%+

Asymmetrical branching phosphoramidite (mono-DMT-Glycerol phosphoramidite)



Catalog #: CLP-71693
F.W: 692.79
Prices $: 90.00/100mg
198.00/250mg
Purity: 98%+

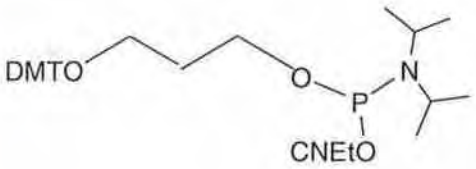
Symmetrical branching phosphoramidite (di-DMT-Glycerol phosphoramidite)



Catalog #: CLP-5215
F.W: 897.04
Prices $: 90.00/100mg
198.00/250mg
Purity: 98%+

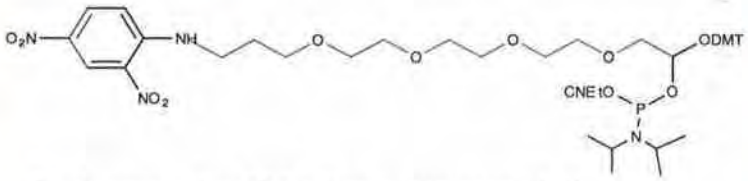
PHOSPHORAMIDITES FOR INTRODUCTION OF CHROMOPHORES AND LIGANDS (Cont.)

C-3 Spacer Phosphoramidite



Catalog #: CLP-9908
F.W: 578.68
Prices $: 60.00/100 µmole
145.00/250 mg
Purity: 98%+

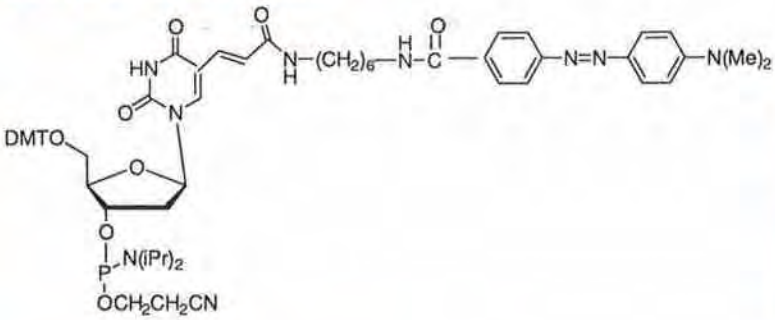
DNP-TEG-Phosphoramidite



For Corresponding CPG columns, see page 48-49.

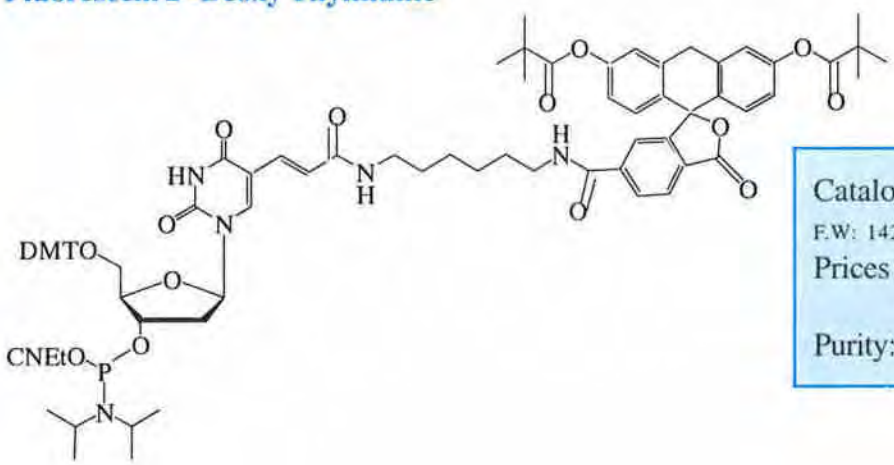
Catalog#: CLP-9907
F.W: 934.86
Prices $: 155.00/100 µmole
435.00/250 mg
Purity: 98%+

Dabcyl Deoxy Thymidine



Catalog #: CLP-9906
F.W: 1149.30
Prices $:285.00 / 100 µmole
425.00/ 250 mg
Purity: 98%+

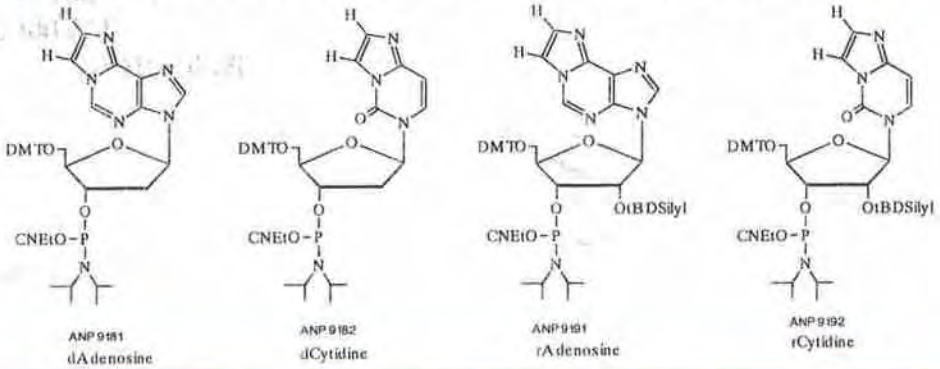
Fluorescein 2'-Deoxy Thymidine



Catalog #: CLP-9905
F.W: 1424.70
Prices $:335.00/ 100 µmole
610.00/ 250 mg.
Purity: 98%+

FLUORESCENT DEOXY AND RIBO, ADENOSINE & CYTIDINE PHOSPHORAMIDITES*

★ High Fluorescent Intensity★
★ Nucleic Acid Structure Function Determination★
★ For Selective Introduction in Synthetic DNA and RNA★
★ For Various Applications such as Extremely Low Detection Probes★
★ Synthetic Primers with Fluorescent Etheno A and C undergo PCR ® Amplification★ **



ANP 9181 dAdenosine | ANP 9182 dCytidine | ANP 9191 rAdenosine | ANP 9192 rCytidine

Catalog #	Product	Qty.	Price$
ANP-9181	Etheno-deoxy Adenosine, cyanoethyl phosphoramidite F.W.: 777.833	100µm 250mg	95.00 225.00
ANP-9182	Etheno-deoxy Cytidine, cyanoethyl phosphoramidite F.W.: 753.804	100µm 250mg	95.00 225.00
ANP-9191	Etheno-2'-tBDSilyl-ribo Adenosine, cyanoethyl phosphoramidite F.W.: 908.098	100µm 250mg	190.00 485.00
ANP-9192	Etheno-2'-tBDSilyl-ribo Cytidine, cyanoethyl phosphoramidite F.W.: 884.069	100µm 250mg	185.00 465.00

**PCR® is a trade name of Hoffmann La Roche, Cetus Corporation.

PREPACKED COLUMNS

Catalog #	Name	Price ($) Pack of 4 Columns 1 µmol	0.2µmol
NSS-00017(C)/8(A) -05A(C)	Etheno-2'-deoxy A, C U, lcaa CPG (500Å)	95.00	80.00
NSS-00014(C)/5(A) -05A(C)	Etheno-2'-tBDSilyl ribo A lcaa CPG (500Å)	95.00	80.00

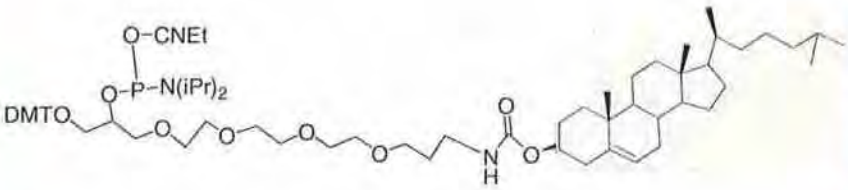
Please see page 47 for the emission characteristic graphs.

FOR THE CORRESPONDING SOLID SUPPORTS, SEE PAGE 101

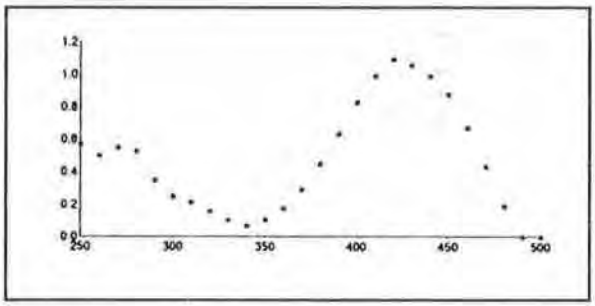
TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

PHOSPHORAMIDITES FOR INTRODUCTION OF CHROMOPHORES AND LIGANDS (Cont.)

Cholesterol (TEG) Phosphoramidite



Catalog #: CLP-2703
F.W:1196.60
Prices $: 195.00/ 100µmole
445.00/250 mg.
Purity: 98%+



UV Absorption Spectral Characteristics of the DABCYL Chromophore
Optical Density Ratios:
250/260=1.136 & 260/280=0.947
Σmax (250 nm.): 16,194 & at (420 nm.) :31,247

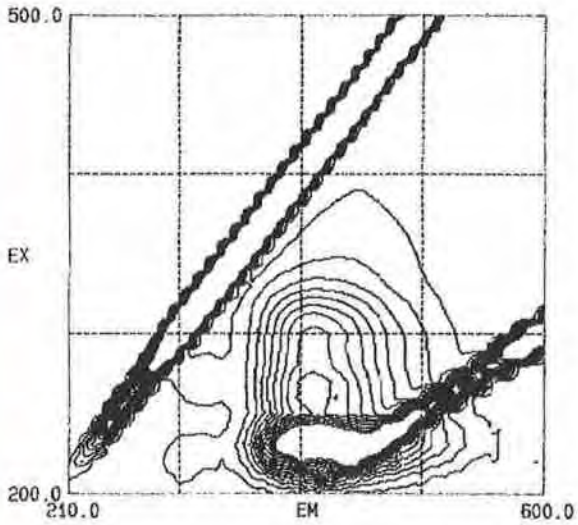


Fig. : DMT-etheno ribo Adenosine three dimensional contour plot of strong emission at 445 nm with excitation at 350 nm.

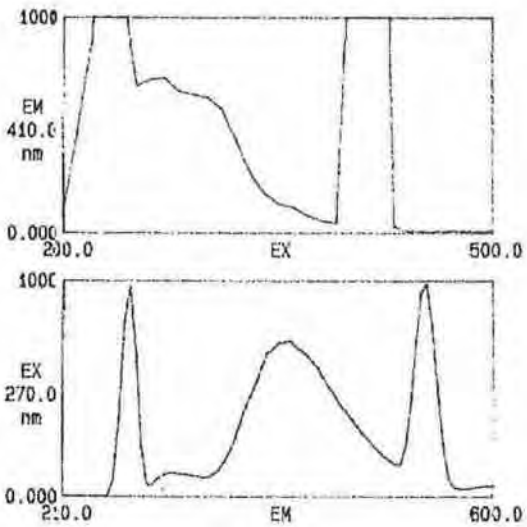


Fig. : A synthetic DNA primer carrying etheno-deoxy-Adenosine units; upper graph showing strong emission at 410 nm, lower graph showing excitation of the same primer at 270 nm.

TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

SECTION 11 : CHROMOPHORES AND LIGAND COLUMNS

PREPACKED COLUMNS FOR INTRODUCTION OF CHROMOPHORES AND LIGANDS AT THE 3'-END OF OLIGOMERS

Applied Biosystems, Expedite, & Pharmacia DNA & RNA Synthesizers

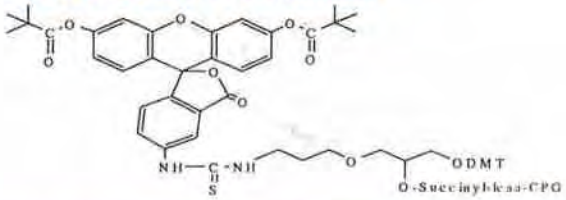
Size of CPG lcaa (long chain alkyl amino)

500 Ångstrom Pore Size
1000 Ångstrom Pore Size

Scale of Synthesis

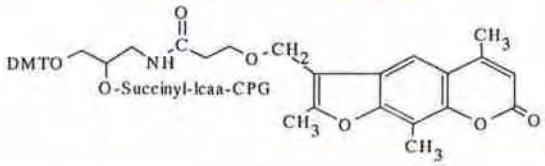
1.0 µmole Scale
0.2 µmole Scale
Please inquire for other loadings and CPG sizes.

Fluorescein CPG Columns



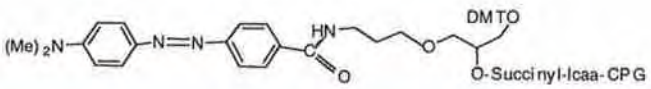
Catalog #	Product	Pack of 4 Columns	Price$
NSS-97505-A1CL	500Å Fluorescein lcaa CPG	1.0µmole	145.00
NSS-97505-A02CL	500Å Fluorescein lcaa CPG	0.2µmole	110.00

Psoralen CPG Columns



Catalog #	Product	Pack of 4 Columns	Price$
NSS-93705-A1CL	500Å Psoralen lcaa CPG	1.0µmole	145.00
NSS-93705-A02CL	500Å Psoralen lcaa CPG	0.2µmole	110.00

Dabcyl (Molecular Beacon) CPG Columns



Catalog #	Product	Pack of 4 Columns	Prices$
NSS-82004	500Å Molecular Beacon CPG	1.0µmole	145.00
NSS-82004	500Å Molecular Beacon CPG	0.2µmole	110.00

3'-Thiol Modifier CPG

Catalog #	Product	Pack of 4 Columns	Price$
NSS-9812-A1CL	500Å 3' Thiol Modifier lcaa CPG	1.0µmole	180.00
NSS-9812-A02CL	500Å 3'-Thiol Modifier lcaa CPG0.	2µmole	100.00
NSS-9812-A1CL	1000Å 3'-Thilo Modifier lcaa CPG	1.0µmole	200.00
NSS-9812-A02CL	1000Å 3'-thiol Modifier lcaa CPG	0.2µmole	115.00

For Corresponding Unpacked CPG Supports, Please See Page 112

PREPACKED COLUMNS FOR INTRODUCTION OF CHROMOPHORES AND LIGANDS AT THE 3'-END OF OLIGOMERS (CONT.)

Applied Biosystems, Expedite, & Pharmacia DNA & RNA Synthesizers

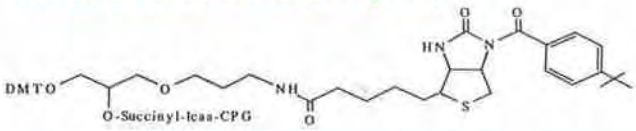
Size of CPG lcaa (long chain alkyl amino)

500 Ångstrom Pore Size
1000 Ångstrom Pore Size
Please inquire for other loadings and CPG sizes.

Scale of Synthesis

1.0 µmole Scale
0.2 µmole Scale

Biotin CPG Columns (t-butyl-bz)



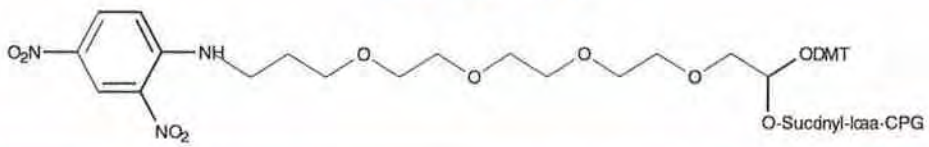
Catalog #	Product	Pack of 4 Columns	Price$
NSS-91625-A1CL	500Å Biotin lcaa CPG	1.0µmole	180.00
NSS-91625-A02CL	500Å Biotin lcaa CPG	0.2µmole	100.00
NSS-91621-A1CL	1000Å Biotin lcaa CPG	1.0µmole	200.00
NSS-91621-A02CL	1000Å Biotin lcaa CPG	0.2µmole	115.00

3'-Phosphate-ON CPG

(Generates 3'-terminal Phosphate)

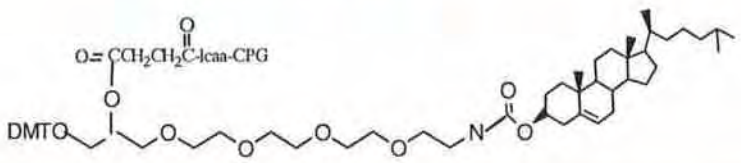
Catalog #	Product	Pack of 4 Columns	Price$
NSS-9811-A1CL	500Å 3'-Phosphate-ON lcaa CPG	1.0µmole	180.00
NSS-9811-A02CL	500Å 3'-Phosphate-ON lcaa CPG.	0.2µmole	100.00
NSS-9811-A1CL	1000Å 3'-Phosphate-ON lcaa CPG	1.0µmole	200.00
NSS-9811-A02CL	1000Å 3'-Phosphate-ON lcaa CPG	0.2µmole	115.00

DNP-TEG CPG



Catalog #	Product	Pack of 4 Columns	Price$
NSS-9815-A1CL	500Å DNP-TEG lcaa CPG	1.0µmole	144.00
NSS-9815-A02CL	500Å DNP-TEG lcaa CPG.	0.2µmole	98.00

Cholesterol (TEG) CPG



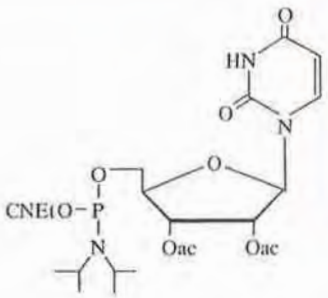
Catalog #	Product	Pack of 4 Columns	Price$
NSS-9819-A1CL	500Å Cholesterol 3'-lcaa CPG	1.0µmole	146.00
NSS-9819-A02CL	500Å Cholesterol 3'-lcaa CPG.	0.2µmole	96.00

For Corresponding Unpacked CPG Supports, Please See Page 112

5'-TERMINAL DIOL GENERATING PHOSPHORAMIDITES

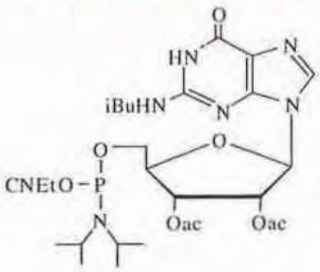
(For Attachment of Antibodies Etc.)

2',3'-DIACETYL RIBO URIDINE PHOSPHORAMIDITE



Catalog #: ANP-6155
F.W.: 528.489
Price: $265.00/100µm
$480.00/250mg

2',3'-DIACETYL RIBO GUANOSINE PHOSPHORAMIDITE



Catalog #: ANP-6156
F.W.: 637.621
Price: $265.00/100µm
$480.00/250mg

Terminal Diol Generating Reagents

2',3'-Diacetyl-5'-phosphoramidites are available from ChemGenes for the introduction of 2',3'-ribose units at the 5'-end of oligonucleotides. Following ammonia deprotection, the 2',3'-diacetate generates a free ribose 2',3'-diol moiety in the oligonucleotide. Periodate cleavage of these diols generates dialdehydes (N. F. Krynetskaya, G. V. Zayakina, T. S. Oretskaya, E. M. Volkov, Z. A. Shabarova, Nucleo. Nucleot., 5, 33, 1986). These dialdehydes have been stabilized by amines, especially by terminal amino groups of lysine residue of proteins or polypeptides (J. X. Khym, Biochemistry, 2, 344, 1963). Such oligonucleotide-protein conjugates have been utilized in immuno-assay and diagnostic applications.

PHOSPHORAMIDITES FOR RNA SYNTHESIS & CHEMISTRY**

RNA Synthesis

The importance of **RNA** has long been recognized in cellular processes. More recently the focus has been on antisense RNA *(C. Hëléne, J. J. Toulme, Biochim. Biophys. Acta, 99, 1049, 1990)* and the role of catalytic RNA in splicing and ligation *(T. R. Cech, Science, 236, 1532, 1987; Guerrier-Takadac, N. Lumelsky, S. Altman, Science, 246, 1578, 1989).* Chemical synthesis of defined sequence RNA is fundamental in developing the understanding and application in this field, since the enzymatic approach using RNA polymerase is template dependent *(J. F. Milligan, D. R. Groebe, G. W. Witherell, O. C. Uhlenbeck, Nucl. Acids Res., 15, 8783, 1987).* Chemical synthesis of RNA has been perfected to the extent that long sequences, such as biologically active 76-mer tRNA, and multi -milligram quantities can be produced efficiently *(D. Gasparuto, T. Livache, H. Bazin, A. Duplaa, A. Guy, A. Khorlin, D. Molko, A. Roget, R. Teoule, Nucl. Acids Res., 20, 5159, 1992; K. R. Webster, Y. Shamoo, W. Königsberg, E. K. Spicer, Biotechniques, 11, 658,1991).*

Purification of synthetic RNA

RNA purification is significantly more difficult than DNA purification due to possible chain cleavage isomerization of the internucleotide phosphate linkage. Several methodologies for deprotection and purification have been developed.

Small Quantity Purification

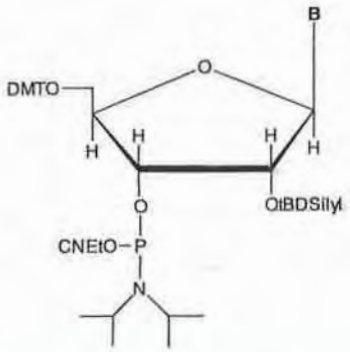
The first step following the synthesis of oligonucleotides involves a base treatment to remove the N-protecting as well as the cyanoethyl groups. For base deprotection both ethanol/28% aqueous ammonia (1:3) and anhydrous saturated ethanolic ammonia solutions have been used. The later was found to be superior in preventing the loss of any silyl groups *(S. A. Scaringe, C. Francklyn, N. Usman, Nucl. Acids Res., 18, 5433, 1990).* It has been reported that a certain amount of silyl groups will be lost when using the former ammonia solution *(J. Stawinski, R. Stromberg, M. Thelin, E. Westman, Nucl. Acids Res., 16, 9285, 1988).* The second step in the deprotection process involves removal of silyl protecting groups (TBDMS). This has been accomplished by 1.0M solution of tetrabutylammoniumfluoride (TBAF) in THF. The reaction involves 50 equivalents of TBAF per TBDMS group during 24 hours. Even though initially deemed adequate, this method is slow and still leaves some TBDMS groups on the oligonucleotide. Much better results have been obtained with triethylamine-tris-hydrofluoride (TEA.3HF). In the synthesis of 76-mer tRNA the reaction with neat TEA.3HF for 14 hours resulted in complete removal of all TBDMS groups *(D. Gasparutto et al., ibid.).* The faster rate of silyl removal with TEA.3HF has been demonstrated by others *(B. Sproat, F. Colonna, B. Mullah, D. Tsou, A. Andrus, A. Hampel, R. Vinayak, Nucleosides & Nucleotides, 14, 255, 1995).*

Use of Thioethyl Tetrazole

The use of thioethyl tetrazole has been shown to enhance coupling effiiciency to 99.7%. *(Marita Wasner, Dominique Arion, Gadi Borkow, Anne Noronha, Andre H. Uddin, Michael A. Parniak and Masad J. Damha, Biochemistry 37, 7478-7486 1998).* Pleaae see page 130 for ordering information.

PHOSPHORAMIDITES FOR RNA SYNTHESIS & CHEMISTRY**

5'-DMT-2'-tBDSilyl-Ribo Nucleoside 3'-CNEt Phosphoramidites



B	Cat. #
bzA	ANP 5671
bzC	ANP 5672
ibuG	ANP 5673
U	ANP 5674
I	ANP 5680
AcC	ANP 6676

Catalog #	Product	Prices $/250mg	$/500mg	$/1.0gm
ANP-5671	2'-tBDSilyl-ribo Adenosine (N-bz) phosphoramidite F.W.: 988.180	50.00	100.00	180.00
ANP-5672	2'-tBDSilyl-ribo Cytidine (N-bz) phosphoramidite F.W.: 964.151	50.00	100.00	180.00
ANP-5673	2'-tBDSilyl-ribo Guanosine (N-ibu) phosphoramidite F.W. : 970.166	50.00	100.00	180.00
ANP-5674	2'-tBDSilyl-ribo Uridine phosphoramidite F.W.: 861.034	50.00	100.00	180.00
ANP-5679	2gm KIT (500mg each of the above 4 products): $380.00			
ANP-5680	2'-tBDSilyl-ribo Inosine phosphoramidite F.W.: 885.064	70.00	120.00	190.00
ANP-6676	2'-tBDSilyl-ribo-Cytidine phosphoramidite (n-acetyl) F.W.: 903.1	50.00	100.00	180.00

RNA Solid Supports & Prepacked Columns — **Price($) (pack of 4 Columns)**

RNA Solid Support, Standard Protection Columns available in:
1.0 µm, 0.5 µm, 0.2 µm and 50 nmole synthesis, in 500,1000 & 2000Å pore size CPG — 60.00

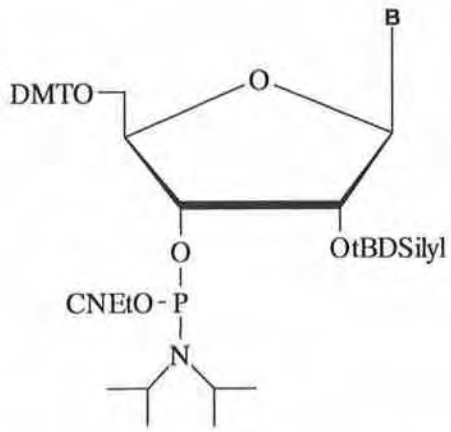
Please see column details pages 63

Quality:

**The 2'-tBDSilyl-5'-DMT-ribo Nucleosides are essentially 100% pure.
**Special care is taken to make sure that there is no silyl group migration during cyanoethyl phosphorylation chemistry.
**The 2'-tBDSilyl-3'-Cyanoethyl phosphoramidites have less than 1% of total impurities as determined from ^{31}P-NMR. The ^{31}P-NMR determined by expanding the region and the detection limit is 0.5%.
**The coupling of these Silyl phosphoramidites is better than 99% per cycle.

PHOSPHORAMIDITES FOR RNA SYNTHESIS & CHEMISTRY(Cont.)

N-PAC-2'-tBDSilyl-Ribonucleoside 3'-CNEt Phosphoramidite



B	Cat. #
PAC A	ANP 6671
PAC C	ANP 6672
PAC G	ANP 6673
U	ANP 5674

Catalog #	Product	Prices $/250mg	$/500mg	$/1.0gm
ANP-6671	N-PAC-2'-tBDSilyl-ribo Adenosine phosphoramidite F.W.: 1018.206	65.00	130.00	250.00
ANP-6672	N-PAC-2'-tBDSilyl-ribo Cytidine phosphoramidite F.W.: 994.177	65.00	130.00	250.00
ANP-6673	N-PAC-2'-tBDSilyl-ribo Guanosine phosphoramidite F.W.: 1034.206	65.00	130.00	250.00
ANP-5674	2'-tBDSilyl-ribo Uridine phosphoramidite F.W.: 861.034	50.00	100.00	180.00
ANP-6675	2gm KIT (500mg each of the above 4 products): $470.00			

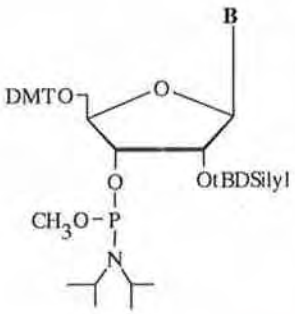
RNA Solid Supports & Prepacked Columns

RNA Solid Support, N-PAC Protection Columns available in:
1.0 µm, 0.5 µm, 0.2 µm and 50 nmole scale synthesis,
in 500,1000 & 2000Å pore size CPG.

Please see column details pages 65

PHOSPHORAMIDITES FOR RNA SYNTHESIS & CHEMISTRY(Cont.)

5'-DMT-2'-tBDSilyl-Ribonucleoside p-Methoxy Phosphoramidites*



B	Cat. #
bzA	ANP5691
bzC	ANP5692
ibuG	ANP5693
U	ANP5694

Catalog #	Product	Prices $/250mg	$/500mg	$/1.0gm
ANP-5691	2'-tBDSilyl-ribo Adenosine, (N-bz) p-methoxy phosphoramidite F.W.: 949.142	55.00	105.00	190.00
ANP-5692	2'-tBDSilyl-ribo Cytidine, (N-bz) p-methoxy phosphoramidite F.W.: 925.113	55.00	105.00	190.00
ANP-5693	2'-tBDSilyl-ribo Guanosine, (N-ibu) p-methoxy phosphoramidite F.W.: 931.128	55.00	105.00	190.00
ANP-5694	2'-tBDSilyl-ribo Uridine, p-methoxy phosphoramidite F.W.: 821.996	55.00	105.00	190.00
ANP-5699	2gm KIT (500mg each of the above 4 products): $388.00			

For RNA Synthesis Using Other Nucleophiles (Such as TEA, Thiophenol) For Deprotection of p-Methoxy Group

** These products are very useful to achieve high coupling during RNA Synthesis*

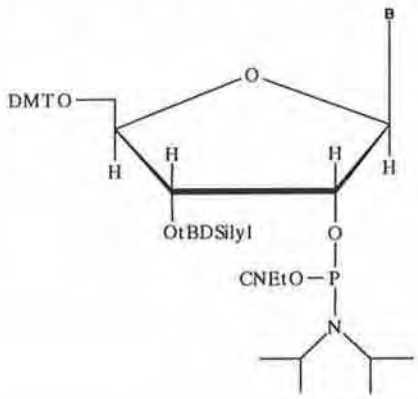
PHOSPHORAMIDITES FOR RNA SYNTHESIS & CHEMISTRY(Cont.)

SYNTHESIS OF UNNATURAL RNA
(5'-2'- LINKAGE)
5'-DMT-3'-tBDSilyl-Ribonucleoside 2'-CNEt Phosphoramidite

5'-2'-linked Oligonucleotides

ChemGenes offers a wide variety of 3'-Silyl protected ribonucleoside phosphoramidites that allow the synthesis of 5'-2'-linked oligonucleotides. The low molecular weight oligomer 5'-O-triphosphoryl adenylyl-(2'-5')-adenylyl-(2'-5')-adenosine (pppA2'p5'A2'p5'A) activates the latent endo-ribonuclease RNaseL, which subsequently cleaves the messenger and ribosomal RNAs (R. Charubala, E. Uhlmann, F. Himmelsbach, W. Pfleiderer, Helv. Chem. Acta, 70, 2028, 1987). Thus such oligonucleotides are very useful to determine their exact biological role, to extend their biological half life, or to alter the biological activity of the core structure (A2'p5'A2'p5'A) (J. C. Jamoulle, J. Imai, K. Lesiak, P. F. Torrence, Biochemistry, 23, 3063, 1984).

Recently, 2', 5'-linked synthetic RNA sequences consisting of mixed bases were synthesized . RNA 2',5' duplexes are not substrates of the enzyme RNAse H (Escherichia coli or HIV-1 reverse transcriptase) but they can inhibit the RNase H-mediated cleavage of a natural DNA:RNA substrate. (Marita Wasner, Dominique Arion, Gadi Borkow, Anne Noronha, Andre H. Uddin, Michael A. Parniak and Masad J. Damha, Biochemistry. 37, 7478-7486, 1998).



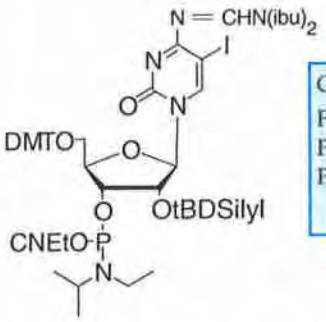
B	Cat. #
bzA	ANP5681
bzC	ANP5682
ibuG	ANP5683
U	ANP5684

Catalog #	Product	Prices $/250mg	$/500mg	$/1.0gm
ANP-5681	3'-tBDSilyl-ribo Adenosine (N-bz) phosphoramidite F.W.: 988.180	85.00	160.00	280.00
ANP-5682	3'-tBDSilyl-ribo Cytidine (N-bz) phosphoramidite F.W.: 964.151	85.00	160.00	280.00
ANP-5683	3'-tBDSilyl-ribo Guanosine (N-ibu) phosphoramidite F.W.: 970.166	85.00	160.00	280.00
ANP-5684	3'-tBDSilyl-ribo Uridine phosphoramidite F.W.: 861.034	85.00	160.00	280.00
ANP-5689	2gm KIT (500mg each of the above 4 products): $545.00			

PHOSPHORAMIDITES FOR RNA SYNTHESIS & CHEMISTRY(cont.)

Please refer to the properties of modified deoxy nucleosides as indicated in Section 8, page 26

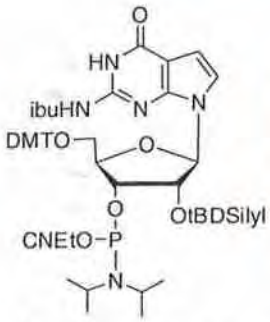
5-Iodo-Cytidine(N, N-dibutyl formamidine)-2'tBDSilyl-3'-phosphoramidite



Catalog #: ANP-7212
F.W: 1153.15
Purity: 98%+
Prices $: 155.00/100 µmole
330.00/250mg

For Corresponding CPG columns, see page 64 - 65

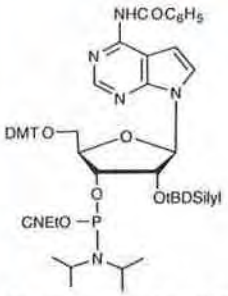
7-Deaza-Guanosine(n-ibu)-2'tBDSilyl-3'-phosphoramidite



Catalog #: ANP-7301
F.W: 969.166
Purity: 98%+
Prices $: 355.00/100 µmole

For Corresponding CPG columns, see page 64 - 65

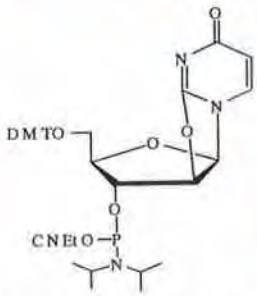
7-Deaza Adenosine(bz)-2'tBDSilyl-3'-phosphoramidite



Catalog #: ANP-7101
F.W: 987.18
Purity: 98%+
Prices $: 315.00/100 µmole
Purity: 98%+

For Corresponding CPG columns, see page 64 - 65

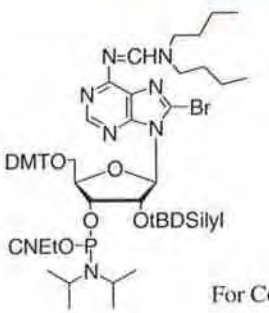
5'-DMT-2,2'-Anhydro- Uridine-3'-phosphoramidite



Catalog #: ANP-4876
F.W: 728.7
Prices $: 185.00/100µmole
485.00/ 250 mg.
Purity: 98%+

For Corresponding CPG columns, see page 64 - 65

8-Bromo-2'-tBDSilyl-ribo Adenosine (N,N-dibutyl formamidine)-3'-Phosphoramidite



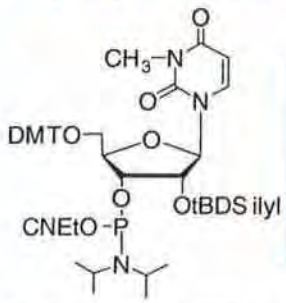
Catalog #: ANP-7111
F.W: 1102.18
Purity: 98%+
Prices $: 115.00/100 µmole
235.00/250mg

For Corresponding CPG columns, see page 64 - 65

TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

PHOSPHORAMIDITES FOR RNA SYNTHESIS & CHEMISTRY(cont.)

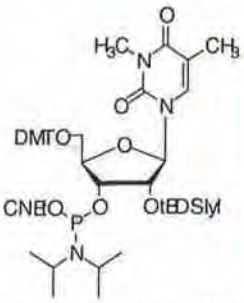
N^3-Methyl Uridine-2'tBDSilyl 3'-phosphoramidite



Catalog #: ANP-7451
F.W: 875.054
Purity: 98%+
Prices $: 145.00/100 µmole
380.00/250mg

For Corresponding CPG columns, see page 64 - 65

N^3-Methyl Ribo Thymidine 2'tBDSilyl-3'-phosphoramidite

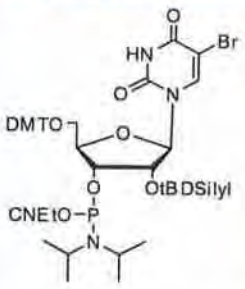


Catalog #: ANP-6153
F.W: 889.08
Purity: 98%+
Prices $: 115.00/100 µmole
260.00/250mg

For Corresponding CPG columns, see page 64 - 65

N^3-methyl Uridine *and* ***N^3-methyl Thymidine*** *are the results of chemical carcinogens on DNA/RNA. Alkylation products in general are formed at the ring-nitrogen atoms and the exocyclic oxygen atoms of all four bases as well as at the oxygen atoms of the internucleotide phosphate bonds. Such adducts can initiate neoplastic transformations (B. Singer, J. T. Kusmierek, Ann. Rev. Biochem., 52, 522, 1982; R. Saffhill, G. P. Margison, P. J. O'Connor, Biochim. Biophys. Acta, 823, 111, 1985). The individual alkylation products are thought to possess different mutagenic and carcinogenic properties (Nucl. Acids Res., 20, 6471, 1992).* ***N^3-methyl Uridine phosphoramidite*** *and* ***N^3-methyl Thymidine phosphoramidite*** *are currently available from ChemGenes for incorporation into RNA/DNA to further study the biochemical nature of these oligonucleotides. It is important to gain an understanding of these ring-nitrogen modified bases for eventual damage repairs.*

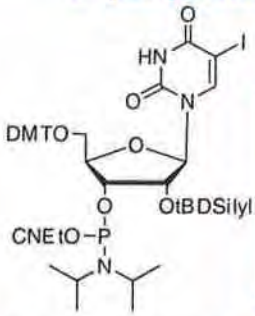
5-Bromo Uridine-2'tBDSilyl 3'-phosphoramidite



Catalog #: ANP-7411
F.W: 940.34
Purity: 98%+
Prices $: 155.00/100 µmole
350/250mg

For Corresponding CPG columns, see page 64 - 65

5-Iodo Uridine-2'tBDSilyl 3'-phosphoramidite



Catalog #: ANP-7412
F.W: 987.034
Purity: 98%+
Prices $: 155.00/100 µmole
350.00/250mg

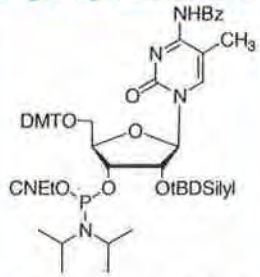
For Corresponding CPG columns, see page 64 - 65

PHOSPHORAMIDITES FOR RNA SYNTHESIS & CHEMISTRY(cont.)

5'-DMT Modified Rebonucleoside, CED Phosphoramidites (Cont.)

AVAILABLE IN MILLIGEN CYCLONE, BECKMAN 1000, PHARMACIA, ABI AND EXPEDITE CONFIGURATIONS

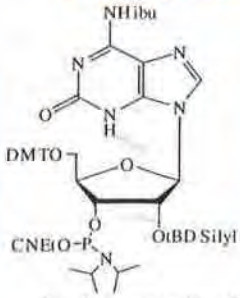
5'-DMT- 5-Methyl Cytidine(bz)-2'tBDSilyl 3'-phosphoramidite



Catalog #: ANP-5864
F.W: 978.151
Purity: 98%+
Prices $: 120.00/100µM
320.00/250mg

For Corresponding CPG columns, see page 64 - 65

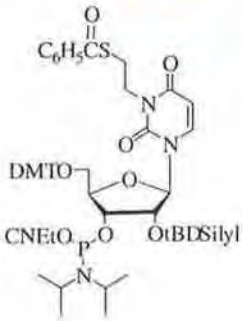
Isoguanosine(n-ibu)-2'-tBDSilyl 3'-Phosphoramidite



Catalog #: ANP-5987
F.W: 970.18
Purity: 98%+
Prices $: 255.00/100µM
480.00/250mg

For Corresponding CPG columns, see page 64 - 65

Synthesis of RNA Loop Structures (N3-Thiobenzoylethyl Uridine-2'tBDSilyl 3'-phosphoramidite)



Catalog #: ANP-7441
F.W: 1025.26
Purity: 98%+
Prices $: 280.00/100 µM
615.00/250mg

For Corresponding CPG columns, see page 64 - 65

Conformationally Restricted RNA Hairpin

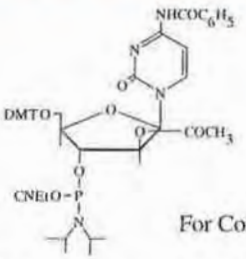
ChemGenes has developed RNA monomers, in particular ***N^3-(thiobenzoylethyl)-2'tBDSilyl-Ribo Uridine phosphoramidite****, for the synthesis of conformationally restricted RNA molecules. Such synthetic RNA finds a multitude of valuable applications. Since a large number of RNA occurs as hairpin structure (J. R. Wyatt, J. D. Puglisi, I. Tinoco Jr., BioEssays, 11, 100, 1989), synthesis of conformationally restricted RNA can provide valuable structure-function information. The synthesis of a conformationally restricted RNA hairpin has been demonstrated by Gary Glick (G. D. Glick, J. Org. Chem., 56, 6746, 1991). He has elegantly shown that the 5 base pair complementary stem structure allows the terminal thioethyl sulfides to come close enough together to form covalent disulfide bonds. ChemGenes also has the corresponding CPG support available for the incorporation of N^3-(thiobenzoylethyl)-Ribo Uridine at the 3'-end unit of RNA.*

MODIFIED PHOSPHORAMIDITES FOR RNA SYNTHESIS CHEMISTRY(cont.)

5'-DMT Modified Ribonucleosides, CED Phosphoramidites

AVAILABLE IN MILLIGEN CYCLONE, BECKMAN 1000, PHARMACIA, ABI AND EXPEDITE CONFIGURATIONS

ARA-CYTOSINE PHOSPHORAMIDITE (CYTOSINE ARABINOSIDE-3'-AMIDITE)

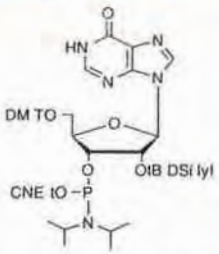


Catalog #: ANP-49750
F.W: 891.922
Prices $: 120.00/100µm
320.00/250mg

For Corresponding CPG columns, see page 64 - 65

AraC phosphoramidite was synthesized and incorporated into synthetic oligonucleotides in order to study the duplex stability (P. Beardsley, T. Mikita, M. M. Klause, A. L. Nussbaum, Nucl. Acids Res., 16, 9165, 1988).
AraC nucleoside is a potent antileukemic agent as well as an inhibitor of DNA replication, through a mechanism which is not yet fully understood (P. P. Major et al., Proc. Natl. Acad. Sci. USA, 78, 3235, 1981). Oligonucleotides containing such modified nucleosides are important to establish their biochemical role.

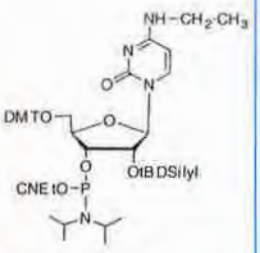
5'-DMT-Inosine 2'-tBDSilyl 3'-phosphoramidite



Catalog #: ANP-5680
F.W: 885.064
Purity: 98%+
Prices $: 70.00/250mg
120.00/500mg

For Corresponding CPG columns, see page 64 - 65

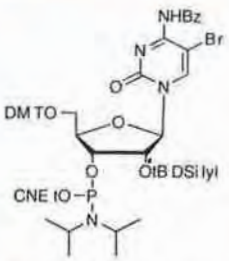
5'-DMT N-Ethyl-2'-tBDSilyl Cytidine Phosphoramidite



Catalog #: ANP-4165
F.W: 888.151
Purity: 98%+
Prices $:265.00/100µM
455.00/250mg

For Corresponding CPG columns, see page 64 - 65

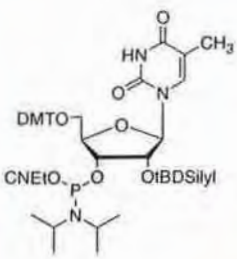
5-Bromo Cytidine(bz)-2'tBDSilyl 3'-phosphoramidite



Catalog #: ANP-5648
F.W: 1043.151
Purity: 98%+
Prices $: 135.00/100mg
330.00/250mg
585.00/500mg

For Corresponding CPG columns, see page 64 - 65

Ribo Thymidine-2'tBDSilyl 3'-phosphoramidite



Catalog #: ANP-7501
F.W: 875.054
Purity: 98%+
Prices $:185.00/100 µmole
480.00/250mg

For Corresponding CPG columns, see page 64 - 65

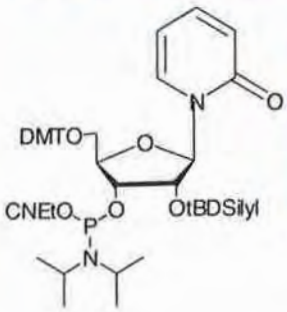
Ribo Thymidine *is a minor constituent of RNA. Biologically active natural tRNA containing Ribo Thymidine as a minor base has recently been chemically synthesized (D. Gasparutto, T. Livache, H. Bazin, A. M. Duplaa, A. Guy, A. Khorlin, D. Molko, A. Roget, and R. Teoule, Nucl. Acids Res., 19, 5159, 1992).*

MODIFIED PHOSPHORAMIDITES FOR RNA SYNTHESIS & CHEMISTRY(cont.)

5'-DMT Modified Ribonucleosides, CED Phosphoramidites (Cont.)

AVAILABLE IN MILLIGEN CYCLONE, BECKMAN 1000, PHARMACIA, ABI AND EXPEDITE CONFIGURATIONS

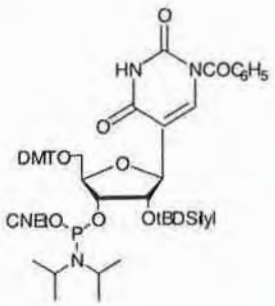
Pyridine 2-one-2'-tBDSilyl CED Phosphoramidite



Catalog #:ANP-8611
F.W: 843.93
Prices $: 280.00/100 µM
665.00/250mg
Purity: 98%+

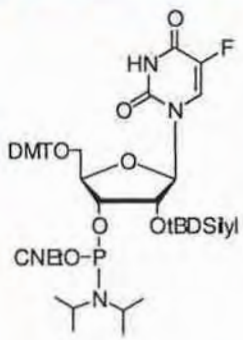
PseudoUridine-2tBDSilyl CED Phosphoramidite

Catalog #:ANP-8612
F.W: 966.034
Prices $: 355.00/100 µM
Purity: 98%+



For Corresponding CPG columns, see page 64 - 65

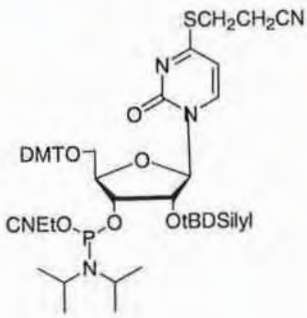
5'-DMT-5-Fluoro Uridine 2'-tBDSilyl 3'-phosphoramidite



Catalog #: ANP-6154
F.W: 879.034
Purity: 98%+
Prices $: 255.00/100 µM
480.00/250mg

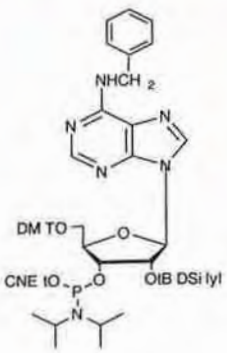
5'-DMT-4-Thiocyanoethyl-2'-tBDSIlyl-ribo Uridine CED Phosphoramidite

Catalog #: ANP-8101
F.W: 930.15
Prices $: 265.00/100 µM
455.00/ 250 mg.
Purity: 98%+



For Corresponding CPG columns, see page 64 - 65

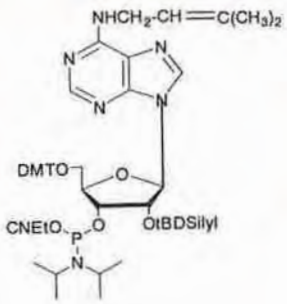
N6-Benzyl-Adenosine Phosphoramidite



Catalog #:ANP-8614
F.W: 974.18
Prices $: 365.00/100 µM
Purity: 98%+

N6-Isopentyl Adenosine Phosphoramidite

Catalog #: ANP-8615
F.W: 952.2
Prices $: 365.00/100 µM
Purity: 98%+



For Corresponding CPG columns, see page 64 - 65

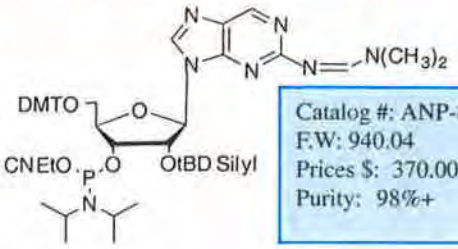
TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

MODIFIED PHOSPHORAMIDITES FOR RNA SYNTHESIS & CHEMISTRY(cont.)

5'-DMT Modified Ribonucleosides, CED Phosphoramidites (Cont.)

AVAILABLE IN MILLIGEN CYCLONE, BECKMAN 1000, PHARMACIA, ABI AND EXPEDITE CONFIGURATIONS

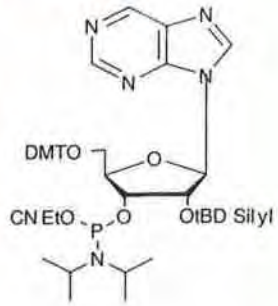
2-Aminopurine Riboside Phosphoramidite



Catalog #: ANP-8617
F.W: 940.04
Prices $: 370.00/100 µM
Purity: 98%+

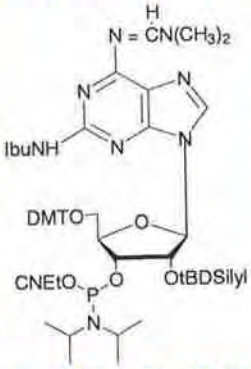
Purine Riboside Phosphoramidite

Catalog #: ANP-8616
F.W: 870.18
Prices $: 385.00/100 µM
Purity: 98%+



For Corresponding CPG columns, see page 64 - 65

2,6-Diaminopurine Riboside Phosphoramidite (2-Amino Adenosine)

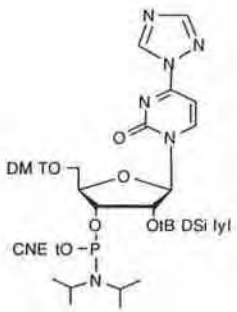


Catalog #:ANP-8613
F.W: 1024.6
Prices $: 325.00/100 µM
Purity: 98%+

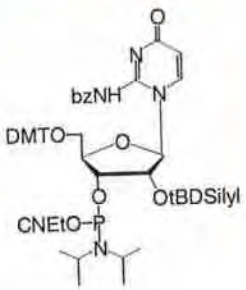
For Corresponding CPG columns, see page 64 - 65

5'-DMT-4-Triazolyl-Uridine 2'-tBDSilyl-3'-phosphoramidite

Catalog #: ANP-9167
F.W: 912.034
Purity: 98%+
Prices $: 255.00/100 µM
480.00/250mg



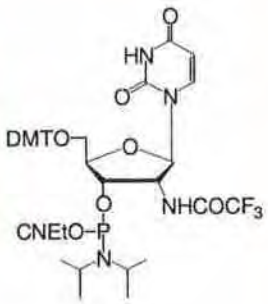
Isocytidine 2'-tBDSilyl 3'-Phosphoramidite



Catalog #: ANP-7705
F.W: 964.15
Prices $: 370.00/100 µM
Purity: 98%+

2'-AminoUridine Phosphoramidite

Catalog #: ANP-9403
F.W: 841.83
Prices $: 185.00 /100 µM
480.00 /250 mg.
Purity: 98%+



For Corresponding CPG columns, see page 64 - 65

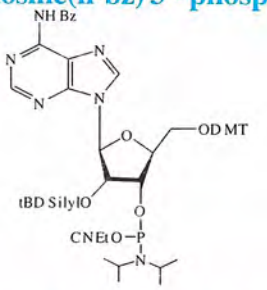
MODIFIED AMIDITES FOR RNA SYNTHESIS AND CHEMISTRY (Cont.)

5'-DMT L-Ribonucleoside Phosphoramidite, CED Phosphoramidites (Cont.)

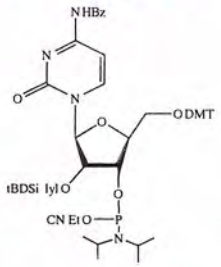
AVAILABLE IN MILLIGEN CYCLONE, BECKMAN 1000, PHARMACIA, ABI AND EXPEDITE CONFIGURATIONS

Mirror Image of Natural RNA
***** Offer A Wide Variety of Applications *****
β-L- Ribo Nucleoside Phosphoramidites

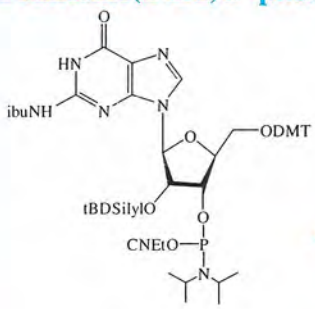
ANP-4841 5'-DMT- β-L-2'-tBDSilyl Adenosine(n-bz) 3'- phosphoramidite



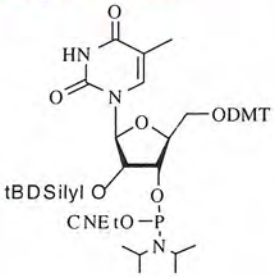
ANP-4842 5'-DMT- β-L-2'-tBDSilyl Cytidine(n-bz) 3'-phosphoramidite



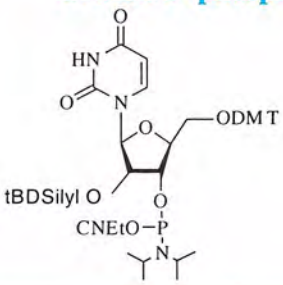
ANP-4843 5'-DMT β-L-2'-tBDSilyl Guanosine(n-ibu) 3'-phosphoramidite



ANP-4844 5'-DMT β-L-2'-tBDSilyl Thymidine 3'-phosphoramidite



ANP-4845 5'-DMT β-L-2'-tBDSilyl Uridine 3'-phosphoramidite



For Corresponding CPG columns, see page 66

Catalog #	Name	Price 100mg	0.5gm	1.0gm
ANP-4841	5'-DMT-β–L-2'-tBDSilyl Adenosine(bz) 3'-phosphoramidite F.W: 988.18	425.00	675.00	1250.00
ANP-4842	5'-DMT-β–L-2'-tBDSilyl Cytidine(bz) 3'-phosphoramidite F.W: 964.15	425.00	675.00	1250.00
ANP-4843	5'-DMT-β–L-2'-tBDSilyl Guanosine(ibu) 3'-phosphoramidite F.W: 970.18	425.00	675.00	1250.00
ANP-4844	5'-DMT-β-L-2'-tBDSilyl Thymidine 3'-phosphoramidite F.W: 875.06	425.00	675.00	1250.00
ANP-4845	5'-DMT-β-L-2'-tBDSilyl Uridine 3'-phosphoramidite F.W: 861.034	425.00	675.00	1250.00

STANDARD RIBO NUCLEOSIDE PREPACKED COLUMNS

Applied Biosystems, Expedite, & Pharmacia DNA & RNA Synthesizers

RNA Solid Support Columns, Standard Protection

Size of CPG lcaa (long chain alkyl amino)	Scale of Synthesis
500 Ångstrom Pore Size	1.0 µmole Scale
1000 Ångstrom Pore Size	0.5 µmole Scale
2000 Ångstrom Pore Size	0.2 µmole Scale
	(50 nmole) 0.05 µmole Scale

Please inquire for other loadings and CPG sizes.

Catalog #	Product	Pack of 4 Columns	Price$
NSS-6101-5A1CL	500Å ribo Adenosine (N-bz) lcaa CPG	1.0µmole	60.00
NSS-6102-5C1CL	500Å ribo Cytidine (N-bz) lcaa CPG	1.0µmole	60.00
NSS-6103-5G1CL	500Å ribo Guanosine (N-ibu) lcaa CPG	1.0µmole	60.00
NSS-6104-5U1CL	500Å ribo Uridine lcaa CPG	1.0µmole	60.00
NSS-6201-5A05CL	500Å ribo Adenosine (N-bz) lcaa CPG	0.5µmole	60.00
NSS-6202-5C05CL	500Å ribo Cytidine (N-bz) lcaa CPG	0.5µmole	60.00
NSS-6203-5G05CL	500Å ribo Guanosine (N-ibu) lcaa CPG	0.5µmole	60.00
NSS-6204-5U05CL	500Å ribo Uridine lcaa CPG	0.5µmole	60.00
NSS-6301-5A02CL	500Å ribo Adenosine (N-bz) lcaa CPG	0.2µmole	60.00
NSS-6302-5C02CL	500Å ribo Cytidine (N-bz) lcaa CPG	0.2µmole	60.00
NSS-6303-5G02CL	500Å ribo Guanosine (N-ibu) lcaa CPG	0.2µmole	60.00
NSS-6304-5U02CL	500Å ribo Uridine lcaa CPG	0.2µmole	60.00
NSS-6401-10A1CL	1000Å ribo Adenosine (N-bz) lcaa CPG	1.0µmole	60.00
NSS-6402-10C1CL	1000Å ribo Cytidine (N-bz) lcaa CPG	1.0µmole	60.00
NSS-6403-10G1CL	1000Å ribo Guanosine (N-ibu) lcaa CPG	1.0µmole	60.00
NSS-6404-10U1CL	1000Å ribo Uridine lcaa CPG	1.0µmole	60.00
NSS-6501-10A05CL	1000Å ribo Adenosine (N-bz) lcaa CPG	0.5µmole	60.00
NSS-6502-10C05CL	1000Å ribo Cytidine (N-bz) lcaa CPG	0.5µmole	60.00
NSS-6503-10G05CL	1000Å ribo Guanosine (N-ibu) lcaa CPG	0.5µmole	60.00
NSS-6504-10U05CL	1000Å ribo Uridine lcaa CPG	0.5µmole	60.00
NSS-6601-10A02CL	1000Å ribo Adenosine (N-bz) lcaa CPG	0.2µmole	60.00
NSS-6602-10C02CL	1000Å ribo Cytidine (N-bz) lcaa CPG	0.2µmole	60.00
NSS-6603-10G02CL	1000Å ribo Guanosine (N-ibu) lcaa CPG	0.2µmole	60.00
NSS-6604-10U02CL	1000Å ribo Uridine lcaa CPG	0.2µmole	60.00
NSS-6701-20A02CL	2000Å ribo Adenosine (N-bz) lcaa CPG	0.2µmole	65.00
NSS-6702-20C02CL	2000Å ribo Cytidine (N-bz) lcaa CPG	0.2µmole	65.00
NSS-6703-20G02CL	2000Å ribo Guanosine (N-ibu) lcaa CPG	0.2µmole	65.00
NSS-6704-20U02CL	2000Å ribo Uridine lcaa CPG	0.2µmole	65.00
NSS-6801-20A005CL	2000Å ribo Adenosine (N-bz) lcaa CPG	0.05µmole (50 nmole)	65.00
NSS-6802-20C005CL	2000Å ribo Cytidine (N-bz) lcaa CPG	0.05µmole (50 nmole)	65.00
NSS-6803-20G005CL	2000Å ribo Guanosine (N-ibu) lcaa CPG	0.05µmole (50 nmole)	65.00
NSS-6804-20C005CL	2000Å ribo Uridine lcaa CPG	0.05µmole (50 nmole)	65.00

For Corresponding Unpacked CPG Supports, Please See Page 103-107

MODIFIED RIBO NUCLEOSIDE PREPACKED COLUMNS (Cont.)

Applied Biosystems, Expedite, & Pharmacia DNA & RNA Synthesizers
RNA Solid Support columns, Standard Protection

Size of CPG lcaa (long chain alkyl amino)
500 Ångstrom Pore Size

Scale of Synthesis
1.0 µmole Scale
0.2 µmole Scale
Please inquire for other loadings and CPG sizes.

Catalog #	Product	Pack of 4 Columns	Price$
NSS-9809-5U1CL	500Å 5-Iodo-Uridine lcaa CPG	1.0µmole	85.00
NSS-9809-5A02C	500Å 5-Iodo Uridine lcaa CPG	0.2µmole	60.00
NSS-9801-5C1CL	500Å 5-Iodo-Cytidine lcaa CPG	1.0µmole	90.00
NSS-9801-5C02CL	500Å 5-Iodo-Cytidine lcaa CPG	0.2µmole	60.00
NSS-9802-5G1CL	500Å 7-deaza-Guanosine(n-ibu) lcaa CPG	1.0µmole	145.00
NSS-9802-5G02CL	500Å 7-deaza-Guanosine(n-ibu) lcaa CPG	0.2µmole	75.00
NSS-9803-5A1CL	500Å 7-deaza-Adenosine(bz) lcaa CPG	1.0µmole	145.00
NSS-9803-5A02CL	500Å 7-deaza-Adenosine(bz) lcaa CPG	0.2µmole	75.00
NSS-9804-5U1CL	500Å 5'-DMT-2,2'-Anhydro-Uridine lcaa CPG	1.0µmole	75.00
NSS-9804-5U02CL	500Å 5'-DMT-2,2'-Anhydro-Uridine lcaa CPG	0.2µmole	60.00
NSS-9805-5A1CL	500Å 8-Bromo-ribo Adenosine (N,N-dibutyl formamidine) lcaa CPG	1.0µmole	120.00
NSS-9805-5A02CL	500Å 8-Bromo-ribo Adenosine (N,N-dibutyl formamidine) lcaa CPG	0.2µmole	75.00
NSS-9806-5U1CL	500Å N3-Methyl Uridine lcaa CPG	1.0µmole	85.00
NSS-9806-5U02CL	500Å N3-Methyl Uridine lcaa CPG	0.2µmole	60.00
NSS-9808-5U1CL	500Å 5-Bromo Uridine lcaa CPG	1.0µmole	120.00
NSS-9808-5U02CL	500Å 5-Bromo-Uridine lcaa CPG	0.2µmole	105.00
NSS-9834-5C1CL	500Å 5-Bromo Cytidine lcaa CPG	1.0µmole	130.00
NSS-9834-5C02CL	500Å 5-Bromo-Cytidine lcaa CPG	0.2µmole	115.00
NSS-9831-5C1CL	500Å 5-Methyl Cytidine lcaa CPG	1.0µmole	110.00
NSS-9831-5C02CL	500Å 5-Methyl Cytidine lcaa CPG	0.2µmole	75.00
NSS-9836-5C1CL	500Å N4-Ethyl Cytidine lcaa CPG	1.0µmole	125.00
NSS-9836-5C02CL	500Å N4-Ethyl Cytidine lcaa CPG	0.2µmole	85.00
NSS-9832-5I1CL	500Å Isoguanosine(n-ibu) lcaa CPG	1.0µmole	140.00
NSS-9832-5I02CL	500Å Isoguanosine(n-ibu) lcaa CPG	0.2µmole	85.00
NSS-9833-5U1CL	500Å N3-Thiobenzoylethyl Uridine lcaa CPG	1.0µmole	140.00
NSS-9833-5U12CL	500Å N3-Thiobenzoylethyl Uridine lcaa CPG	0.2µmole	80.00
NSS-9622-5P1CL	500Å 2'-Amino Uridine lcaa CPG	1.0µmole	105.00
NSS-9622-5P02CL	500Å 2'-Amino Uridine lcaa CPG	0.2µmole	60.00
NSS-9835-5C1CL	500Å Cytosine Arabinoside lcaa CPG	1.0µmole	85.00
NSS-9835-5C02CL	500Å Cytosine Arabinoside lcaa CPG	0.2µmole	65.00
NSS-9837-5U1CL	500Å 5-Fluoro Uridine lcaa CPG	1.0µmole	90.00
NSS-9837-5U02CL	500Å 5-Fluoro Uridine lcaa CPG	0.2µmole	70.00
NSS-9866-5U1CL	500Å 4-Triazolyl Uridine lcaa CPG	1.0µmole	75.00
NSS-9866-5U02CL	500Å 4-Triazolyl Uridine lcaa CPG	0.2µmole	60.00
NSS-9867-5C1CL	500Å Isocytidine 2'-Silyl lcaa CPG	1.0µmole	145.00
NSS-9867-5C02CL	500Å Isocytidine 2'-Silyl lcaa CPG	0.2µmole	120.00
NSS-89421-5U1CK	500Å 4 Thio Uridine lcaa CPG	1.0µmole	140.00
NSS-89421-5U02CL	500Å 4 Thio Uridine lcaa CPG	0.2µmole	85.00

For Corresponding Unpacked CPG Supports, Please See Page 103-107

MODIFIED RIBO NUCLEOSIDE PREPACKED COLUMNS (Cont.)

Applied Biosystems, Expedite, & Pharmacia DNA & RNA Synthesizers
RNA Solid Support columns, Standard and N-PAC Protection

Size of CPG lcaa (long chain alkyl amino)
500 Ångstrom Pore Size

Scale of Synthesis

1.0	µmole Scale
0.5	µmole Scale
0.2	µmole Scale
(50 nmole) 0.05	µmole Scale

Please inquire for other loadings and CPG sizes.

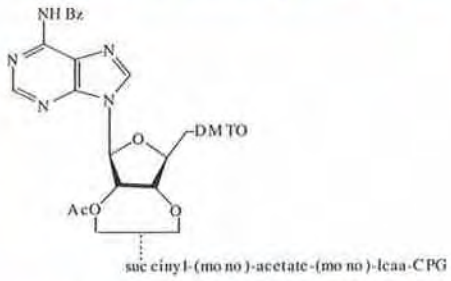
Catalog #	Product	Pack of 4 Columns	Price$
NSS-P6101-5A1CL	500Å ribo Adenosine (N-PAC) lcaa CPG	1.0µmole	80.00
NSS-P6102-5C1CL	500Å ribo Cytidine (N-PAC) lcaa CPG	1.0µmole	80.00
NSS-P6103-5G1CL	500Å ribo Guanosine (N-PAC) lcaa CPG	1.0µmole	80.00
NSS-6104-5U1CL	500Å ribo Uridine lcaa CPG	1.0µmole	80.00
NSS-P6201-5A05CL	500Å ribo Adenosine (N-PAC) lcaa CPG	0.5µmole	70.00
NSS-P6202-5C05CL	500Å ribo Cytidine (N-PAC) lcaa CPG	0.5µmole	70.00
NSS-P6203-5G05CL	500Å ribo Guanosine (N-PAC) lcaa CPG	0.5µmole	70.00
NSS-6204-5U05CL	500Å ribo Uridine lcaa CPG	0.5µmole	70.00
NSS-P6301-5A02CL	500Å ribo Adenosine (N-PAC) lcaa CPG	0.2µmole	65.00
NSS-P6302-5C02CL	500Å ribo Cytidine (N-PAC) lcaa CPG	0.2µmole	65.00
NSS-P6303-5G02CL	500Å ribo Guanosine (N-PAC) lcaa CPG	0.2µmole	65.00
NSS-6304-5U02CL	500Å ribo Uridine lcaa CPG	0.2µmole	65.00
NSS-P6441-5A005CL	500Å ribo Adenosine (N-PAC) lcaa CPG	0.05µmole (50 nmole)	65.00
NSS-P6442-5C005CL	500Å ribo Cytidine (N-PAC) lcaa CPG	0.05µmole (50 nmole)	65.00
NSS-P6443-5G005CL	500Å ribo Guanosine (N-PAC) lcaa CPG	0.05µmole (50 nmole)	65.00
NSS-6444-5U005CL	500Å ribo Uridine lcaa CPG	0.05µmole (50 nmole)	65.00
NSS-0837-5I1CL	500Å Ribo Inosine lcaa CPG	1.0µmole	65.00
NSS-0837-5I02CL	500Å Ribo Inosine lcaa CPG	0.2µmole	50.00
NSS-0846-5I1CL	500Å Ribo Thymidine lcaa CPG	1.0µmole	90.00
NSS-0846-5I02CL	500Å Ribo Thymidine lcaa CPG	0.2µmole	75.00
NSS-9001-5U1CL	500Å 2'-Amino Uridine lcaa CPG	1.0µmole	105.00
NSS-9001-5U02CL	500Å 2'-Amino Uridine lcaa CPG	0.2µmole	60.00
NSS-9002-5U1CL	500Å Pyridine-2-one-lcaa CPG	1.0µmole	105.00
NSS-9002-5U02CL	500Å Pyridine-2-one-lcaa CPG	0.2µmole	60.00
NSS-9003-5U1CL	500Å PseudoUridine lcaa CPG	1.0µmole	105.00
NSS-9003-5U02CL	500Å PseudoUridine lcaa CPG	0.2µmole	60.00
NSS-9003-5P1CL	500Å 2,6-diaminopurine riboside lcaa CPG	1.0µmole	120.00
NSS-9003-5P02CL	500Å 2,6-diaminopurine riboside lcaa CPG	0.2µmole	95.00
NSS-9005-5A1CL	500Å N6-Benzyl-Adenosine lcaa CPG	1.0µmole	105.00
NSS-9005-5A02CL	500Å N6-Benzyl-Adenosine lcaa CPG	0.2µmole	60.00
NSS-9006-5A1CL	500Å N6-Isopentyl Adenosine lcaa CPG	1.0µmole	105.00
NSS-9006-5A02CL	500Å N6-Isopentyl Adenosine lcaa CPG	0.2µmole	60.00
NSS-9007-5P1CL	500Å 2-AminoPurine Riboside lcaa CPG	1.0µmole	105.00
NSS-9007-5P02CL	500Å 2-AminoPurine Riboside lcaa CPG	0.2µmole	60.00
NSS-9008-5P1CL	500Å Purine Riboside lcaa CPG	1.0µmole	95.00
NSS-9008-5P02CL	500Å Purine Riboside lcaa CPG	0.2µmole	60.00

For Corresponding Unpacked CPG Supports, Please See Page 103-107

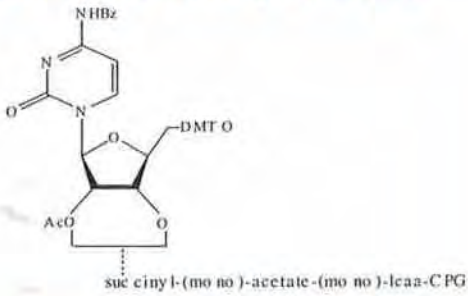
MODIFIED RIBO NUCLEOSIDE CPG COLUMNS (Cont.)

5'-DMT β-L-Ribonucleoside

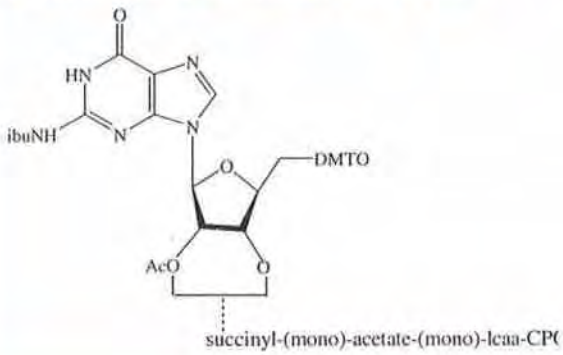
NSS-40611 5'-DMT- β-L riboAdenosine(n-bz) 2'/3'-Acetate 2'/3' Succinyl-lcaa-CPG



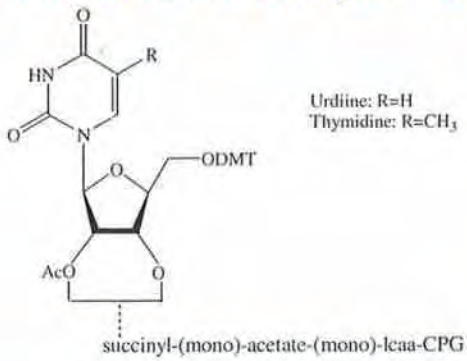
NSS-40612 5'-DMT- β-L-Cytidine(n-bz) 2'/3'-Acetate 2'/3' Succinyl-lcaa-CPG



NSS-40613 5'-DMT β-L- Guanosine(n-ibu) 2'/3'-Acetate 2'/3'-Succinyl-lcaa CPG



NSS-40614/5 5'-DMT β-L- Uridine /Thymidine 2'/3'-Acetate 2'/3'-Succnyl-lcaa CPG



Catalog #	Product	Pack of 4 Columns	Price$
NSS-40611-01-500A	5'-DMT- β-L riboAdenosine(n-bz) 2'/3'-Acetate 2'/3' Succinyl-lcaa-CPG	1.00 µmole	125.00
NSS-40611-02-500A	5'-DMT- β-L riboAdenosine(n-bz) 2'/3'-Acetate 2'/3' Succinyl-lcaa-CPG	0.20 µmole	110.00
NSS-40612-01-500C	5'-DMT- β-L-Cytidine(n-bz) 2'/3'-Acetate 2'/3' Succinyl-lcaa-CPG	1.00 µmole	125.00
NSS-40612-02-500C	5'-DMT- β-L-Cytidine(n-bz) 2'/3'-Acetate 2'/3' Succinyl-lcaa-CPG	0.20 µmole	110.00
NSS-40613-01-500G	5'-DMT β-L- Guanosine(n-ibu) 2'/3'-Acetate 2'/3'-Succinyl-lcaa CPG	1.00 µmole	125.00
NSS-40613-02-500G	5'-DMT β-L- Guanosine(n-ibu) 2'/3'-Acetate 2'/3'-Succinyl-lcaa CPG	0.20 µmole	110.00
NSS-40614-01-500U	5'-DMT β-L- Uridine 2'/3'-Acetate 2'/3'-Succnyl-lcaa CPG	1.00 µmole	125.00
NSS-40614-02-500U	5'-DMT β-L- Uridine 2'/3'-Acetate 2'/3'-Succnyl-lcaa CPG	0.20 µmole	110.00
NSS-40615-01-500T	5'-DMT β-L- Thymidine 2'/3'-Acetate 2'/3'-Succnyl-lcaa CPG	1.00 µmole	125.00
NSS-40615-02-500T	5'-DMT β-L- Thymidine 2'/3'-Acetate 2'/3'-Succnyl-lcaa CPG	0.20 µmole	110.00

ANTISENSE PRODUCTS

Antisense (i.e. sequences complimentary to the "sense" strand, or usually messenger RNA) and otherwise interfering (e.g. "decoy") oligonucleotides, oligoribonucleotides, and modified oligonucleotides are gaining overhelming popularity for interference in various steps leading from DNA transcription to mRNA translation. Such regulatory interference can be harnesses for therapeutic effects against many diseases and viral infections. Production of viral proteins can be inhibited by oligonucleotides that are complimentary to portions of mRNA for that protein (i.e.antisense). Other regulatory mechanisms of viruses, such as HIV, are also open to interference with the use of complimentary (i.e. antisense), or decoy (i.e. sense) oligonucleotides. Oligonucleotides for therapy have several advantages. These include the extremely high specificity and the ease of design based on Watson-Crick base pairing. The high association constants imply a strong duplex formation and thus effectiveness at low concentrations.

An ideal therapeutic agent should be (a) specific for the target, (b) selective for the target (i.e. minimum nonspecific effects), (c) non-toxic to the host, with a large therapeutic window, (d) effective at low concentrations, and (e) effective at eliminating the pathogen, rather than merely reducing the pathogen level, or similarly a disease condition.

The criteria needed for ASOs for therapy are (i) the ASOs must be stable to degradation *in vivo*, (ii) the ASOs must be efficiently taken up by the cells, (iii) the ASOs must be retained by the cells, (iv) the ASOs must effectively interact with the target, (v) the ASOs should not non-specifically interact with other cellular factors, (vi) the cost of production should be low, (vii) the ASOs should have low toxicity, immunogenicity, mutagenicity, and should have a large therapeutic window. In addition, an ASO that allows RNaseH activity upon binding to its target has a significant advantage as antisense to mRNA, since the mRNA in the mRNA-ASO hybrid may be hydrolyzed by RNaseH, thereby destroying the mRNA, and leasing the ASO, thus creating a catalytic cycle. This is especially the case in many viral infections, such as HIV, since the reverse transcriptase which is localized primarily in the cytoplasm itself has RNaseH activity.

ChemGenes produces a number of phosphoramidites for the synthesis of antisense oligonucleotides, among them the most noteworthy being the 2'-O-Methyl-ribonucleoside phosphoramidites. The 2'-O-Methyl-ribonucleoside containing oligonucleotides possesses many useful antisense properties.

ANTISENSE PRODUCTS

THE ERA OF ANTISENSE PHARMACOLOGY HAS BEGUN

REVOLUTION IN PHARMACOLOGY & IN THE TREATMENT OF HUMAN DISEASE

THE OLIGOTHERAPEUTIC EXPLOSION IS EXPECTED TO OCCUR SINCE THE APPROVAL OF THE FIRST NDA ON A SYSTEMIC ANTISENSE DRUG TO ISIS PHARMACEUTICALS HAS BEEN APPROVED.

ANTISENSE TECHNOLOGY BASED ON 2'-OMe RNA IS A UNIQUE CONCEPT TO PRODUCE THERAPEUTIC DRUGS

They Hybridize with Natural Targets leading to Diagnostic & Therapeutic Applications

UNMODIFIED OLIGO

POOR UPTAKE -Molecule too big
-Highly charged
DEGRADATION BY NUCLEASES
LESS SPECIFICITY
LOWER T_m

2'-OMe MODIFIED SYNTHETIC OLIGO

LIPOPHILIC, AMPIPHILIC
NUCLEASE RESISTANT
GREATER SPECIFICITY, REACTS RAPIDLY
HIGHER T_m
COMBINATION OF PHOSPHOROTHIOATE & PHOSPHODIESTER REGENERATES RNaseH ACTIVITY

SYNTHETIC ANTISENSE OLIGO (2'-OME MODIFIED) DESIGNED TO:
PERMEATE CELLS
↓
BIND RNA TARGET
↓
INACTIVATE TARGET

Biological Properties of 2'-O-Methyl RNA Molecules

- ★ 2'-O-Methyl oligonucleotides have been used as chimeric oligomers with DNA-oligomers for site directed cleavage of RNA with RNase H (Refs 1,2).
- ★ 2'-O-Methyl oligonucleotides are more stable against several nucleases as compared to the deoxy and ribo type of oligomers. Therefore, the 2'-O-Methyl oligonucleotides are less susceptible to several nucleases (Ref 3).
- ★ The use of 2'-O-Methyl and mixed phosphorothioates results in an inhibitory effect against HIV induced cytopathic effects and expressions of the virus specific antigens in cultures MT-4 cells. The anti-viral activity seems to be strongly concerned with the resistance to one or the other kind of deoxynucleases (Ref 4).
- ★ 2'-O-Methyl oligoribonucleotides form stable hetero-duplexes with the complimentary RNA. The hybrid formed has a high, or a higher T_m than the corresponding DNA sequence (Ref 1).
- ★ 2'-O-Methyl ribonucleotides have been used as valuable antisense probes for studying pre-mRNA splicing and the structures of splicosomes (Refs 5,6).
- ★ The 2'-O-Methylethers of common ribonucleosdes have been found as minor components of RNA (Refs 7,8).
- ★ A number of biotechnology oriented companies in the U.S. are currently involved in the development of DNA-based diagnos tic and therapeutic products, using 2'-O-Methyl oligonucleotide sequences (Ref 9), such as GEM^{R}132 being developed for HCMV treatment (Ref.10.)
- ★ Antisense oligonucleotides have inhibited several gene functions in mammalian cell lines such as myc, bcl-2 (relevant to lymphomas), and erb-B2 (relevant to breast cancer).

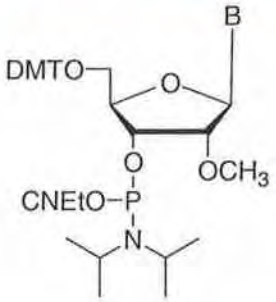
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7. R.H. Hall, "The Modified Nucleosides in Nucleic Acids", Columbia University Press, New York, NY., (1971)
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10. J. Michael Grindel, XII International Roundtable, Nucleosides, Nucleotides & Their Biological Applications, La Jolla, CA, Sep 15-19,1996, Abstract 0850

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ANTISENSE PRODUCTS (Cont.)

5'-DMT-2'-OMe Ribonucleoside CED Phosphoramidite**



B	Cat #
bzA	ANP-5751
bzC	ANP-5752
ibuG	ANP-5753
U	ANP-5754

Catalog #	Product	Prices $/250mg	$/500mg	$/1.0gm
ANP-5751	2'-OMe-ribo Adenosine (N-bz) phosphoramidite F.W.: 887.941	115.00	230.00	450.00
ANP-5752	2'-OMe-ribo Cytidine (N-bz) phosphoramidite FW.: 863.912	115.00	230.00	450.00
ANP-5753	2'-OMe-ribo Guanosine (N-ibu) phosphoramidite F.W.: 869.927	115.00	230.00	450.00
ANP-5754	2'-OMe-ribo Uridine phosphoramidite F.W.: 760.795	115.00	230.00	450.00
ANP-5755	1gm KIT (250mg each of the above 4 products): $445.00			

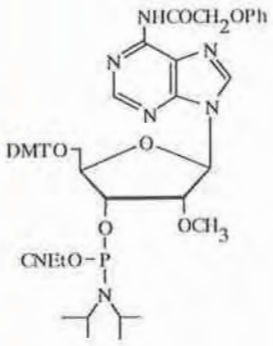
For 5'-DMT-2'-OMe Ribonucleoside on CPG Columns, see page 78
For 5'-DMT-2'-OMe Ribonucleoside on CPG Support, see page 110
5µmole, 10µmole, and 15µmole columns are also available, please inquire.

** **US Patent Number 5,214,135**

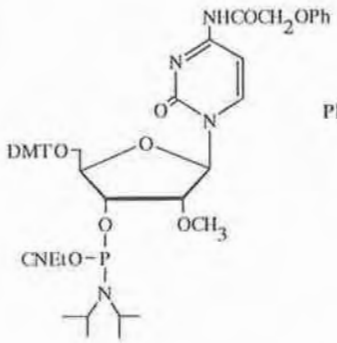
ANTISENSE PRODUCTS (Cont.)

N-PAC-5'-DMT-2'-OMe-Ribonucleoside CED Phosphoramidite

(For Synthesis of Sensitive RNA's/ Chimeras Carrying-2'-OMe Monomer Units)



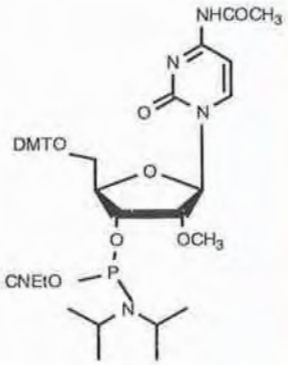
ANP6751
PAC Adenosine



ANP6752
PAC Cytidine



ANP6753
PAC Guanosine



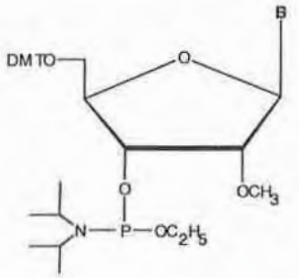
ANP-6756
Ac-Cytidine

Catalog #	Product	Prices $/250mg	$/500mg	$/1.0gm
ANP-6751	N-PAC-2'-OMe-ribo Adenosine phosphoramidite F.W.: 917.967	175.00	350.00	680.00
ANP-6752	N-PAC-2'-OMe-ribo Cytidine phosphoramidite F.W.: 893.938	175.00	350.00	680.00
ANP-6753	N-PAC-2'-OMe-ribo Guanosine phosphoramidite F.W.: 933.967	175.00	350.00	680.00
ANP-5754	2'-OMe-ribo Uridine phosphoramidite F.W.: 760.795	115.00	230.00	450.00
ANP-6754	1gm KIT (250mg each of the above 4 products):		$625.00	
ANP-6756	N-Acetyl-2'-OMe-ribo cytidine phosphoramidite F.W.: 801.838	175.00	350.00	680.00

ANTISENSE PRODUCTS (Cont.)

5'-DMT-2'-OMe-Ribonucleoside p-Ethoxy Phosphoramidite

(For synthesis of Neutral Charge 2'-OMe p-Ethoxy Oligomers)



B	Cat. #
bzA	ANP7221
bzC	ANP7222
ibuG	ANP7223
U	ANP7224

Catalog #	Product	Prices $/250mg	$/500mg
ANP-7221	2'-OMe-ribo Adenosine (N-bz), p-ethoxy phosphoramidite F.W.: 862.929	175.00	340.00
ANP-7222	2'-OMe-ribo Cytidine (N-bz), p-ethoxy phosphoramidite F.W.: 838.900	175.00	340.00
ANP-7223	2'-OMe-ribo Guanosine (N-ibu), p-ethoxy phosphoramidite F.W.: 844.915	175.00	340.00
ANP-7224	2'-OMe-ribo Uridine, p-ethoxy phosphoramidite F.W.: 735.783	175.00	340.00
ANP-7225	1gm KIT (250mg each of the above 4 products): $690.00		

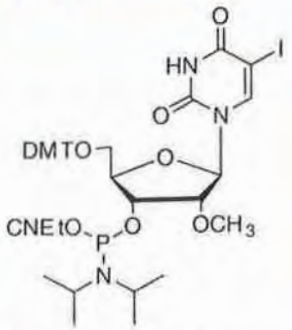
APPLICATIONS:

For the synthesis of DNA/RNA with neutral charge instead of negatively charged phosphate back bone, this group not only provides neutral charge but imparts lipophilic character to the synthetic DNA. It is a useful product for the development of delivery of DNA molecules into cells. With the already established usefulness of 2'-OMe RNA, additional backbone modification to the phosphate neutral charge would provide valuable products in the field of antisense therapeutics.

ANTISENSE PRODUCTS (Cont.)

(Modified Bases-2'-OMethyl-Phosphoramidite)

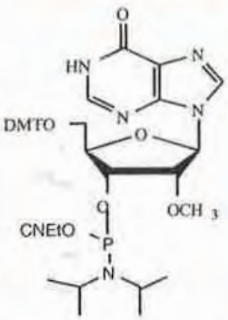
5 -Iodo-2' OMethyl RiboUridine Phosphoramidite



Catalog #: ANP-5759
F.W: 886.71
Prices $: 150.00/250 mg.
300.00/500 mg.
580.00/ 1 gm.

For Corresponding CPG columns, see page 80

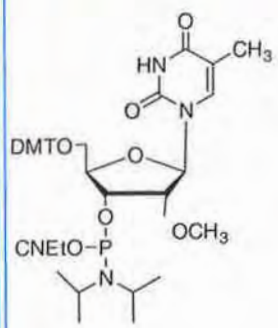
2'- OMethyl Ribo Inosine Phosphoramidite



Catalog #: ANP-5758
F.W: 785.1
Prices $: 150.00/250 mg.
280.00/ 500 mg.
550.00/ 1 gm.

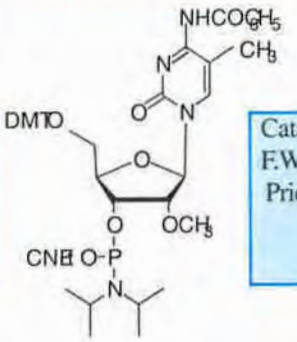
For Corresponding CPG columns, see page 80

Ribo Thymidine 2' OMethyl Phosphoramidite



Catalog #: ANP-5600
F.W: 774.84
Prices $: 125.00/ 250 mg.
220.00/ 500 mg.
410.00/ 1 gm.

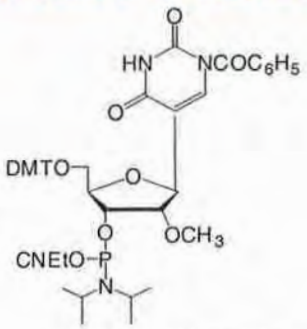
5 Methyl Cytidine 2'-OMethyl Phosphoramidite



Catalog #: ANP-6554
F.W: 878.6
Prices $: 125.00/250 mg.
220.00/500 mg.
410.00/ 1 gm.

For Corresponding CPG columns, see page 80

PseudoUridine 2'-OMethyl Phosphoramidite



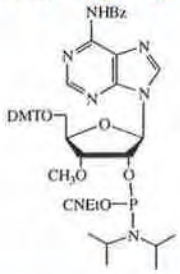
Catalog #: ANP-9310
F.W: 865.18
Prices $: 365.00/ 100µmole

For Corresponding CPG columns, see page 80

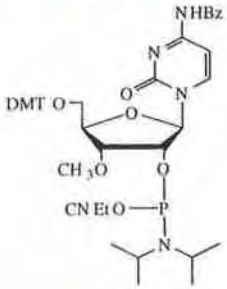
ANTISENSE PRODUCTS (Cont.)

3'-O-Methyl Ribonucleoside Phsphoramidites

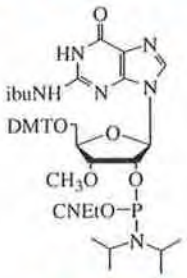
ANP-2901 5'-DMT-3'-(O-Methyl) Adenosine(bz) 2'-phosphoramidite



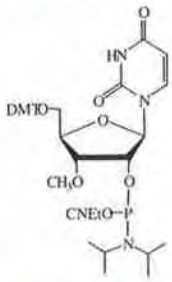
ANP-2902 5'-DMT-3'-(O-Methyl)- Cytidine(bz) 2'-phosphoramidite



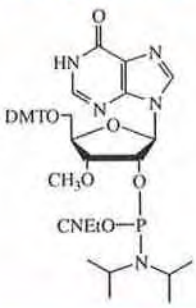
ANP-2903 5'-DMT-3'-(O-Methyl)- Guanosine 2'-phosphoramidite



ANP-2904 5'-DMT- 3'-(O-Methyl)- Uridine 2'-Phosphoramidite



ANP-2905 5'-DMT-3'-(O-Methyl)-Inosine 2'-phosphoramidite



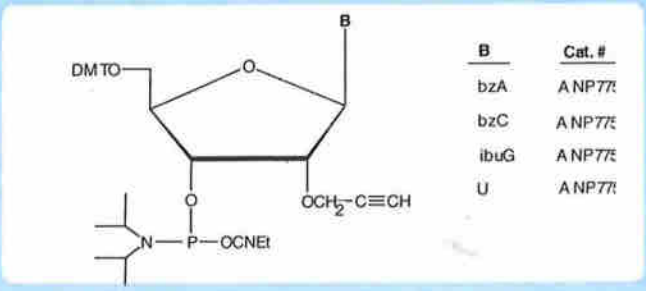
Catalog #	Name	Price 100mg	0.5gm	1.0gm
ANP-2901	5'-DMT-3'-(O-Methyl)-Adenosine 2'-phosphoramidite F.W: 887.96	175.00	340.00	625.00
ANP-2902	5'-DMT-3'-(O-Methyl)-Cytidine 2'-phosphoramidite F.W: 863.93	175.00	340.00	625.00
ANP-2903	5'-DMT-3'-(O-Methyl)-Guanosine 2'-phosphoramidite F.W: 869.94	175.00	340.00	625.00
ANP-2904	5'-DMT-3'-(O-Methyl)-Uridine 2'-phosphoramidite F.W: 760.81	175.00	340.00	625.00
ANP-2905	5'-DMT-3'-(O-Methyl)-Inosine 2'-phosphoramidite F.W: 784.84	175.00	340.00	625.00

For Corresponding CPG columns, see page 79

ANTISENSE PRODUCTS (Cont.)

5'-DMT-2'-O-Propargyl-Ribonucleoside CED Phosphoramidite

(For Synthesis of Novel 2'-O-Propargyl Modification for Development of Antisense Etc.)



B	Cat. #
bzA	ANP77
bzC	ANP77
ibuG	ANP77
U	ANP77

Catalog #	Product	Prices $/100µm	$/200µm
ANP-7751	2'-O-propargyl-ribo Adenosine (N-bz) phosphoramidite F.W.: 911.961	185.00	360.00
ANP-7752	2'-O-propargyl-ribo Cytidine (N-bz) phosphoramidite F.W.: 887.932	185.00	360.00
ANP-7753	2'-O-propargyl-ribo Guanosine (N-ibu) phosphoramidite F.W.: 893.947	185.00	360.00
ANP-7754	2'-O-propargyl-ribo Uridine phosphoramidite F.W.: 784.815	185.00	360.00
ANP-7755	400µm KIT (100µm each of the above 4 products): $710.00		

PREPARED COLUMNS

Catalog #	Name	Price ($) Pack of 4 Columns 1 µmol	0.2µmol
NSS-0831(2,3,4) -05A(C,G,U)1 (0.2CL)	2'-O-propargyl-ribo A(N-bz), C(N-bz), G(N-ibu) U, lcaa CPG (500Å)	95.00	80.00

SOLID SUPPORTS

Catalog #	Name	Price ($) 100mg.
NSS-0891(2,3,4) -05A(C,G,U)	2'-O-propargyl-ribo A(N-bz), C(N-bz), G(N-ibu), U, lcaa CPG (500Å)	65.00(each product)

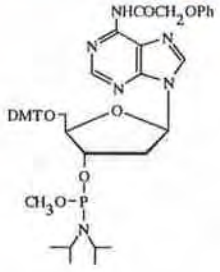
APPLICATIONS:

This product line, of 2'-O-modification, is a recent addition for the development of antisense and other biologically & biochemically useful DNA/RNA molecules. 2'-O-modification generally introduces RNase H-resistance activity. The propargyl group by virtue of it's triple bond should have additional binding capabilities with many macromolecules.

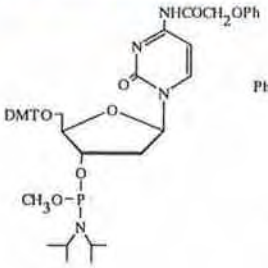
ANTISENSE PRODUCTS (Cont.)

N-PAC-5'-DMT-Deoxynucleoside-N,N-Diisopropyl p-Methoxy Phosphoramidite

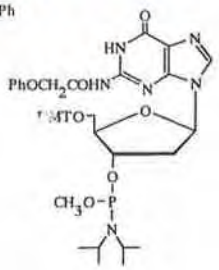
(For Synthesis of Neutral Charge p-Methoxy DNA Oligomers)



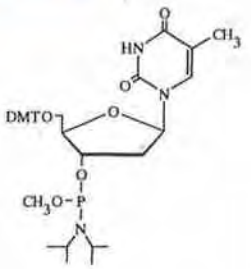
ANP5531
PAC Adenosine



ANP5532
PAC Cytidine



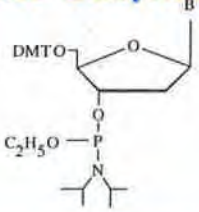
ANP5533
PAC Guanosine



ANP3764
Thymidine

Catalog #	Product	Prices $/500mg	$/gm
ANP-5531	N-PAC deoxy Adenosine, p-methoxy phosphoramidite F.W.: 848.903	40.00	72.00
ANP-5532	N-PAC deoxy Cytidine, p-methoxy phosphoramidite F.W.: 824.874	40.00	72.00
ANP-5533	N-PAC deoxy Guanosine, p-methoxy phosphoramidite F.W.: 864.903	40.00	72.00
ANP-3764	Thymidine, p-methoxy phosphoramidite F.W.: 705.761	20.00	32.00
ANP-5535	4gm KIT (1gm each of the above 4 products): $105.00		

5'-DMT -Deoxynucleoside-N,N-Diisopropyl p-Ethoxy Phosphoramidite



B	Catalog #s	B	Catalog #s
A(n-bz)	ANP-6541	A(N-PAC)	ANP-5541
C(n-bz)	ANP-6542	C(N-PAC)	ANP-5542
G(n-ibu)	ANP-6543	G(N-PAC	ANP-5543
T	ANP-6544		

Catalog #	Name	Price ($) 500mg	1gm
ANP-6541(2,3,4)	deoxy A(N-bz), C(N-bz), G(N-ibu), T p-ethoxy phosphoramidites	16.00	30.00
ANP-6545	4gm KIT (1gm each of ANP-6541-6544)		110.00
ANP-5541(2,3)	N-PAC deoxy A, C, G p-ethoxy phosphoramidites	26.00	42.00
ANP-5545	4gm KIT (1gm each of ANP-5541-5543 &6544)		155.00

APPLICATIONS:

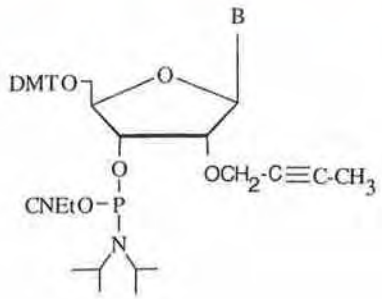
For the synthesis of neutral charge and lipophilic DNA, carrying the p-methoxy group instead of negative phosphate charges. These phosphoramidites have been developed to produce oligonucleotides with modified and neutral phosphate backbones.

ANTISENSE PRODUCTS (Cont.)

5'-DMT-2'-O-Butyne-Ribonucleoside Phosphoramidites

APPLICATIONS

The 2'-butyne modified ribonucleoside phosphoramidites have been developed by ChemGenes in order to optimize antisense properties of oligonucleotides.



B	Catalog #s
bzA	ANP-7621
bzC	ANP-7622
ibuG	ANP-7623
U	ANP-7624

ORDERING INFORMATION

Phosphoramidites

Catalog #	Name	Price ($) 100µm	250mg
ANP-7621(2,3,4)	2'-O-butyne-ribo A(N-bz), C(N-bz), G(ibu), U phosphoramidites	185.00	360.00

Prepacked Columns

Catalog #	Name	Price ($) (Pack of 4 Columns) 1µmol	0.2µmol
NSS-7621(2,3,4)-5A(C,G,U)1(0.2)CL	500Å 2'-O-butyne-ribo A(N-bz), C(N-bz), G(N-ibu), U lcaa CPG	95.00	80.00

Solid Supports

Catalog #	Name	Price ($) 100 mg.
NSS-0961(2,3,4)-5A(C,G,U)1(0.2)	500Å 2'-O-butyne-Ribonucleoside A(N-bz), C(N-bz),G(N-ibu), U lcaa CPG	65.00 (each product)

Our initial observations on the 2'-O-propargyl ribonucleoside phosphoramidites (catalog #: ANP-7751-4) have indicated that they do possess increased stability towards nuclease digestion. The oligonucleotides containing the 2'-O-propargyl modification also have the capability to interact with certain enzymes which recognize the DNA-RNA or RNA-RNA enzymes.

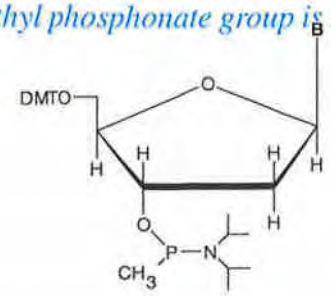
ANTISENSE PRODUCTS (Cont.)

METHYL PHOSPHONAMIDITES

5'-DMT-Deoxynucleoside-3'-N,N-Diisopropylamino p-methyl phosphonamidite

(For the Synthesis of Phosphate Modified DNA)

The internucleotide methyl phosphonate group is responsible for neutral DNA molecules



B	Cat. #
bzA	ANP 7551
bzC	ANP 7552
ibuG	ANP 7553
T	ANP 7554
ibuC	ANP 7556
U	ANP 7557
I	ANP 7558

Catalog #	Product	Prices $/250mg	$/500mg
ANP-7551	deoxy Adenosine (N-bz), methyl phosphonamidite F.W.: 802.883	45.00	90.00
ANP-7552	deoxy Cytidine (N-bz), methyl phosphonamidite F.W.: 778.854	45.00	90.00
ANP-7553	deoxy Guanosine (N-ibu), methyl phosphonamidite F.W.: 784.869	45.00	90.00
ANP-7554	Thymidine, methyl phosphonamidite F.W.: 689.767	45.00	90.00
ANP-7555	2gm KIT (500mg each of the above 4 products):		$320.00
ANP-7556	deoxy Cytidine (N-ibu), methyl phosphonamidite F.W.: 744.840	45.00	90.00
ANP-7557	deoxy Uridine, methyl phosphonamidite F.W.: 675.737	45.00	90.00
ANP-7558	deoxy Inosine, methyl phosphonamidite F.W.: 699.767	45.00	90.00

ANTISENSE PREPACKED COLUMNS

Applied Biosystems, Expedite, & Pharmacia DNA & RNA Synthesizers
2'-O-Methyl-RNA Synthesis Solid Support Columns, Standard Protection

Size of CPG lcaa (long chain alkyl amino)
500 Ångstrom Pore Size

Scale of synthesis
1.0 µmole Scale
0.5 µmole Scale
0.2 µmole Scale

Please inquire for other loadings and CPG sizes.

Catalog #	Product	Pack of 4 Columns	Price$
NSS-4101-5A1CL	500Å 2'-OMe-ribo Adenosine (N-bz) lcaa CPG	1.0µmole	75.00
NSS-4102-5C1CL	500Å 2'-OMe-ribo Cytidine (N-bz) lcaa CPG	1.0µmole	75.00
NSS-4103-5G1CL	500Å 2'-OMe-ribo Guanosine (N-ibu) lcaa CPG	1.0µmole	75.00
NSS-4104-5U1CL	500Å 2'-OMe-ribo Uridine lcaa CPG	1.0µmole	75.00
NSS-4201-5A05CL	500Å 2'-OMe-ribo Adenosine (N-bz) lcaa CPG	0.5µmole	65.00
NSS-4202-5C05CL	500Å 2'-OMe-ribo Cytidine (N-bz) lcaa CPG	0.5µmole	65.00
NSS-4203-5G05CL	500Å 2'-OMe-ribo Guanosine (N-ibu) lcaa CPG	0.5µmole	65.00
NSS-4204-5U05CL	500Å 2'-OMe-ribo Uridine lcaa CPG	0.5µmole	65.00
NSS-4301-5A02CL	500Å 2'-OMe-ribo Adenosine (N-bz) lcaa CPG	0.2µmole	60.00
NSS-4302-5C02CL	500Å 2'-OMe-ribo Cytidine (N-bz) lcaa CPG	0.2µmole	60.00
NSS-4303-5G02CL	500Å 2'-OMe-ribo Guanosine (N-ibu) lcaa CPG	0.2µmole	60.00
NSS-4304-5U02CL	500Å 2'-OMe-ribo Uridine lcaa CPG	0.2µmole	60.00

2'-O-Methyl-RNA Synthesis Solid Support Columns, N-PAC Protection

Size of CPG lcaa (long chain alkyl amino)
500 Ångstrom Pore Size

Scale of synthesis
1.0 µmole Scale
0.5 µmole Scale
0.2 µmole Scale

Please inquire for other loadings and CPG sizes.

Catalog #	Product	Pack of 4 Columns	Price$
NSS-P4101-5A1CL	500Å 2'-OMe-ribo Adenosine (N-PAC) lcaa CPG	1.0µmole	75.00
NSS-P4102-5C1CL	500Å 2'-OMe-ribo Cytidine (N-PAC) lcaa CPG	1.0µmole	75.00
NSS-P4103-5G1CL	500Å 2'-OMe-ribo Guanosine (N-PAC) lcaa CPG	1.0µmole	75.00
NSS-4104-5U1CL	500Å 2'-OMe-ribo Uridine lcaa CPG	1.0µmole	75.00
NSS-P4201-5A05CL	500Å 2'-OMe-ribo Adenosine (N-PAC) lcaa CPG	0.5µmole	65.00
NSS-P4202-5C05CL	500Å 2'-OMe-ribo Cytidine (N-PAC) lcaa CPG	0.5µmole	65.00
NSS-P4203-5G05CL	500Å 2'-OMe-ribo Guanosine (N-PAC) lcaa CPG	0.5µmole	65.00
NSS-4204-5U05CL	500Å 2'-OMe-ribo Uridine lcaa CPG	0.5µmole	65.00
NSS-P4301-5A02CL	500Å 2'-OMe-ribo Adenosine (N-PAC) lcaa CPG	0.2µmole	60.00
NSS-P4302-5C02CL	500Å 2'-OMe-ribo Cytidine (N-PAC) lcaa CPG	0.2µmole	60.00
NSS-P4303-5G02CL	500Å 2'-OMe-ribo Guanosine (N-PAC) lcaa CPG	0.2µmole	60.00
NSS-4304-5U02CL	500Å 2'-OMe-ribo Uridine lcaa CPG	0.2µmole	60.00

For Corresponding Unpacked CPG Supports, Please See Page 109-110

ANTISENSE PREPACKED COLUMNS (Cont.)

Applied Biosystems, Expedite, & Pharmacia DNA & RNA Synthesizers
3'-O-Methyl-RNA Synthesis Solid Support Columns, Standard Protection

Size of CPG lcaa (long chain alkyl amino)
500 Ångstrom Pore Size

Scale of synthesis
1.0 µmole Scale
0.5 µmole Scale
0.2 µmole Scale
Please inquire for other loadings and CPG sizes.

Catalog #	Product	Pack of 4 Columns	Price$
NSS-82101-5A1CL	500Å 3'-OMe-ribo Adenosine (N-bz) lcaa CPG	1.0µmole	120.00
NSS-82102-5C1CL	500Å 3'-OMe-ribo Cytidine (N-bz) lcaa CPG	1.0µmole	120.00
NSS-82103-5G1CL	500Å 3'-OMe-ribo Guanosine (N-ibu) lcaa CPG	1.0µmole	120.00
NSS-82104-5U1CL	500Å 3'-OMe-ribo Uridine lcaa CPG	1.0µmole	120.00
NSS-82105-5I1CL	500Å 3'-OMe-ribo Inosine lcaa CPG	1.0µmole	120.00
NSS-82201-5A05CL	500Å 3'-OMe-ribo Adenosine (N-bz) lcaa CPG	0.5µmole	110.00
NSS-82202-5C05CL	500Å 3'-OMe-ribo Cytidine (N-bz) lcaa CPG	0.5µmole	110.00
NSS-82203-5G05CL	500Å 3'-OMe-ribo Guanosine (N-ibu) lcaa CPG	0.5µmole	110.00
NSS-82204-5U05CL	500Å 3'-OMe-ribo Uridine lcaa CPG	0.5µmole	110.00
NSS-82205-5I05CL	500Å 3'-OMe-ribo Insoine lcaa CPG	0.5µmole	110.00
NSS-82301-5A02CL	500Å 3'-OMe-ribo Adenosine (N-bz) lcaa CPG	0.2µmole	95.00
NSS-82302-5C02CL	500Å 3'-OMe-ribo Cytidine (N-bz) lcaa CPG	0.2µmole	95.00
NSS-82303-5G02CL	500Å 3'-OMe-ribo Guanosine (N-ibu) lcaa CPG	0.2µmole	95.00
NSS-82304-5U02CL	500Å 3'-OMe-ribo Uridine lcaa CPG	0.2µmole	95.00
NSS-82305-5I02CL	500Å 3'-OMe-ribo Inosine lcaa CPG	0.2µmole	95.00

3'-O-Methyl-RNA Synthesis Solid Support Columns, N-PAC Protection

Size of CPG lcaa (long chain alkyl amino)
500 Ångstrom Pore Size

Scale of synthesis
1.0 µmole Scale
0.5 µmole Scale
0.2 µmole Scale
Please inquire for other loadings and CPG sizes.

Catalog #	Product	Pack of 4 Columns	Price$
NSS-P82101-5A1CL	500Å 3'-OMe-ribo Adenosine (N-PAC) lcaa CPG	1.0µmole	126.00
NSS-P82102-5C1CL	500Å 3'-OMe-ribo Cytidine (N-PAC) lcaa CPG	1.0µmole	126.00
NSS-P82103-5G1CL	500Å 3'-OMe-ribo Guanosine (N-PAC) lcaa CPG	1.0µmole	126.00
NSS-82104-5U1CL	500Å 3'-OMe-ribo Uridine lcaa CPG	1.0µmole	120.00
NSS-82105-5I1CL	500Å 3'-OMe-ribo Insoine lcaa CPG	1.0µmole	120.00
NSS-P82201-5A05CL	500Å 3'-OMe-ribo Adenosine (N-PAC) lcaa CPG	0.5µmole	118.00
NSS-P82202-5C05CL	500Å 3'-OMe-ribo Cytidine (N-PAC) lcaa CPG	0.5µmole	118.00
NSS-P82203-5G05CL	500Å 3'-OMe-ribo Guanosine (N-PAC) lcaa CPG	0.5µmole	118.00
NSS-82204-5U05CL	500Å 3'-OMe-ribo Uridine lcaa CPG	0.5µmole	110.00
NSS-82205-5I05CL	500Å 3'-OMe-ribo Inosine lcaa CPG	0.5µmole	110.00
NSS-82301-5A02CL	500Å 3'-OMe-ribo Adenosine (N-PAC) lcaa CPG	0.2µmole	105.00
NSS-P82302-5C02CL	500Å 3'-OMe-ribo Cytidine (N-PAC) lcaa CPG	0.2µmole	105.00
NSS-P82303-5G02CL	500Å 3'-OMe-ribo Guanosine (N-PAC) lcaa CPG	0.2µmole	105.00
NSS-82304-5U02CL	500Å 3'-OMe-ribo Uridine lcaa CPG	0.2µmole	95.00
NSS-82305-5I02CL	500Å 3'-OMe-ribo Inosine lcaa CPG	0.2µmole	95.00

For Corresponding Unpacked CPG Supports, Please See Page 111-112

ANTISENSE PREPACKED COLUMNS (Cont.)

Applied Biosystems, Expedite, & Pharmacia DNA & RNA Synthesizers
2'-O-Methyl-RNA Synthesis Solid Columns, Standard Protection

Size of CPG lcaa (long chain alkyl amino)
500 Ångstrom Pore Size

Scale of synthesis
1.0 µmole Scale
0.5 µmole Scale
0.2 µmole Scale

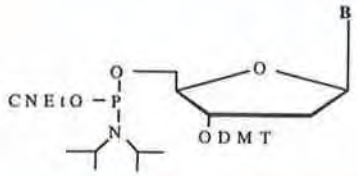
Please inquire for other loadings and CPG sizes.

Catalog #	Product	Pack of 4 Columns	Price$
NSS-90101-5U1CL	500Å 5-Iodo 2'-OMe-ribo Uridine lcaa CPG	1.0µmole	110.00
NSS-90102-5I1CL	500Å 2'-OMe-ribo Insoine lcaa CPG	1.0µmole	110.00
NSS-90103-5C1CL	500Å 5-Methyl 2'-OMe-ribo Cytidine lcaa CPG	1.0µmole	110.00
NSS-90104-5U1CL	500Å Pseudo Uridine 2'-OMe-ribo Uridine lcaa CPG	1.0µmole	110.00
NSS-90101-5U05CL	500Å 5-Iodo 2'-OMe-ribo Uridine lcaa CPG	0.5µmole	85.00
NSS-90102-5I05CL	500Å 2'-OMe-ribo Insoine lcaa CPG	0.5µmole	85.00
NSS-90103-5C05CL	500Å 5-Methyl 2'-OMe-ribo Cytidine lcaa CPG	0.5µmole	85.00
NSS-90104-5U05CL	500Å Pseudo Uridine 2'-OMe-ribo Uridine lcaa CPG	0.5µmole	85.00
NSS-90101-5U02CL	500Å 5-Iodo 2'-OMe-ribo Uridine lcaa CPG	0.2µmole	75.00
NSS-90102-5I02CL	500Å 2'-OMe-ribo Insoine lcaa CPG	0.2µmole	75.00
NSS-90103-5C02CL	500Å 5-Methyl 2'-OMe-ribo Cytidine lcaa CPG	0.2µmole	75.00
NSS-90104-5U02CL	500Å Pseudo Uridine 2'-OMe-ribo Uridine lcaa CPG	0.20µmole	75.00

For Corresponding Unpacked CPG Supports, Please See Page 111

5'-PHOSPHORAMIDITES WITH 3'-DMT-PROTECTION OF DEOXY NUCLEOSIDES

Synthesis of 3'-3' linked oligonucleosides and oligo synthesis from left to right



B	Cat. #
bzA	ANP4671
bzC	ANP4672
ibuG	ANP4673
T	ANP4674

deoxy Adenosine-5'-CNEt Phosphoramidite
F.W.: 857.915

Catalog #	Qty.	Price$
ANP-4671	250mg	55.00
	500mg	85.00
	1.0gm	160.00

deoxy Cytidine-5'-CNEt Phosphoramidite
F.W.: 833.886

Catalog #	Qty.	Price$
ANP-4672	250mg	55.00
	500mg	85.00
	1.0gm	160.00

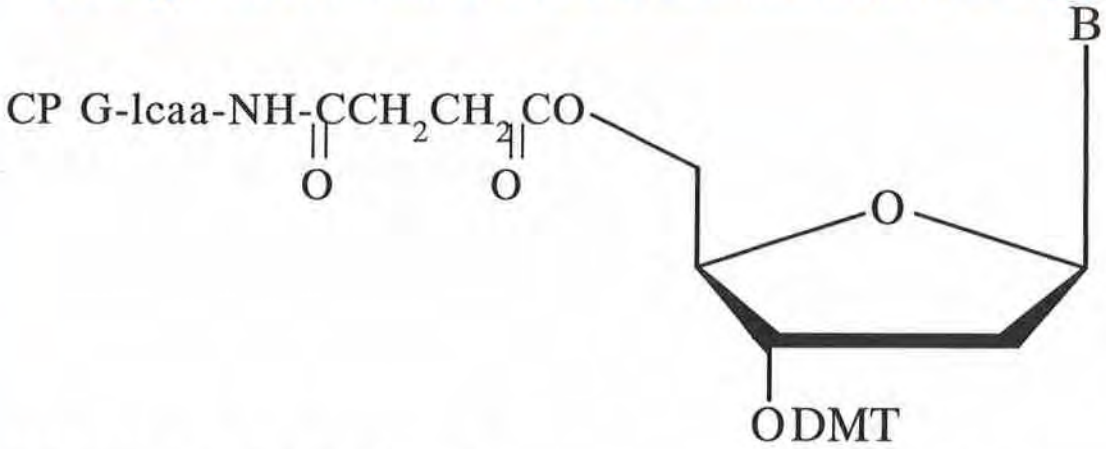
deoxy Guanosine-5'-CNEt Phosphoramidite
F.W.: 839.901

Catalog #	Qty.	Price$
ANP-4673	250mg	55.00
	500mg	85.00
	1.0gm	160.00

Thymidine-5'-CNEt Phosphoramidite
F.W.: 744.799

Catalog #	Qty.	Price$
ANP-4674	250mg	55.00
	500mg	85.00
	1.0gm	160.00

CPG-Supports & Columns with 3'-DMT for Chain Extension from Left to Right



Size of CPG lcaa (long chain alkyl amino)
500 Ångstrom Pore Size

Scale of synthesis
0.2 µmole Scale

Please inquire for other loadings and CPG sizes.

Catalog #	Product	Qty.	Price$
NSS-3351-CL	0.2µmole-500Å-3'-DMT-deoxy Adenosine (N-bz) lcaa CPG	pack of 4 columns	100.00
NSS-3351		100mg	45.00
NSS-3352-CL	0.2µmole-500Å-3'-DMT deoxy Cytidine (N-bz) lcaa CPG	pack of 4 columns	100.00
NSS-3352		100mg	45.00
NSS-3353-CL	0.2µmole-500Å-3'-DMT deoxy Guanosine (N-ibu) lcaa CPG	pack of 4 columns	100.00
NSS-3353		100mg	45.00
NSS-3354-CL	0.2µmole-500Å-3'-DMT Thymidine lcaa CPG	pack of 4 columns	100.00
NSS-3354		100mg	45.00

TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

SOLID SUPPORTS

Oligonucleotide synthesis on various solid supports, such as Controlled Pore Glass (CPG), and Polystyrene has become a routine method in this field. This method offers extensive advantages in terms of elimination of purification steps, speed, as well as linking the operation to a gene-splicing machine for automation.

These solid support materials, in conjunction with partially deprotected mononucleosides in the triester class (FPM group), DNA and RNA Phosphoramidites (ANP group) lead to rapid synthesis of a desired chain length oligomers.

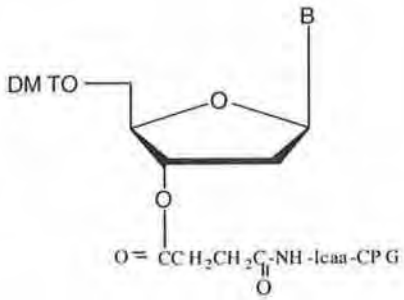
ChemGenes Corporation has been supplying the following products commercially with the utmost customer satisfaction and confidence:

(A) Deoxy Nucleosides linked to solid support

(B) Ribo Nucleosides linked to solid support

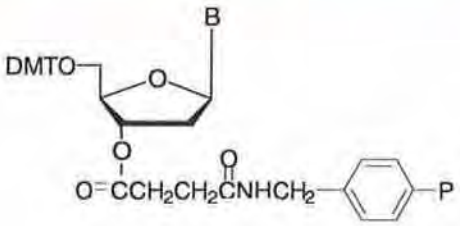
These solid supports are available as follows:

DMT Protected Deoxynucleosides on lcaa CPG-Support, Standard Protection



B	Cat.#
bzA	NSS 5101
bzC	NSS 5102
ibuG	NSS 5103
T	NSS 5104
I	NSS 5107
dU	NSS 5108
acC	NSS 52012
n-ibuC	NSS 51102
PAC-A	NSS P5101
PAC-C	NSS P5102
PAC-G	NSS P5103

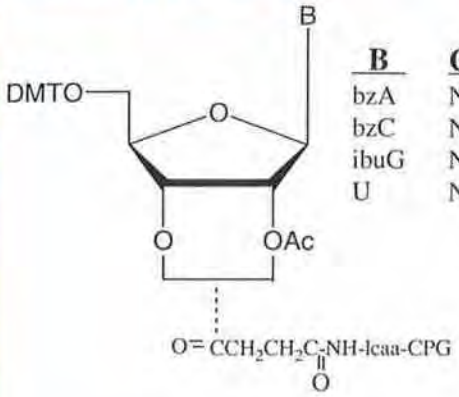
DMT Protected Deoxynucleosides on Polystyrene Support, Standard Protection



B	Cat.#
bzA	NSS 7501-1
bzC	NSS 7502-1
ibuG	NSS 7503-1
T	NSS 7504-1

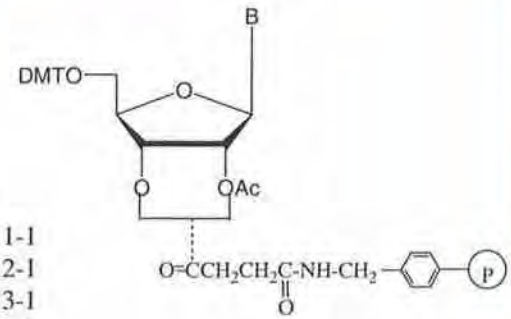
SOLID SUPPORTS (Cont.)

DMT Protected Ribonucleosides 2'/3' OAcetyl on lcaa CPG-Support Standard Protection



B	Cat.#
bzA	NSS 6101
bzC	NSS 6102
ibuG	NSS 6103
U	NSS 6104

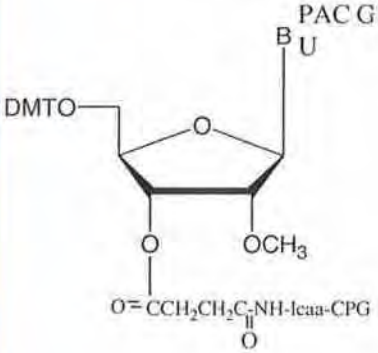
DMT Protected Ribonucleosides 2'/3' OAcetyl on Polystyrene Support, Standard Protection



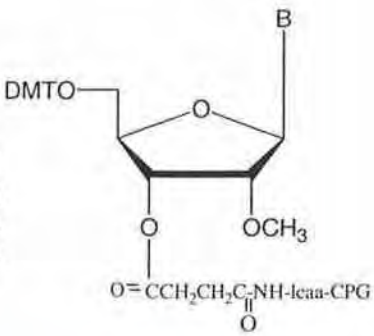
B	Cat.#
bzA	NSS 6111-1
bzC	NSS 6112-1
ibuG	NSS 6113-1
U	NSS 6114-1

DMT Protected Ribonucleoside- 2'-OMe on lcaa CPG-Support, N-PAC Protection

B	Cat.#
PAC A	NSS P7901
PAC C	NSS P7902
PAC G	NSS P7903
U	NSS 7904

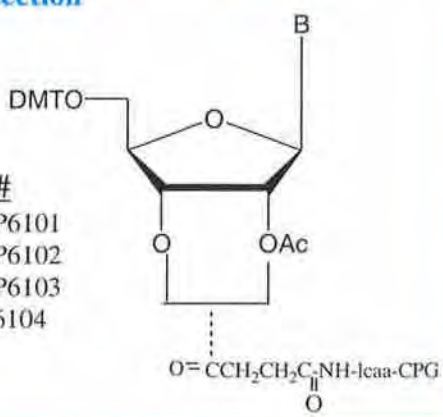


DMT Protected Ribonucleoside- 2'-OMe on lcaa CPG-Support, Standard Protection



B	Cat.#
bzA	NSS 7901
bzC	NSS 7902
ibuG	NSS 7903
U	NSS 7904

DMT Protected Ribonucleosides 2'/3'-OAcetyl on lcaa CPG-Support, N-PAC Protection



B	Cat.#
PAC A	NSS P6101
PAC C	NSS P6102
PAC G	NSS P6103
U	NSS 6104

SOLID SUPPORTS (Cont.)

The CPG's have a C-17 spacer (lcaa) between the succinate and Silyl group. The long chain spacer arm is ≈ 18 Å long. The longer arm facilitates the synthesis of longer oligomers, where steric effects and surface repulsions are problems. The drop in coupling yield during the attachment of 1rst and 2nd phosphoramidite is minimal, and thus the formation of M-1 chain length is negligible.

We are proud that the ChemGenes CPG-Supports have out-performed equivalent products available on the market. All the functional groups available on the derivatized CPG's have been carefully blocked to minimize possibilities of side reactions. The CPG's are available in three pore diameters and each have been functionalized in four different loading levels.

a) Nature of -CPG	Pore Size	Particle Size
	(1) 377 Ångstrom -CPG	80-120 mesh
	(2) 500 Ångstrom -CPG	80-200 mesh
	(3) 1000 Ångstrom -CPG	80-120 mesh
	(4) 2000 Ångstrom -CPG	20-200 mesh

b) Loading levels & SYNTHESIS SCALE of each of the above class

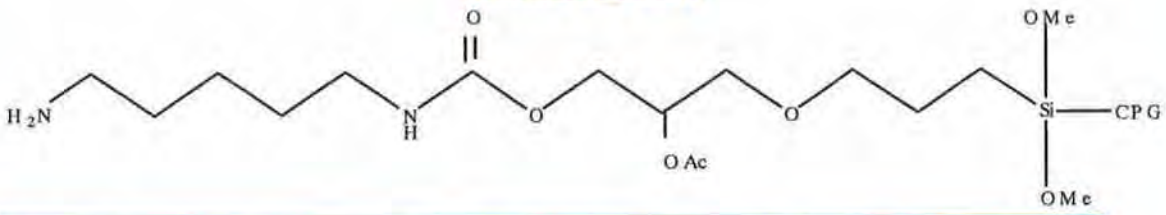
(1) DNA SYNTHESIS AT 0.05µm SCALE with very low loaded (VL).
CPG (≈ 1 .75µm/gm). Suitable for very large length DNA (150-175 mers).

(2) DNA SYNTHESIS AT 0.2µm SCALE with low loaded (L).
CPG (≈ 6-7µm/gm). Most suitable for large length DNA (from 61-100 mers and greater).

(3) DNA SYNTHESIS AT 0.5µm SCALE with medium loaded (M).
CPG (≈ 16-17 µm/gm). Most suitable for medium length (between 30-60 mers) in a fairly good quantity.

(4) DNA SYNTHESIS AT 1.0µm SCALE with high loaded (H).
CPG (≈ 35µm/gm). Most suitable for small length DNA (under 30 mers) in larger quantities.

Amino lcaa CPG:



Catalog #	Product	Prices $/gm	$/5gm	$/10gm
NSS-5100-CPG-N	Amino lcaa Controlled Pore Glass 500Å	45.00	185.00	375.00

Containing free base NH_2 groups, the other functional groups are fully protected.

SOLID SUPPORTS (Cont.)

Deoxynucleoside CPG Solid Supports, Standard Protection

Catalog #	Product	Prices $/100mg	$/gm	$/5gm
NSS-5101-CPG-5VL	deoxy Adenosine (N-bz) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 1.75µm/gm)	14.00	110.00	520.00
NSS-5101-CPG-5L	deoxy Adenosine (N-bz) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 6-7µm/gm)	14.00	110.00	520.00
NSS-5101-CPG-5M	deoxy Adenosine (N-bz) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 16-17µm/gm)	14.00	110.00	520.00
NSS-5101-CPG-5H	deoxy Adenosine (N-bz) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 35µm/gm)	14.00	110.00	520.00
NSS-5101-CPG-10VL	deoxy Adenosine (N-bz) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 1.75µm/gm)	14.00	110.00	520.00
NSS-5101-CPG-10L	deoxy Adenosine (N-bz) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 6-7µm/gm)	14.00	110.00	520.00
NSS-5101-CPG-10M	deoxy Adenosine (N-bz) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 16-17µm/gm)	14.00	110.00	520.00
NSS-5101-CPG-10H	deoxy Adenosine (N-bz) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 35µm/gm)	14.00	110.00	520.00
NSS-5101-CPG-20VL	deoxy Adenosine (N-bz) lcaa (long chain alkyl amino) CPG 2000Å (loading ≈ 1.75µm/gm)	14.00	110.00	520.00
NSS-5101-CPG-20L	deoxy Adenosine (N-bz) lcaa (long chain alkyl amino) CPG 2000Å (loading ≈ 6-7µm/gm)	14.00	110.00	520.00

SOLID SUPPORTS (Cont.)

Deoxynucleoside CPG Solid Supports, Standard Protection

Catalog #	Product	Prices $/100mg	$/gm	$/5gm
NSS-5102-CPG-5VL	deoxy Cytidine (N-bz) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 1.75µm/gm)	14.00	110.00	520.00
NSS-5102-CPG-5L	deoxy Cytidine (N-bz) lcaa (long chain alkyl amino) 500Å (loading ≈ 6-7µm/gm)	14.00	110.00	520.00
NSS-5102-CPG-5M	deoxy Cytidine (N-bz) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 16-17µm/gm)	14.00	110.00	520.00
NSS-5102-CPG-5H	deoxy Cytidine (N-bz) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 35µm/gm)	14.00	110.00	520.00
NSS-5102-CPG-10VL	deoxy Cytidine (N-bz) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 1.75µm/gm)	14.00	110.00	520.00
NSS-5102-CPG-10L	deoxy Cytidine (N-bz) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 6-7µm/gm)	14.00	110.00	520.00
NSS-5102-CPG-10M	deoxy Cytidine (N-bz) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 16-17µm/gm)	14.00	110.00	520.00
NSS-5102-CPG-10H	deoxy Cytidine (N-bz) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 35µm/gm)	14.00	110.00	520.00
NSS-5102-CPG-20VL	deoxy Cytidine (N-bz) lcaa (long chain alkyl amino) CPG 2000Å (loading ≈ 1.75µm/gm)	14.00	110.00	520.00
NSS-5102-CPG-20L	deoxy Cytidine (N-bz) lcaa (long chain alkyl amino) CPG 2000Å (loading ≈ 6-7µm/gm)	14.00	110.00	520.00

SOLID SUPPORTS (Cont.)

Deoxynucleoside CPG Solid Supports, Standard Protection

Catalog #	Product	Prices $/100mg	$/gm	$/5gm
NSS-5103-CPG-5VL	deoxy Guanosine (N-ibu) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 1.75µm/gm)	14.00	110.00	520.00
NSS-5103-CPG-5L	deoxy Guanosine (N-ibu) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 6-7µm/gm)	14.00	110.00	520.00
NSS-5103-CPG-5M	deoxy Guanosine (N-ibu) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 16-17µm/gm)	14.00	110.00	520.00
NSS-5103-CPG-5H	deoxy Guanosine (N-ibu) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 35µm/gm)	14.00	110.00	520.00
NSS-5103-CPG-10VL	deoxy Guanosine (N-ibu) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 1.75µm/gm)	14.00	110.00	520.00
NSS-5103-CPG-10L	deoxy Guanosine (N-ibu) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 6-7µm/gm)	14.00	110.00	520.00
NSS-5103-CPG-10M	deoxy Guanosine (N-ibu) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 16-17µm/gm)	14.00	110.00	520.00
NSS-5103-CPG-10H	deoxy Guanosine (N-ibu) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 35µm/gm)	14.00	110.00	520.00
NSS-5103-CPG-20VL	deoxy Guanosine (N-ibu) lcaa (long chain alkyl amino) CPG 2000Å (loading ≈ 1.75 µm/gm)	14.00	110.00	520.00
NSS-5103-CPG-20L	deoxy Guanosine (N-ibu) lcaa (long chain alkyl amino) CPG 2000Å (loading ≈ 6-7µm/gm)	14.00	110.00	520.00

SOLID SUPPORTS (Cont.)

Deoxynucleoside CPG Solid Supports, Standard Protection

Catalog #	Product	Prices $/100mg	$/gm	$/5gm
NSS-5104-CPG-5VL	Thymidine lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 1.75µm/gm)	14.00	110.00	520.00
NSS-5104-CPG-5L	Thymidine lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 6-7µm/gm)	14.00	110.00	520.00
NSS-5104-CPG-5M	Thymidine lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 16-17µm/gm)	14.00	110.00	520.00
NSS-5104-CPG-5H	Thymidine lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 35µm/gm)	14.00	110.00	520.00
NSS-5104-CPG-10VL	Thymidine lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 1.75µm/gm)	14.00	110.00	520.00
NSS-5104-CPG-10L	Thymidine lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 6-7µm/gm)	14.00	110.00	520.00
NSS-5104-CPG-10M	Thymidine lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 16-17µm/gm)	14.00	110.00	520.00
NSS-5104-CPG-10H	Thymidine lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 35µm/gm)	14.00	110.00	520.00
NSS-5104-CPG-20VL	Thymidine lcaa (long chain alkyl amino) CPG 2000Å (loading ≈ 1.75µm/gm)	14.00	110.00	520.00
NSS-5104-CPG-20L	Thymidine lcaa (long chain alkyl amino) CPG 2000Å (loading ≈ 6-7µm/gm)	14.00	110.00	520.00

SOLID SUPPORTS (Cont.)

Deoxynucleoside CPG Solid Supports, Standard Protection

KITS:		Price$
NSS-5105-CPG-5VL	100mg of each:5101-CPG-5VL to 5104-CPG-5VL	45.00
NSS-5105-CPG-5L	100mg of each:5101-CPG-5L to 5104-CPG-5L	45.00
NSS-5105-CPG-5M	100mg of each:5101-CPG-5M to 5104-CPG-5M	45.00
NSS-5105-CPG-5H	100mg of each:5101-CPG-5H to 5104-CPG-5H	45.00
NSS-5105-CPG-10VL	100mg of each:5101-CPG-10VL to 5104-CPG-10VL	45.00
NSS-5105-CPG-10L	100mg of each:5101-CPG-10L to 5104-CPG-10L	45.00
NSS-5105-CPG-10M	100mg of each:5101-CPG-10M to 5104-CPG-10M	45.00
NSS-5105-CPG-10H	100mg of each:5101-CPG-10H to 5104-CPG-10H	45.00
NSS-5105-CPG-20VL	100mg of each:5101-CPG-20VL to 5104-CPG-20VL	45.00
NSS-5105-CPG-20L	100mg of each:5101-CPG-20L to 5104-CPG-20L	45.00
NSS-5106-CPG-5VL	1gm of each:5101-CPG-5VL to 5104-CPG-5VL	425.00
NSS-5106-CPG-5L	1gm of each:5101-CPG-5L to 5104-CPG-5L	425.00
NSS-5106-CPG-5M	1gm of each:5101-CPG-5M to 5104-CPG-5M	425.00
NSS-5106-CPG-5H	1gm of each:5101-CPG-5H to 5104-CPG-5H	425.00
NSS-5106-CPG-10VL	1gm of each:5101-CPG-10VL to 5104-CPG-10VL	425.00
NSS-5106-CPG-10L	1gm of each:5101-CPG-10L to 5104-CPG-10L	425.00
NSS-5106-CPG-10M	1gm of each:5101-CPG-10M to 5104-CPG-10M	425.00
NSS-5106-CPG-10H	1gm of each:5101-CPG-10H to 5104-CPG-10H	460.00
NSS-5106-CPG-20VL	1gm of each:5101-CPG-20VL to 5104-CPG-20VL	425.00
NSS-5106-CPG-20L	1gm of each:5101-CPG-20L to 5104-CPG-20L	425.00

SOLID SUPPORTS (Cont.)

Deoxynucleoside CPG Solid Supports, Deoxy Cytidine (Ac) Support)

Catalog #	Product	Prices $/100mg	$/gm	$/5gm
NSS-52102-CPG-5VL	deoxy Cytidine (n-ac) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 1.75µm/gm)	14.00	110.00	520.00
NSS-52102-CPG-5L	deoxy Cytidine (n-ac) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 6-7µm/gm)	14.00	110.00	520.00
NSS-52102-CPG-5M	deoxy Cytidine (n-ac) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 16-17µm/gm)	14.00	110.00	520.00
NSS-52102-CPG-5H	deoxy Cytidine (n-ac) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 35µm/gm)	14.00	110.00	520.00
NSS-52102-CPG-10VL	deoxy Cytidine (n-ac) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 1.75µm/gm)	14.00	110.00	520.00
NSS-52102-CPG-10L	deoxy Cytidine (n-ac) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 6-7µm/gm)	14.00	110.00	520.00
NSS-52102-CPG-10M	deoxy Cytidine (n-ac) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 16-17µm/gm)	14.00	110.00	520.00
NSS-52102-CPG-10H	deoxy Cytidine (n-ac) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 35µm/gm)	14.00	110.00	520.00
NSS-52102-CPG-20VL	deoxy Cytidine (n-ac) lcaa (long chain alkyl amino) CPG 2000Å (loading ≈ 1.75µm/gm)	14.00	110.00	520.00
NSS-52102-CPG-20L	deoxy Cytidine (n-ac) lcaa (long chain alkyl amino) CPG 2000Å (loading ≈ 6-7µm/gm)	14.00	110.00	520.00

SOLID SUPPORTS (Cont.)

Deoxynucleoside CPG Solid Supports, (Ibu Deoxy Cytidine Support)

Catalog #	Product	Prices $/100mg	$/gm	$/5gm
NSS-51102-CPG-5VL	deoxy Cytidine (n-ibu) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 1.75µm/gm)	14.00	110.00	520.00
NSS-51102-CPG-5L	deoxy Cytidine (n-ibu) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 6-7µm/gm)	14.00	110.00	520.00
NSS-51102-CPG-5M	deoxy Cytidine (n-ibu) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 16-17µm/gm)	14.00	110.00	520.00
NSS-51102-CPG-5H	deoxy Cytidine (n-ibu) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 35µm/gm)	14.00	110.00	520.00
NSS-51102-CPG-10VL	deoxy Cytidine (n-ibu) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 1.75µm/gm)	14.00	110.00	520.00
NSS-51102-CPG-10L	deoxy Cytidine (n-ibu) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 6-7µm/gm)	14.00	110.00	520.00
NSS-51102-CPG-10M	deoxy Cytidine (n-ibu) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 16-17µm/gm)	14.00	110.00	520.00
NSS-51102-CPG-10H	deoxy Cytidine (n-ibu) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 35µm/gm)	14.00	110.00	520.00
NSS-51102-CPG-20VL	deoxy Cytidine (n-ibu) lcaa (long chain alkyl amino) CPG 2000Å (loading ≈ 1.75µm/gm)	14.00	110.00	520.00
NSS-51102-CPG-20L	deoxy Cytidine (n-ibu) lcaa (long chain alkyl amino) CPG 2000Å (loading ≈ 6-7µm/gm)	14.00	110.00	520.00

SOLID SUPPORTS (Cont.)

Deoxynucleoside CPG Solid Supports, N-PAC Protection

Catalog #	Product	Prices $/100mg	$/gm	$/5gm
NSS-P5101-CPG-5VL	deoxy Adenosine (N-PAC) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 1.75µm/gm)	15.00	120.00	550.00
NSS-P5101-CPG-5L	deoxy Adenosine (N-PAC) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 6-7µm/gm)	15.00	120.00	550.00
NSS-P5101-CPG-5M	deoxy Adenosine (N-PAC) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 16-17µm/gm)	15.00	120.00	550.00
NSS-P5101-CPG-5H	deoxy Adenosine (N-PAC) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 35µm/gm)	15.00	120.00	550.00
NSS-P5101-CPG-10VL	deoxy Adenosine (N-PAC) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 1.75µm/gm)	15.00	120.00	550.00
NSS-P5101-CPG-10L	deoxy Adenosine (N-PAC) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 6-7µm/gm)	15.00	120.00	550.00
NSS-P5101-CPG-10M	deoxy Adenosine (N-PAC) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 16-17µm/gm)	15.00	120.00	550.00
NSS-P5101-CPG-10H	deoxy Adenosine (N-PAC) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 35µm/gm)	15.00	120.00	550.00
NSS-P5101-CPG-20VL	deoxy Adenosine (N-PAC) lcaa (long chain alkyl amino) CPG 2000Å (loading ≈ 1.75µm/gm)	15.00	120.00	550.00
NSS-P5101-CPG-20L	deoxy Adenosine (N-PAC) lcaa (long chain alkyl amino) CPG 2000Å (loading ≈ 6-7µm/gm)	15.00	120.00	550.00

SOLID SUPPORTS (Cont.)

Deoxynucleoside CPG Solid Supports, N-PAC Protection

Catalog #	Product	Prices $/100mg	$/gm	$/5gm
NSS-P5102-CPG-5VL	deoxy Cytidine (N-PAC) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 1.75µm/gm)	15.00	120.00	550.00
NSS-P5102-CPG-5L	deoxy Cytidine (N-PAC) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 6-7µm/gm)	15.00	120.00	550.00
NSS-P5102-CPG-5M	deoxy Cytidine (N-PAC) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 16-17µm/gm)	15.00	120.00	550.00
NSS-P5102-CPG-5H	deoxy Cytidine (N-PAC) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 35µm/gm)	15.00	120.00	550.00
NSS-P5102-CPG-10VL	deoxy Cytidine (N-PAC) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 1.75µm/gm)	15.00	120.00	550.00
NSS-P5102-CPG-10L	deoxy Cytidine (N-PAC) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 6-7µm/gm)	15.00	120.00	550.00
NSS-P5102-CPG-10M	deoxy Cytidine (N-PAC) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 16-17µm/gm)	15.00	120.00	550.00
NSS-P5102-CPG-10H	deoxy Cytidine (N-PAC) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 35µm/gm)	15.00	120.00	550.00
NSS-P5102-CPG-20VL	deoxy Cytidine (N-PAC) lcaa (long chain alkyl amino) CPG 2000Å (loading ≈ 1.75µm/gm)	15.00	120.00	550.00
NSS-P5102-CPG-20L	deoxy Cytidine (N-PAC) lcaa (long chain alkyl amino) CPG 2000Å (loading ≈ 6-7µm/gm)	15.00	120.00	550.00

SOLID SUPPORTS (Cont.)

Deoxynucleoside CPG Solid Supports, N-PAC Protection

Catalog #	Product	Prices $/100mg	$/gm	$/5gm
NSS-P5103-CPG-5VL	deoxy Guanosine (N-PAC) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 1.75µm/gm)	15.00	120.00	550.00
NSS-P5103-CPG-5L	deoxy Guanosine (N-PAC) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 6-7µm/gm)	15.00	120.00	550.00
NSS-P5103-CPG-5M	deoxy Guanosine (N-PAC) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 16-17µm/gm)	15.00	120.00	550.00
NSS-P5103-CPG-5H	deoxy Guanosine (N-PAC) lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 35µm/gm)	15.00	120.00	550.00
NSS-P5103-CPG-10VL	deoxy Guanosine (N-PAC) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 1.75µm/gm)	15.00	120.00	550.00
NSS-P5103-CPG-10L	deoxy Guanosine (N-PAC) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 6-7µm/gm)	15.00	120.00	550.00
NSS-P5103-CPG-10M	deoxy Guanosine (N-PAC) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 16-17µm/gm)	15.00	120.00	550.00
NSS-P5103-CPG-10H	deoxy Guanosine (N-PAC) lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 35µm/gm)	15.00	120.00	550.00
NSS-P5103-CPG-20VL	deoxy Guanosine (N-PAC) lcaa (long chain alkyl amino) CPG 2000Å (loading ≈ 1.75 µm/gm)	15.00	120.00	550.00
NSS-P5103-CPG-20L	deoxy Guanosine (N-PAC) lcaa (long chain alkyl amino) CPG 2000Å (loading ≈ 6-7µm/gm)	15.00	120.00	550.00

SOLID SUPPORTS (Cont.)

KITS:

		Price$
NSS-P5105-CPG-5VL	100mg of each:P5101-CPG-5VL to 5104-CPG-5VL	55.00
NSS-P5105-CPG-5L	100mg of each:P5101-CPG-5L to 5104-CPG-5L	55.00
NSS-P5105-CPG-5M	100mg of each:P5101-CPG-5M to 5104-CPG-5M	55.00
NSS-P5105-CPG-5H	100mg of each:P5101-CPG-5H to 5104-CPG-5H	55.00
NSS-P5105-CPG-10VL	100mg of each:P5101-CPG-10VL to 5104-CPG-10VL	55.00
NSS-P5105-CPG-10L	100mg of each:P5101-CPG-10L to 5104-CPG-10L	55.00
NSS-P5105-CPG-10M	100mg of each:P5101-CPG-10M to 5104-CPG-10M	55.00
NSS-P5105-CPG-10H	100mg of each:P5101-CPG-10H to 5104-CPG-10H	55.00
NSS-P5105-CPG-20VL	100mg of each:P5101-CPG-20VL to 5104-CPG-20VL	55.00
NSS-P5105-CPG-20L	100mg of each:P5101-CPG-20L to 5104-CPG-20L	55.00
NSS-P5106-CPG-5VL	1gm of each:P5101-CPG-5VL to 5104-CPG-5VL	460.00
NSS-P5106-CPG-5L	1gm of each:P5101-CPG-5L to 5104-CPG-5L	460.00
NSS-P5106-CPG-5M	1gm of each:P5101-CPG-5M to 5104-CPG-5M	460.00
NSS-P5106-CPG-5H	1gm of each:P5101-CPG-5H to 5104-CPG-5H	460.00
NSS-P5106-CPG-10VL	1gm of each:P5101-CPG-10VL to 5104-CPG-10VL	460.00
NSS-P5106-CPG-10L	1gm of each:P5101-CPG-10L to 5104-CPG-10L	460.00
NSS-P5106-CPG-10M	1gm of each:P5101-CPG-10M to 5104-CPG-10M	460.00
NSS-P5106-CPG-10H	1gm of each:P5101-CPG-10H to 5104-CPG-10H	460.00
NSS-P5106-CPG-20VL	1gm of each:P5101-CPG-20VL to 5104-CPG-20VL	460.00
NSS-P5106-CPG-20L	1gm of each:P5101-CPG-20L to 5104-CPG-20L	460.00

SOLID SUPPORTS (Cont.)

Deoxynucleoside CPG Solid Supports, Standard Protection

Catalog #	Product	Prices $/100mg	$/gm	$/5gm
NSS-5108-CPG-5VL	deoxy Uridine lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 1.75µm/gm)	30.00	185.00	550.00
NSS-5108-CPG-5L	deoxy Uridine lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 6-7µm/gm)	30.00	185.00	550.00
NSS-5108-CPG-5M	deoxy Uridine lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 16-17µm/gm)	30.00	185.00	550.00
NSS-5108-CPG-5H	deoxy Uridine lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 35µm/gm)	30.00	185.00	550.00
NSS-5108-CPG-10VL	deoxy Uridine lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 1.75µm/gm)	30.00	185.00	550.00
NSS-5108-CPG-10L	deoxy Uridine lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 6-7µm/gm)	30.00	185.00	550.00
NSS-5108-CPG-10M	deoxy Uridine lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 16-17µm/gm)	30.00	185.00	550.00
NSS-5108-CPG-10H	deoxy Uridine lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 35µm/gm)	30.00	185.00	550.00
NSS-5108-CPG-20VL	deoxy Uridine lcaa (long chain alkyl amino) CPG 2000Å (loading ≈ 1.75µm/gm)	30.00	185.00	550.00
NSS-5108-CPG-20L	deoxy Uridine lcaa (long chain alkyl amino) CPG 2000Å (loading ≈ 6-7µm/gm)	30.00	185.00	550.00

SOLID SUPPORTS (Cont.)

Deoxynucleoside CPG Solid Supports, deoxy inosine

Catalog #	Product	Prices $/100mg	$/gm	$/5gm
NSS-5107-CPG-5VL	deoxy Inosine lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 1.75µm/gm)	45.00	185.00	550.00
NSS-5107-CPG-5L	deoxy Inosine lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 6-7µm/gm)	45.00	185.00	550.00
NSS-5107-CPG-5M	deoxy Inosine lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 16-17µm/gm)	45.00	185.00	550.00
NSS-5107-CPG-5H	deoxy Inosine lcaa (long chain alkyl amino) CPG 500Å (loading ≈ 35µm/gm)	45.00	185.00	550.00
NSS-5107-CPG-10VL	deoxy Inosine lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 1.75µm/gm)	45.00	185.00	550.00
NSS-5107-CPG-10L	deoxy Inosine lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 6-7µm/gm)	45.00	185.00	550.00
NSS-5107-CPG-10M	deoxy Inosine lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 16-17µm/gm)	45.00	185.00	550.00
NSS-5107-CPG-10H	deoxy Inosine lcaa (long chain alkyl amino) CPG 1000Å (loading ≈ 35µm/gm)	45.00	185.00	550.00

SOLID SUPPORTS (Cont.)

DMT-Deoxynucleosides on Amino Polystyrene Support, Standard Protection

Two different loading sizes are available:

(1) Very Low (VL), ≈ 2-2.5µm/gm. To load in columns for 30-50n mole DNA scale synthesis and DNA-RNA synthesis.

(2) High (H), ≈ 40µm/gm. To carry out solid phase triester chemistry.

Catalog #	Product	Prices $/100mg	$/gm	$/5gm
NSS-7501-1-VL	deoxy Adenosine (N-bz) succinyl diamido Polystyrene	35.00	110.00	440.00
NSS-7501-1-H	deoxy Adenosine (N-bz) succinyl diamido Polystyrene	35.00	110.00	440.00
NSS-7502-1-VL	deoxy Cytidine (N-bz) succinyl diamido Polystyrene	35.00	110.00	440.00
NSS-7502-1-H	deoxy Cytidine (N-bz) succinyl diamido Polystyrene	35.00	110.00	440.00
NSS-7503-1-VL	deoxy Guanosine (N-ibu) succinyl diamido Polystyrene	35.00	110.00	440.00
NSS-7503-1-H	deoxy Guanosine (N-ibu) succinyl diamido Polystyrene	35.00	110.00	440.00
NSS-7504-1-VL	Thymidine succinyl diamido Polystyrene	35.00	110.00	440.00
NSS-7504-1-H	Thymidine succinyl diamido Polystyrene	35.00	110.00	440.00

KITS:

NSS-7505-1-VL	400mg KIT (100mg each of the above 4 products):	$130.00
NSS-7506-1-H	400mg KIT (100mg each of the above 4 products):	$130.00
NSS-7507-1-VL	4gm KIT (1gm each of the above 4 products):	$420.00
NSS-7508-1-H	4gm KIT (1gm each of the above 4 products):	$420.00

SOLID SUPPORTS (Cont.)

MODIFIED & MINOR BASE SOLID SUPPORTS

Catalog #	Product	Qty.	Prices
NSS-9500-5UGC	500Å 8-Oxo-2'-deoxy Guanosine lcaa CPG (Loading 25-30µm/gm)	100 mg. 1.0gm	110.00 550.00
NSS-9501-5ADP	500Å 2-AminoPurine (N-dimethylaminomethylidine) 2'-Deoxy lcaa CPG (Loading 25-30µm/gm)	100 mg. 1.0gm	110.00 585.00
NSS-9502-5AP	500Å 3'-DeoxyAdenosine (N-bz) (Cordycepin) lcaa CPG (Loading 25-30µm/gm)	100 mg. 1.0gm	110.00 625.00
NSS-9503-5DN	500Å 2'-Deoxy Nebularine lcaa CPG (Loading 25-30µm/gm) (Purine-2'-Deoxy-Riboside)	100 mg. 1.0gm	110.00 575.00
NSS-9504-5ADA	500Å 2-Amino 2'-deoxy Adenosine (2,6 diaminopurine) lcaa CPG (Loading 25-30µm/gm)	100 mg. 1.0gm	110.00 610.00
NSS-9505-5ADU	500Å 5'-Amino-2'-deoxyUridine lcaa CPG (Loading 25-30µm/gm)	100 mg. 1.0gm	110.00 585.00
NSS-9506-5ADT	500Å 5'-amino-2'-Deoxy Thymidine lcaa CPG (Loading 25-30µm/gm)	100 mg. 1.0gm	110.00 475.00
NSS-9507-5TDU	500Å 5'-DMT-O4-Triazolyl-2'-Deoxy Uridine lcaa CPG (Loading 25-30µm/gm)	100 mg. 1.0gm	110.00 460.00
NSS-9508-5TDT	500Å 5'-DMT-O4-Triazolyl Thymidine lcaa CPG (Loading 25-30µm/gm)	100 mg. 1.0gm	110.00 475.00
NSS-9509-5THT	500Å 2-Thio 2'-Deoxy Thymidine lcaa CPG (Loading 25-30µm/gm)	100 mg. 1.0gm	110.00 565.00
NSS-9510-5THU	500Å 2-Thio-2'-Deoxy Uridine lcaa CPG (Loading 25-30µm/gm)	100 mg. 1.0gm	110.00 565.00
NSS-73660	araAdenosine 1caa CPG 500Å (loading 25-30µm/gm)	100mg 1.0gm	65.00 170.00
NSS-73670	araCytidine 1caa CPG 500Å (loading 25-30µm/gm)	100mg 1.0gm	65.00 170.00
NSS-73680	2',3'-DideoxyAdenosine 1caa CPG 500Å (loading 25-30µm/gm)	100mg 1.0 gm	250.00 465.00
NSS-73650	5-Fluoro deoxy Uridine 1caa CPG 500Å (loading 25-30µm/gm)	100mg 1.0gm	65.00 265.00
NSS-73690	2',3'-DideoxyCytidine 1caa CPG 500Å (loading 12-15µm/gm)	100mg 1.0gm	250.00 450.00
NSS-97516	Purine 2'-deoxy riboside lcaa CPG 500Å (loading 25-30µm/gm)	100mg 1.0gm	90.00 585.00

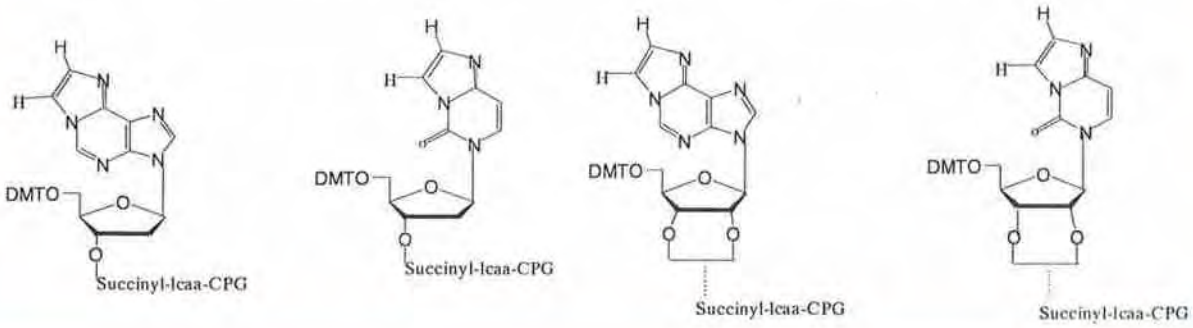
SOLID SUPPORTS (Cont.)

MODIFIED & MINOR BASE SOLID SUPPORTS (Cont.)

Catalog #	Product	Qty.	Prices
NSS-99921	500Å 8-Bromo-deoxy Guanosine(n-ibu) 1caa	100 mg.	115.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	970.00
NSS-99928	500Å 8-Bromo-deoxy Adenosine (N,N-dibutyl formamidine)1caa	100 mg.	110.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	950.00
NSS-99922	500Å N3-methyl-deoxy Thymidine 1caa	100 mg.	125.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	970.00
NSS-99923	500Å N4-Ethyl-2'-deoxy Cytidine 1caa	100 mg.	125.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	970.00
NSS-99924	500Å 5'-DMT-2'-deoxy-Isoguanosine(ibu)	100 mg.	125.00
	1caa CPG 500Å (loading 25-30µm/gm)	1.0gm	970.00
NSS-99925	500Å 5'-DMT-4-Thio-Thymidine	100 mg.	80.00
	lcaa CPG 500Å (loading 25-30µm/gm)	1.0gm	735.00
NSS-99926	500Å 2-Fluoro- 2'-deoxy Inosine lcaa CPG	100 mg.	125.00
	(O6-ter-butyl silyl ethoxy)	1.0gm	970.00
	CPG 500Å (loading 25-30µm/gm)		
NSS-87707	7-Deaza deoxy Adenosine 1caa	100mg	90.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	585.00
NSS-87708	7-Deaza deoxy Guanosine 1caa	100mg	90.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	585.00
NSS-87709	7-Deaza deoxy Inosine 1caa	100mg	90.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	585.00
NSS-97508	4-Thio deoxy Uridine lcaa	100mg	90.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	585.00
NSS-98988	N6-Dibenzoyl-deoxy Adenosine lcaa	100mg	40.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	125.00
NSS-98989	N2-(Dimethylaminomethylidene)-O6-(diphenylcarbanoyl)-	100mg	40.00
	CPG 500Å deoxyguanosine lcaa (loading 25-30µm/gm)	1.0gm	125.00
NSS-73620	5-Br-deoxy Cytidine (N-bz) 1caa	100mg	45.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	140.00
NSS-13780	5-Br-deoxy Uridine 1caa	100mg	50.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	175.00
NSS-13530	5-Me-deoxy Cytidine (N-bz) lcaa	100mg	45.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	175.00
NSS-9750	3'-Amino Modified C-3 lcaa	100mg	45.00
	CPG 500Å (loading 25-30µm/gm) (see page 113 also)	1.0gm	185.00
NSS-73630	5-Iodo deoxy Cytidine (N-bz) 1caa	100mg	65.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	175.00
NSS-73640	5-Iodo deoxy Uridine 1caa	100mg	65.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	175.00

FLUORESCENT DEOXY AND RIBO, ADENOSINE & CYTIDINE SOLIID SUPPORTS*

★High Fluorescent Intensity★
★Nucleic Acid Structure Function Determination★
★For Selective Introduction in Synthetic DNA and RNA★
★For Various Applications such as Extremely Low Detection Probes★
★Synthetic Primers with Fluorescent Etheno A and C undergo PCR® Amplification★**



Catalog #	Product	Qty.	Price$
NSS-91891	Etheno-deoxy Adenosine 3'-Succinyl lcaa CPG	100mg. 1.0gm	95.00 450.00
NSS-91892	Etheno-deoxy Cytidine, 3'-Succinyl lcaa CPG	100mg. 1.0gm.	95.00 395.00
ANP-91991	Etheno-ribo Adenosine 2'/3' Succinyl lcaa CPG	100mg. 1.0 gm.	190.00 485.00
ANP-91992	Etheno-ribo Cytidine 2'/3' Succinyl lcaa CPG	100 mg. 1.0gm.	185.00 465.00

**PCR® is a trade name of Hoffmann La Roche, Cetus Corporation.
CPG loading = 25-30μm/gm

ULTRA HIGH LOADED CPG

Chemgenes is now producing 500Å CPG with a loading of ~90 μmole/gm. The standard deoxy nucleosides are available at this loading.

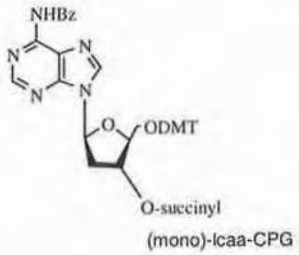
Catalog #	Product	Price$		
		100mg	1gm	5gm
NSS-5101-VH	dA-lcaa CPG	35.00	165.00	680.00
NSS-5102-VH	dC-lcaa CPG	35.00	165.00	680.00
NSS-5103-VH	dG-lcaa CPG	35.00	165.00	680.00
NSS-5104-VH	T-lcaa CPG	35.00	165.00	680.00

SOLID SUPPORTS (Cont.)

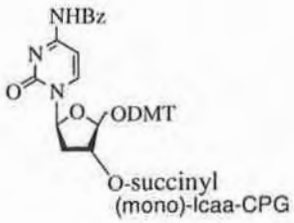
5'-DMT Modified Deoxynucleoside, CPG s (For Crosslinking/ Therapeutic Studies

Mirror Image of Natural DNA
*** Offer A Wide Variety of Applications ***
β-L- Deoxy Nucleoside Phosphoramidites
For The Synthesis of L-DNA

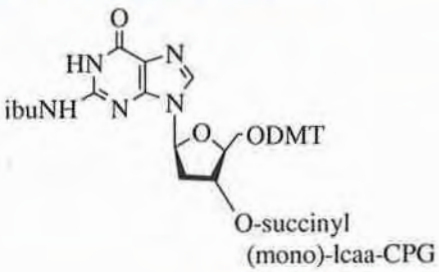
NSS-30521-β-L-2'-deoxy-Adenosine 3' Succinyl-lcaa-CPG



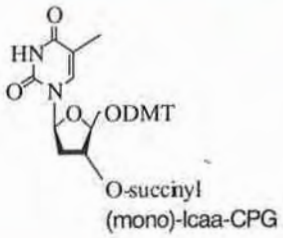
NSS-30522-β-L-2'-deoxy-Cytidine 3' Succinyl-lcaa-CPG



NSS-30523-β-L-2'-deoxy-Guanosine(n-ibu) 3' Succinyl-lcaa-CPG



NSS-30524-β-L-Thymidine- 3' Succinyl-lcaa-CPG

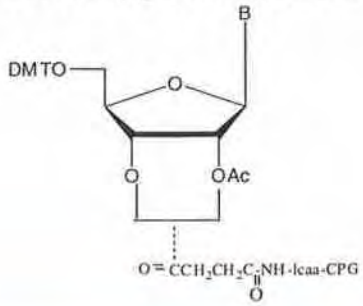


Catalog #	Name	Qty	Price
NSS-30521	5'-DMT-β–L-2'-deoxy Adenosine(bz)	100 mg.	125.00
	3'-succinyl-lcaa-CPG(loading 25-30μm/gm)	1 gm.	585.00
NSS-30522	5'-DMT-b-L-2'-deoxy Cytidine(bz)	100 mg.	125.00
	3'-succinyl-lcaa-CPG(loading 25-30μm/gm)	1 gm.	585.00
NSS-30523	5'-DMT-b-L-2'-deoxy Guanosine(ibu)	100 mg.	125.00
	3'-succinyl- lcaa-CPG(loading 25-30μm/gm)	1 gm.	585.00
NSS-30524	5'-DMT-b-L-2'-deoxy Thymidine	100 mg.	125.00
	3'-succinyl-lcaa-CPG(loading 25-30μm/gm)	1 gm.	585.00

SOLID SUPPORTS

Ribonucleoside Attached to Solid Supports, Standard Protection

Two types of Ribonucleosides derivatized solid supports, Control Pore Glass and Polystyrene are available. The attachment of the sugar hydroxyl is blocked by acetylation. Normal loading of Ribonucleosides is 30μm/gm on these supports. The loading of Ribonucleoside CPG supports of 1000Å particle size is ≈ 20μm/gm.



B	Cat.#
bzA	NSS 6101
bzC	NSS 6102
ibuG	NSS 6103
U	NSS 6104

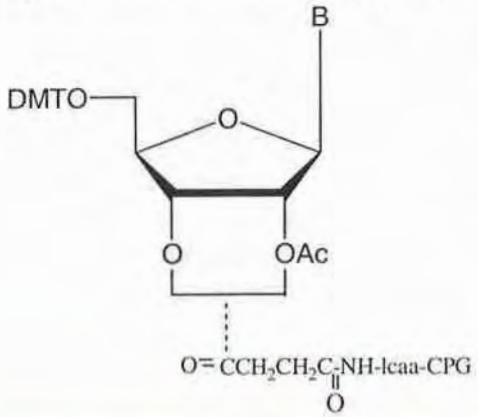
Ribonucleosides on Control Pore Glass, Standard Protection

Catalog #	Product	Prices $/100mg	$/gm
	Ribo Adenosine (N-bz), lcaa (long chain alkyl amino) CPG		
NSS-6101-05A	500Å	25.00	240.00
NSS-6101-10A	1000Å	25.00	240.00
NSS-6101-20A	2000Å	25.00	240.00
	Ribo Cytidine (N-bz), lcaa (long chain alkyl amino) CPG		
NSS-6102-05C	500Å	25.00	240.00
NSS-6102-10C	1000Å	25.00	240.00
NSS-6102-20C	2000Å	25.00	240.00
	Ribo Guanosine (N-ibu), lcaa (long chain alkyl amino) CPG		
NSS-6103-05G	500Å	25.00	240.00
NSS-6103-10G	1000Å	25.00	240.00
NSS-6103-20G	2000Å	25.00	240.00
	Ribo Uridine, lcaa (long chain alkyl amino) CPG		
NSS-6104-05U	500Å	25.00	240.00
NSS-6104-10U	1000Å	25.00	240.00
NSS-6104-20U	2000Å	25.00	240.00
KITS			
NSS-6105-05	400mg KIT (100mg each of the above 4 products): $95.00		
NSS-6105-10	400mg KIT (100mg each of the above 4 products): $95.00		
NSS-6105-20	400mg KIT (100mg each of the above 4 products): $95.00		
NSS-6106-05	4gm KIT (1gm each of the above 4 products): $880.00		
NSS-6106-10	4gm KIT (1gm each of the above 4 products): $880.00		
NSS-6106-20	4gm KIT (1gm each of the above 4 products): $880.00		

SOLID SUPPORTS (Cont.)

Ribonucleoside Attached to Solid Supports, N-PAC Protection

Control Pore Glass derivatized is available with N-PAC protection. The attachment of the sugar hydroxyl is blocked by acetylation. Normal loading of Ribonucleosides is 30µm/gm on these supports. The loading of Ribonucleoside CPG supports of 1000Å particle size is ≈ 20µm/gm.



B	Cat.#
PAC A	NSS P6101
PAC C	NSS P6102
PAC G	NSS P6103
U	NSS 6104

Ribonucleosides on Control Pore Glass, N-PAC Protection

Catalog #	Product	Price $/100mg	Price $/gm
	Ribo Adenosine (N-PAC), lcaa (long chain alkyl amino) CPG		
NSS-P6101-05A	500Å	35.00	245.00
NSS-P6101-10A	1000Å	35.00	245.00
NSS-P6101-20A	2000Å	35.00	245.00
	Ribo Cytidine (N-PAC), lcaa (long chain alkyl amino) CPG		
NSS-P6102-05C	500Å	35.00	245.00
NSS-P6102-10C	1000Å	35.00	245.00
NSS-P6102-20C	2000Å	35.00	245.00
	Ribo Guanosine (N-PAC), lcaa (long chain alkyl amino) CPG		
NSS-P6103-05G	500Å	35.00	245.00
NSS-P6103-10G	1000Å	35.00	245.00
NSS-P6103-20G	2000Å	35.00	245.00
	Ribo Uridine, lcaa (long chain alkyl amino) CPG		
NSS-6104-05U	500Å	25.00	240.00
NSS-6104-10U	1000Å	25.00	240.00
NSS-6104-20U	2000Å	25.00	240.00

KITS

NSS-P6105-05	400mg KIT (100mg each of the above 4 products):	$98.00
NSS-P6105-10	400mg KIT (100mg each of the above 4 products):	$98.00
NSS-P6105-20	400mg KIT (100mg each of the above 4 products):	$98.00
NSS-P6106-05	4gm KIT (1gm each of the above 4 products):	$890.00
NSS-P6106-10	4gm KIT (1gm each of the above 4 products):	$890.00
NSS-P6106-20	4gm KIT (1gm each of the above 4 products):	$890.00

SOLID SUPPORTS (Cont.)

DMT-Ribonucleosides on Amino Polystyrene Support, Standard Protection

Two different loading sizes are available:
(1) Very Low (VL), ≈2-2.5μm/gm. To load in columns for 30-50nona mole scale scale RNA synthesis.

(2) High (H), ≈40μm/gm. To carry out solid phase triester chemistry.

Catalog #	Product	Prices $/100mg	$/gm	$/5gm
NSS-6111-1-VL	ribo Adenosine (N-bz) succinyl diamido Polystyrene	40.00	150.00	465.00
NSS-6111-1-H	ribo Adenosine (N-bz) succinyl diamido Polystyrene	40.00	150.00	465.00
NSS-6112-1-VL	ribo Cytidine (N-bz) succinyl diamido Polystyrene	40.00	150.00	465.00
NSS-6112-1-H	ribo Cytidine (N-bz) succinyl diamido Polystyrene	40.00	150.00	465.00
NSS-6113-1-VL	ribo Guanosine (N-ibu) succinyl diamido Polystyrene	45.00	165.00	490.00
NSS-6113-1-H	ribo Guanosine (N-ibu) succinyl diamido Polystyrene	45.00	165.00	490.00
NSS-6114-1-VL	ribo Uridine succinyl diamido Polystyrene	40.00	140.00	455.00
NSS-6114-1-H	ribo Uridine succinyl diamido Polystyrene	40.00	140.00	455.00

KITS:

NSS-6115-1-VL	400mg KIT (100mg each of the above 4 products):	$140.00
NSS-6116-1-H	400mg KIT (100mg each of the above 4 products):	$140.00
NSS-6117-1-VL	4gm KIT (1gm each of the above 4 products):	$515.00
NSS-6118-1-H	4gm KIT (1gm each of the above 4 products):	$515.00

SOLID SUPPORTS (Cont.)

Modified RNA Solid Support columns, Standard Protection

Please inquire for other loadings and CPG sizes.

Catalog #	Product	Qty	Price$
NSS-98091	500Å 5-Iodo-Uridine lcaa CPG (loading 25-30µm/gm)	100 mg	60.00
	500Å 5-Iodo Uridine lcaa CPG (loading 25-30µm/gm)	1.0 gm.	185.00
NSS-98093	500Å 5-Iodo-Cytidine lcaa CPG (loading 25-30µm/gm)	100 mg.	60.00
	500Å 5-Iodo-Cytidine lcaa CPG (loading 25-30µm/gm)	1.0 gm	485.00
NSS-98095	500Å 7-deaza-Guanosine(n-ibu) lcaa CPG (loading 25-30µm/gm)	100 mg.	95.00
	500Å 7-deaza-Guanosine(n-ibu) lcaa CPG (loading 25-3µm/gm)	1.0 gm.	685.00
NSS-98097	500Å 7-deaza-Adenosine(bz) lcaa CPG (loading 25-30µm/gm)	100 mg.	95.00
	500Å 7-deaza-Adenosine(bz) lcaa CPG (loading 25-30µm/gm)	1.0 gm.	685.00
NSS-98010	500Å 5'-DMT-2,2'-Anhydro-Uridine lcaa CPG (loading 25-30µm/gm)	100 mg.	60.00
	500Å 5'-DMT-2,2'-Anhydro-Uridine lcaa CPG (loading 25-30µm/gm)	1.0 gm.	485.00
NSS-98012	500Å 8-Bromo-ribo Adenosine (N,N-dibutyl formamidine) lcaa CPG (loading 25-30µm/gm)	100mg.	95.00
	500Å 8-Bromo-ribo Adenosine (N,N-dibutyl formamidine) lcaa CPG (loading 25-30µm/gm)	1.0 gm	495.00
NSS-98014	500Å N3-Methyl Uridine lcaa CPG (loading 25-30µm/gm)	100 mg.	60.00
	500Å N3-Methyl Uridine lcaa CPG (loading 25-30µm/gm)	1.0 gm.	475.00
NSS-98016	500Å N3-Methyl Thymidine lcaa CPG (loading 25-30µm/gm)	100 mg.	60.00
	500Å N3-Methyl Thymidine lcaa CPG (loading 25-30µm/gm)	1.0 gm	475.00
NSS-98022	500Å 5-Methyl Cytidine lcaa CPG (loading 25-30µm/gm)	100 mg.	60.00
	500Å 5-Methyl Cytidine lcaa CPG (loading 25-30µm/gm)	1.0.gm.	475.00
NSS-98024	500Å N4-Ethyl Cytidine lcaa CPG (loading 25-30µm/gm)	100 mg.	60.00
	500Å N4-Ethyl Cytidine lcaa CPG (loading 25-30µm/gm)	1.0 gm.	525.00
NSS-98026	500Å Isoguanosine(n-ibu) lcaa CPG (loading 25-30µm/gm)	100 mg.	85.00
	500Å Isoguanosine(n-ibu) lcaa CPG (loading 25-30µm/gm)	1.0 gm	625.00
NSS-98028	500Å N3-Thiobenzoylethyl Uridine lcaa CPG (loading 25-30µm/gm)	100 mg.	75.00
	500Å N3-Thiobenzoylethyl Uridine lcaa CPG (loading 25-30µm/gm)	1.0 gm.	645.00
NSS-98030	500Å Cytosine Arabinoside lcaa CPG (loading 25-30µm/gm)	100 mg.	60.00
	500Å Cytosine Arabinoside lcaa CPG (loading 25-30µm/gm)	1.0 gm.	475.00

SOLID SUPPORTS (Cont.)

RNA Solid Supports, Standard Protection

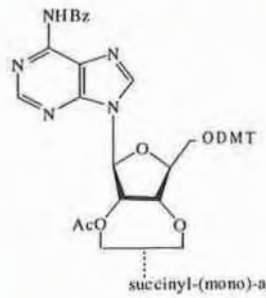
Please inquire for other loadings and CPG sizes.

Catalog #	Product	Qty.	Price.
NSS-90010-5U	500Å 2'-AminoUridine lcaa CPG (loading 25-30µm/gm)	100 mg.	110.00
	500Å 2'-AminoUridine lcaa CPG (loading 25-30µm/gm)	1.0 gm	610.00
NSS-90020-5P	500Å Pyridine-2-one-lcaa CPG (loading 25-30µm/gm)	100 mg.	105.00
	500Å Pyridine-2-one-lcaa CPG (loading 25-30µm/gm)	1.0 gm	685.00
NSS-90030-5PU	500Å PseudoUridine lcaa CPG (loading 25-30µm/gm)	100 mg.	125.00
	500Å PseudoUridine lcaa CPG (loading 25-30µm/gm)	1.0 gm	625.00
NSS-90040-5DP	500Å 2, 6 Amino Adenosine lcaa CPG (loading 25-30µm/gm)	100 mg.	120.00
	500Å 2, 6 Amino Adenosine lcaa CPG (loading 25-30µm/gm)	1.0 gm	615.00
NSS-90050-5BZA	500Å N6-Benzyl-Adenosine lcaa CPG (loading 25-30µm/gm)	100 mg.	120.00
	500Å N6-Benzyl-Adenosine lcaa CPG (loading 25-30µm/gm)	1.0 gm	610.00
NSS-90060-5IPA	500Å N6-Isopentyl Adenosine lcaa CPG (loading 25-30µm/gm)	100 mg.	125.00
	500Å N6-Isopentyl Adenosine lcaa CPG (loading 25-30µm/gm)	1.0 gm	625.00
NSS-90070-5AP	500Å 2-Amino Purine Riboside lcaa CPG (loading 25-30µm/gm)	100 mg.	120.00
	500Å 2-Amino Purine Riboside lcaa CPG (loading 25-30µm/gm)	1.0 gm	610.00
NSS-90080-5PR	500Å Purine Riboside lcaa CPG (loading 25-30µm/gm)	100 mg.	110.00
	500Å Purine Riboside lcaa CPG (loading 25-30µm/gm)	1.0 gm	575.00
NSS-98032	500Å 5-Fluoro Uridine lcaa CPG (loading 25-30µm/gm)	100 mg.	60.00
	500Å 5-Fluoro Uridine lcaa CPG (loading 25-30µm/gm)	1.0 gm.	475.00
NSS-90818	500Å 5-Bromo Ribo Uridine lcaa CPG (loading 25-30µm/gm)	100 mg.	125.00
	500Å 5-Bromo Ribo Uridine lcaa CPG (loading 25-30µm/gm)	1.0 gm	550.00
NSS-90844	500Å 5-Bromo Ribo Cytidine lcaa CPG (loading 25-30µm/gm)	100 mg.	140.00
	500Å 5-Bromo Ribo Cytidine lcaa CPG (loading 25-30µm/gm)	1.0 gm	580.00
NSS-90711	500Å 4-Triazolyl Uridine lcaa CPG (loading 25-30µm/gm)	100 mg.	85.00
	500Å 4-Triazolyl Uridine lcaa CPG (loading 25-30µm/gm)	1.0 gm	410.00
NSS-90712	500Å Isocytidine lcaa CPG (loading 25-30µm/gm)	100 mg.	155.00
	500Å Isocytidine lcaa CPG (loading 25-30µm/gm)	1.0 gm	592.00
NSS-90713	500Å 4-Thio Uridine lcaa CPG (loading 25-30µm/gm)	100 mg.	165.00
	500Å 4-Thio Uridine lcaa CPG (loading 25-30µm/gm)	1.0 gm	635.00
NSS-0847	Ribo Inosine	100mg.	75.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	425.00
NSS-08477	Ribo Thymidine	100mg	110.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	545.00

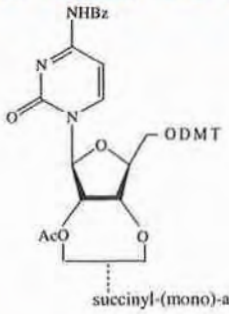
SOLID SUPPORTS (Cont.)

Modified RNA Solid Supports
5'-DMT β-L-Ribonucleoside

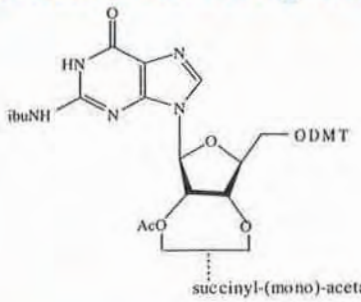
NSS-40691 5'-DMT- β-L riboAdenosine(n-bz) 2'/3'-Acetate 2'/3' Succinyl-lcaa-CPG



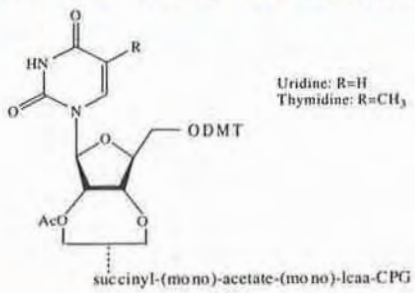
NSS-40692 5'-DMT- β-L-Cytidine(n-bz) 2'/3'-Acetate 2'/3' Succinyl-lcaa-CPG



NSS-40693 5'-DMT β-L- Guanosine(n-ibu) 2'/3'-Acetate 2'/3'-Succinyl-lcaa CPG



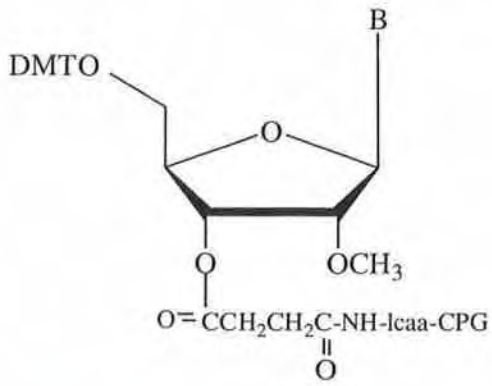
NSS-40694/5 5'-DMT β-L- Uridine/ Thymidine 2'/3'-Acetate 2'/3'-Succnyl-lcaa CPG



Catalog #	Product	Qty	Price
NSS-40691	5'-DMT- β-L riboAdenosine(n-bz) 2'/3'-Acetate 2'/3' Succinyl-lcaa-CPG (loading 25-30μm/gm)	100 mg.	135.00
NSS-40691	5'-DMT- β-L riboAdenosine(n-bz) 2'/3'-Acetate 2'/3' Succinyl-lcaa-CPG (loading 25-30μm/gm)	1.0 gm.	850.00
NSS-40692	5'-DMT- β-L-Cytidine(n-bz) 2'/3'-Acetate 2'/3' Succinyl-lcaa-CPG (loading 25-30μm/gm)	100 mg.	135.00
NSS-40692	5'-DMT- β-L-Cytidine(n-bz) 2'/3'-Acetate 2'/3' Succinyl-lcaa-CPG (loading 25-30μm/gm)	1.0 gm.	850.00
NSS-40693	5'-DMT β-L- Guanosine(n-ibu) 2'/3'-Acetate 2'/3'-Succinyl-lcaa CPG (loading 25-30μm/gm)	100 mg.	135.00
NSS-40693	5'-DMT β-L- Guanosine(n-ibu) 2'/3'-Acetate 2'/3'-Succinyl-lcaa CPG (loading 25-30μm/gm)	1.0 gm.	850.00
NSS-40694	5'-DMT β-L- Uridine 2'/3'-Acetate 2'/3'-Succnyl-lcaa CPG (loading 25-30μm/gm)	100 mg.	135.00
NSS-40694	5'-DMT β-L- Uridine 2'/3'-Acetate 2'/3'-Succnyl-lcaa CPG (loading 25-30μm/gm)	1.0 gm.	850.00
NSS-40695	5'-DMT β-L- Thymidine 2'/3'-Acetate 2'/3'-Succnyl-lcaa CPG (loading 25-30μm/gm)	100 mg.	135.00
NSS-40695	5'-DMT β-L- Thymidine 2'/3'-Acetate 2'/3'-Succnyl-lcaa CPG (loading 25-30μm/gm)	1.0. gm.	850.00

SOLID SUPPORTS (Cont.)

5'-DMT-2'-OMe-Ribonucleosides on CPG Support, Standard Protection



B	Cat.#
bzA	NSS 7901
bzC	NSS 7902
ibuG	NSS 7903
U	NSS 7904

5'-DMT-2'-OMe on Control Pore Glass, Standard Protection

Catalog #	Product	Price $/100mg	$/250mg	$/gm
NSS-7901-05A 500Å	2'-OMe-Ribo Adenosine (N-bz), lcaa (long chain alkyl amino) CPG	35.00	80.00	285.00
NSS-7902-05C 500Å	2'-OMe-Ribo Cytidine (N-bz), lcaa (long chain alkyl amino) CPG	35.00	80.00	285.00
NSS-7903-05G 500Å	2'-OMe-Ribo Guanosine (N-ibu), lcaa (long chain alkyl amino) CPG	35.00	80.00	285.00
NSS-7904-05U 500Å	2'-OMe-Ribo Uridine, lcaa (long chain alkyl amino) CPG	35.00	80.00	285.00

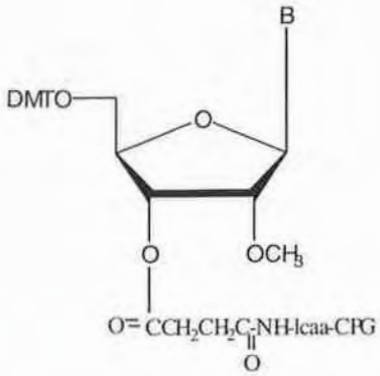
KITS:

NSS-7905	400mg KIT (100mg each of the above 4 products):	$110.00
NSS-7906	1gm KIT (250mg each of the above 4 products):	$255.00
NSS-7907	4gm KIT (1gm each of the above 4 products):	$910.00

The typical loading on these supports is ≈ 25-30µm/gm

SOLID SUPPORTS (Cont.)

5'-DMT-2'-OMe-Ribonucleosides on CPG Support, N-PAC Protection



B	Cat.#
PAC A	NSS P7901
PAC C	NSS P7902
PAC G	NSS P7903
U	NSS 7904

5'-DMT-2'-OMe on Control Pore Glass, N-PAC Protection

Catalog #	Product	Price $/100mg	$/250mg	$/gm
NSS-P7901-05A 500Å	2'-OMe-Ribo Adenosine (N-PAC), lcaa (long chain alkyl amine) CPG	45.00	86.00	290.00
NSS-P7902-05C 500Å	2'-OMe-Ribo Cytidine (N-PAC), lcaa (long chain alkyl amine) CPG	45.00	86.00	290.00
NSS-P7903-05G 500Å	2'-OMe-Ribo Guanosine (N-PAC), lcaa (long chain alkyl amine) CPG	45.00	86.00	290.00
NSS-7904-05U 500Å	2'-OMe-Ribo Uridine, lcaa (long chain alkyl amine) CPG	35.00	80.00	285.00

KITS:

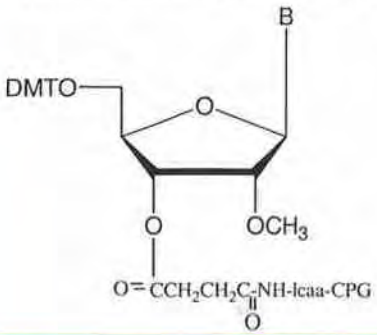
NSS-P7905	400mg KIT (100mg each of the above 4 products):	$135.00
NSS-P7906	1gm KIT (250mg each of the above 4 products):	$275.00
NSS-P7907	4gm KIT (1gm each of the above 4 products):	$940.00

The typical loading on these supports is ≈ 25µm/gm

SOLID SUPPORTS (Cont.)

5'-DMT-2'/3'-OMe-Ribonucleosides on CPG Support, Standard Protection

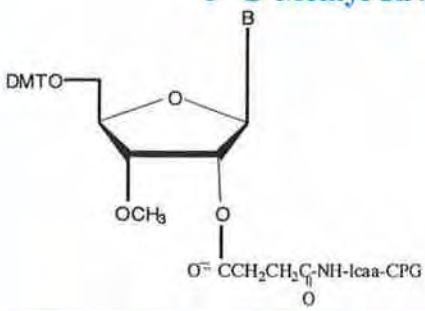
Please inquire for other loadings and CPG sizes.



B	Cat.#
5-Iodo U	NSS 00161
Inosine	NSS 00162
5 Methyl C	NSS 00163
Pseudo U	NSS 00164

Catalog #	Product	Price $/100mg	Price $/gm
NSS-00161-5U	500Å 5-Iodo 2'-OMe-ribo Uridine lcaa CPG	120.00	625.00
NSS-00162-5I	500Å 2'-OMe-ribo Insoine lcaa CPG	115.00	610.00
NSS-00163-5MC	500Å 5-Methyl 2'-OMe-ribo Cytidine lcaa CPG	115.00	605.00
NSS-00164-5PU	500Å Pseudo Uridine 2'-OMe-ribo Uridine lcaa CPG	125.00	620.00

3'-O-Methyl-RNA Synthesis Solid Supports, Standard Protection



B	Cat.#
A(n-bz)	NSS 88801
C(n-bz)	NSS 88802
G (n-ibu)	NSS 88803
U	NSS 88804
Inosine	NSS 88805

Catalog #	Product	Price $/100mg	Price $/gm
NSS-88801-5A	500Å 3'-OMe-ribo Adenosine (N-bz) lcaa CPG	135.00	80.00
NSS-88802-5C	500Å 3'-OMe-ribo Cytidine (N-bz) lcaa CPG	135.00	80.00
NSS-88803-5G	500Å 3'-OMe-ribo Guanosine (N-ibu) lcaa CPG	135.00	80.00
NSS-89904-5U	500Å 3'-OMe-ribo Uridine lcaa CPG	135.00	80.00
NSS-88805-5I	500Å 3'-OMe-ribo Inosine lcaa CPG	135.00	80.00

Loding ≈ 25-30μm/gm

SOLID SUPPORTS (Cont.)

CHROMOPHORE & LIGANDS SOLID SUPPORTS (Cont.)

Catalog #	Product	Qty.	Price$
NSS-0847	Ribo Inosine	100mg	75.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	425.00
NSS-08477	Ribo Thymidine	100mg	110.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	545.00
NSS-91622	Biotin lcaa (t-butyl-bz)	100mg	115.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	970.00
NSS-91626	Cholesterol lcaa CPG	100mg	115.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	970.00
NSS-91627	DNP TEG CPG	100mg	115.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	970.00
NSS-99977	3'-Phosphate-ON lcaa	100mg	90.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	585.00
NSS-99978	3'-thiol Modifier lcaa	100mg	90.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	585.00
NSS-99979	Fluorescein 1caa	100mg	90.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	585.00
NSS-93705	Psoralen 1caa	100mg	90.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	585.00
NSS-97506	Molecular Beacon 1caa	100mg	90.00
	CPG 500Å (loading 25-30µm/gm)	1.0gm	585.00

SOLID SUPPORTS (Cont.)

3'-Amino-Modifier C3-CPG

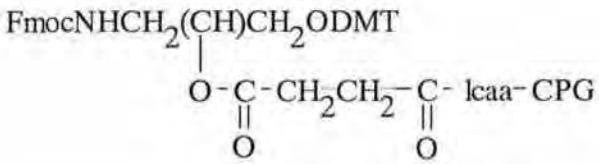
The 3'-Amino-Modifier C3-CPG is designed for use in automated synthesizers to introduce a primary amine to the 3'-terminus of a target oligonucleotide. A primary amine can be used to attach a variety of products to the oligonucleotide, including fluorescent tags, biotin, alkaline phosphate, and EDTA.

The 3'-Amino-Modifier C3-CPG is an off-white powder packaged in industry-standard DNA synthesis columns. The columns should be stored desiccated at 4°C. Since the synthesizer assumes that the 3' base is attached to the CPG, an arbitrary base should be entered at the 3'-terminus. The 3'-terminal base of the target sequence should be entered as the second base.

Since the 3'-Amino-Modifier C3-CPG contains a DMT group, the columns should be used in a manner identical to normal protected nucleoside synthesis columns. If desired, the primary amine incorporation can be measured from the DMT concentration after the first coupling cycle.

The final DMT group may be removed on the synthesizer or it may be retained to aid in purification using a reverse phase technique. If the Poly-Pak cartridge technique is used for purification, the DMT group is removed on the cartridge. If the DMT group is retained during HPLC purification, it may be removed by treating the oligonucleotide with acetic acid: water (80:20) at R.T. for one hour.

The standard ammonium hydroxide treatment is used to cleave the modified oligonucleotide from the support and to remove all other protecting groups, including the base-labile Fmoc protecting group.



Name:
1-Dimethoxytrityl-3-fluorenylmethoxycarbonylamino-propan-2-succinyl long chain alkyl amino-CPG

Catalog #: NSS-9750 **Price:** $45.00/100mg
$185.00/1.0gm

REAGENTS FOR OLIGONUCLEOTIDE SYNTHESIS

PHOSPHITYLATING REAGENTS
(available in bulk quantity)
N,N-Diisopropylamino Cyanoethyl phosphonamidic-chloride

$[\,(CH_3)_2CH\,]_2$ -N-P-(Cl) OCH_2CH_2CN

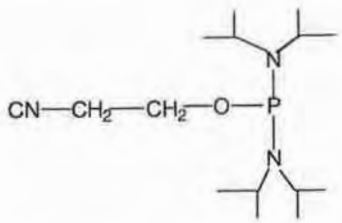
F.W.: 236.682 B.P.: 98-99°C/0.5mm d: 1.059

QC: 1. It is a distilled product, constant boiling fraction.
2. Chlorine microanalysis between 98%-to-102%.
3. Coupling Test: Greater than 98% (DMT-Nucleoside-CED phosphoramidite formation occurs).

PACKED: Under Argon.

Catalog #:	Qty.	Price$
RN-1505	1gm	13.50
	5gm	55.50
	25gm	250.00
	100gm	700.00

2-Cyanoethyl N,N,N',N'-tetraisopropylphosphane



(no hydrochloride formation occurs during the synthesis of phosphoramidites)

F.W.: 301.403 d: 0.914

Undergoes smooth coupling to produce cyanoethyl-N,N-diisopropyl phosphoramidites
The crude amidites are extremely clean and better amenable to purification
****Useful phosphorylating reagent for many modified nucleosides****

QC: 1. Distilled product, b.p. 92°C/0.01mm.
2. ^{31}P NMR: sharp single peak.
3. Reaction greater than 98% to produce clean phosphoramidites.
4. TLC picture of clean doublet of crude CNEt-phosphoramidite of 5'-DMT-dT.

PACKED: Under Argon.

Catalog #:	Qty.	Price$
RN-1545	1gm	12.00
	5gm	40.00
	100gm	550.00

REAGENTS FOR OLIGONUCLEOTIDE SYNTHESIS (Cont.)

TETRAZOLE
(1-H Tetrazole 99%+)



F.W.: 70.06

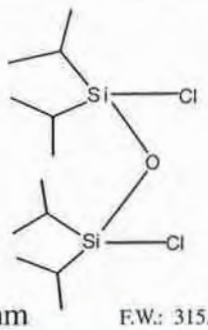
This highly purified product is suitable for direct utilization in triester coupling reagents as well as in phosphoramidite chemistry. ULTRAPURE, RESUBLIMED.

Catalog #:	Qty.	Price$
RN-1411	1gm	12.00
	5gm	57.00
	50gm	165.00
	100gm	255.00
	1kg	550.00

M.P. 157C; white crystalline powder

BIS-SILYLATING REAGENT

1,3-Dichloro-1,1,3,3-tetraisopropyl-Disiloxane



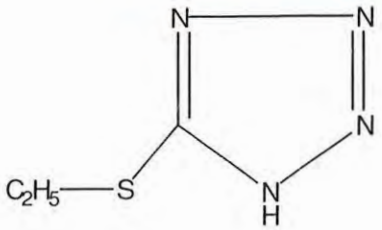
B.P.: 105°C/10mm F.W.: 315.430 d: 0.968

Catalog #:	Qty.	Price$
RN-1521	5gm	60.00
	10gm	110.00
	50gm	350.00

Purity: 96%+ (By functionalization of Uridine under standard reaction conditions)
Packed: Under Argon.
Selective Bis-Silylating Reagent: **This product selectively protects vicinal hydroxy groups in sugars, nucleosides, and modified nucleosides.**

REAGENTS FOR OLIGONUCLEOTIDE SYNTHESIS (Cont.)

5-Ethylthio Tetrazole



Quantity	Price $
1gm	15.00
5gm	65.00
50gm	180.00
100gm	320.00
1kg	850.00

Name: Activation Reagent
5-Ethylthio Tetrazole

Catalog #: RN-6397

Solubility: Completely dissolves in acetonitrile 0.75M solution, (dry anhydrous; H_2O content 0.004-0.005gm/100ml). Leaves no visible particulate matter.

M.P: 86-88C

Composition: 5-Ethylthio Tetrazole
Ultrapure>99% by thin layer chromatography
Colorless crystalline product

F.W: 130.174

Purpose: To activate phosphoramidite for coupling to produce a phosphotriester linkage to produce oligonucleotide.

Coupling Efficiency: >99% for DNA using 0.25M solution
>98% for RNA using 0.75M solution (for large scale RNA)
>98% for RNA using 0.48M solution (for small scale RNA) in anhydrous acetonitrile

5-Thioethyl-tetrazole in RNA Synthesis

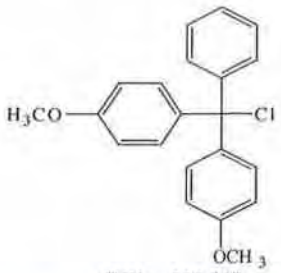
5-Thioethyl-tetrazole *has been demonstrated to be a superior coupling reagent for oligoribonucleotide synthesis. This reagent increases the stepwise coupling efficiency by 2-3% compared to the conventional activator 1-H Tetrazole (B. Sproat, F. Colonna, B. Mullah, D. Tsou, A. Andrus, A. Hampel, R. Vinayak, Nucleosides & Nucleotides, 14, 255, 1995). The total oligonucleotide yield and quality have been shown to increase dramatically when using 5-Thioethyl-tetrazole. Perhaps the greater acidity and stability of 5-Thioethyl-tetrazole accounts for its superior performance. This reagent is especially suitable for large scale oligoribonucleotide synthesis.*

Recently, Damha et. al. have utilized this reagent in RNA synthesis of natural linkage (3', 5') and unnatural linkage (2', 5'), and observed coupling efficiencies greater than 99% and 7.5 minute coupling time. Marita Wasner, Dominique Ariohn, Gadi Borkow, Anne Noronha, Andre Uddin, Michael Parniak and Masad Damha, Biochemistry, 37, 7478-7486 (1998).

REAGENTS FOR OLIGONUCLEOTIDE SYNTHESIS (Cont.)

DMT-CHLORIDE

4,4'-Dimethoxytrityl chloride $C_{21}H_{19}O_2Cl$



F.W.: 338.817

Catalog #:	Qty.	Price$
RN-1401	5 gm	15.00
	25 gm	50.00
	100gm	165.00
	1kg	650.00

Typical Lot Analysis:

Elemental Analysis: Chlorine analysis results within 1gm/mole of the theoretical value, and less than 0.4gm variation per 100gm.
Theoretical Chlorine Value: 35.44gm/mole
Observed Chlorine Value: 36.42gm/mole

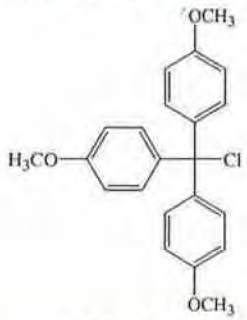
Color: Off-white to faint pink, produces colorless DMT-nucleosides

Application: protecting agent in polynucleotide synthesis

Reactivity: 1.2 equivalent reacts to produce colorless DMT-deoxynucleosides quanti tatively

TMT-CHLORIDE

4,4',4"-Trimethoxytrityl chloride $C_{22}H_{21}O_3Cl$



F.W.: 368.847

Catalog #:	Qty.	Price$
RN-1491	5gm	30.00
	25gm	110.00
	100gm	360.00

REAGENTS FOR OLIGONUCLEOTIDE SYNTHESIS (Cont.)

ChemGenes is offering the following highly purified reagents for DNA Synthesis:

Catalog #	Product	Qty.	Price$
RN-1403	Mesitylene Sulphonyl-3-nitro-1, 2, 4-Triazole $C_{11}H_{12}N_4O_4S$ F.W.: 296.306	1gm 5gm 10gm	30.00 100.00 165.00
RN-1405	Triisopropyl benzene sulphonyl tetrazole $C_{16}H_{24}N_4O_2S$ F.W.: 336.45	1gm 5gm 10gm	15.00 55.00 85.00
RN-1407	Dichloromethoxy phosphite $CH_3O\text{-}P(Cl)_2$ F.W.: 132.919	1gm 5gm	15.00 70.00
RN-1408	Diethyl phosphorochloride $(C_2H_5O)_2PCl$ F.W.: 156.552 Capping reagent during DNA synthesis	10gm	65.00
RN-1409	Chloro N,N-Diisopropyl methoxy phosphoramidite $[(CH_3)_2CH]_2N\text{-}P(Cl)OCH_3$ F.W.: 197.649	1gm 25gm 100gm	13.25 220.00 680.00
RN-1410	Diethoxy N,N-Diisopropyl phosphoramidite $[(CH_3)_2CH]_2\ N\text{-}P(OC_2H_5)_2$ F.W.: 221.275	5gm	75.00

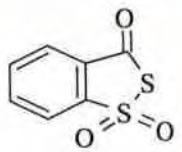
A stable capping reagent. This reagent is utilized for capping directly during oligodeoxynucleotide synthesis by phosphoramidite method and avoids preparation of commonly used and rather unstable Diethylphosphotriazolide capping reagent.

RN-1412	1, 2, 4-Triazole $C_2H_3N_3$ F.W.: 69.07	25gm 100gm 500gm	14.00 52.00 165.00
RN-1414	3-Nitro-1, 2, 4-Triazole $C_2H_2N_4O_2$ F.W.: 114.066	5gm 100gm	67.00 905.00
RN-1421	Ortho-Chlorophenyl phosphorodichloridate $C_6H_4Cl_3PO_2$ F.W: 245.437	5gm 25gm	16.00 48.00
RN-1440	Pyridine-2-Carboxaldoxime $C_6H_6N_2O$ F.W: 22.13, m.p. 110-112°	5gm 25gm	18.50 38.65
RN-1445	N, N, N', N' - Tetramethyl Guanidine $C_5H_{13}N_3$ F.W: 115.20	10ml 25ml	15.00 35.00

TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

REAGENTS FOR OLIGONUCLEOTIDE SYNTHESIS (Cont.)

Catalog #	Product	Qty.	Price$
RN-1449	Biotin-Amido Caproate-N-hydroxy succinimide (Biotinylation Reagent with amino caproate spacer) F.W: 454.5	25mg 100mg	10.00 35.00
RN-1500	Biotin Ester (N-Hydroxysuccinimide) F.W: 341.374	100mg	25.00
RN-1510	N,N-Diisopropylamino, methyl-phosphonamidic-chloride $[\,(CH_3)_2CH\,]_2N\ Cl\text{-}P\text{-}CH_3$ F.W.: 181.646 B.P. 73-74/0.05mm	5gm 50gm	120.00 890.00
RN-1535	"Beaucage Reagent"* Introduction of Phosphorothioate "Sulfurizing Reagent"	100mg 1.0gm 2.0gm	15.00 50.00 90.00



F.W.: 200.236

BL-1535	Silanized Bottle *no charge when ordered with Sulfurizing Reagent*	100ml 250ml 500ml	8.00 8.00 8.00

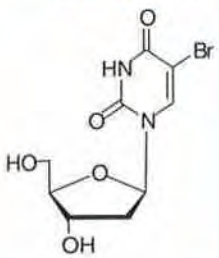
*Under license, US Patent #5,003,097

SECTION 21 : DEOXYNUCLEOSIDES

NATURAL AND MODIFIED DEOXY NUCLEOSIDES

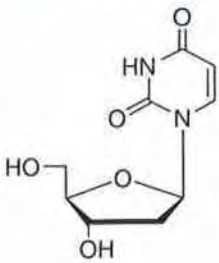
Catalog #	Product	Price$ /gm	/5gm	/25gm	/100gm	/500gm	/kg
DN-1001	**2'-deoxy Adenosine monohydrate** 98%+ F.W.: 269.260	5.25	18.50	72.50	277.00	1,277.00	2,200.00
DN-1002	**2'-deoxy Cytidine monohydrochloride** 99%+ F.W.: 263.680	5.25	18.50	72.50	277.00	1,277.00	2,200.00
DN-1003	**2'-deoxy Guanosine monohydrate** 99%+ F.W.: 285.260	8.50	26.60	102.80	370.00	1,437.00	2,500.00
DN-1004	**Thymidine** 99%+ F.W.: 242.23	4.00	11.50	55.90	195.00	741.75	1,290.00

DN-1136 5-Bromo-2'-deoxy Uridine



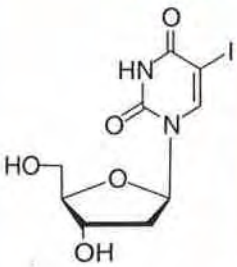
Catalog #: DN-1136
F.W: 307.10
Prices $: 6.50/100mg.
18.00/500mg.
122.00/5gm.
Purity: 98%+

2'- deoxy Uridine



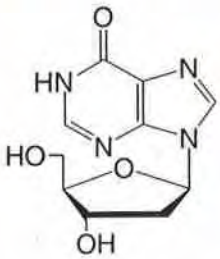
Catalog #: DN-6373
F.W.: 228.20
Prices$: 16.50/1gm
75.00/5gm
135.00/10gm
Purity 99%+

DN-1184 5-Iodo-2'-deoxy Uridine



Catalog #: DN-1184
F.W: 354.10
Prices $:10.00/500mg
20.00/1gm
90.00/5gm.
Purity: 98%+

2'- deoxy Inosine



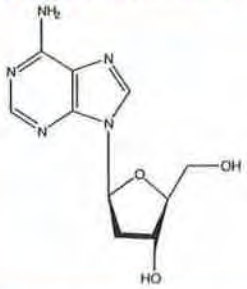
Catalog #: DN-4002
F.W.: 252.23
Prices$:18.50/1gm
82.50/5gm
155.00/10gm
Purity 99%+

TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

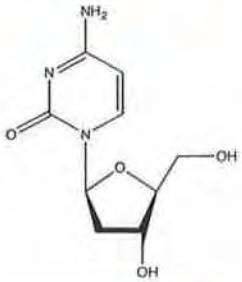
NATURAL AND MODIFIED DEOXY NUCLEOSIDES (Cont.)

β-L-Deoxy Nucleosides

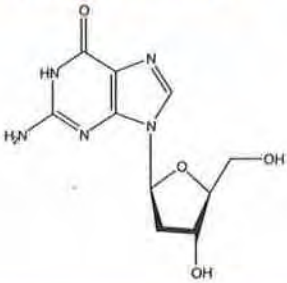
DN-8031 β-L-2'-deoxy Adenosine



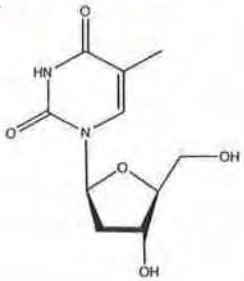
DN-8032 β-L-2'-deoxy Cytidine



DN-8033 β-L-2'-deoxy Guanosine



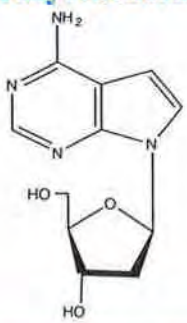
DN-8034 β-L-Thymidine



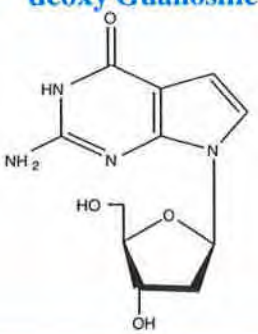
Catalog #	Name	Prices 100mg	500mg	1.0gm
DN-8031	β–L-2'-deoxy Adenosine F.W: 251.10	45.00	165.00	275.00
DN-8032	β–L-2'-deoxy Cytidine F.W: 227.09	45.00	165.00	275.00
DN-8033	β–L-2'-deoxy Guanosine F.W: 267.10	45.00	165.00	275.00
DN-8034	β–L-Thymidine F.W: 242.09	45.00	165.00	275.00

7-Deaza-2'-Deoxy Nucleosides

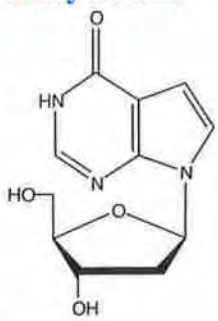
DN-1143 7-deaza-2'-deoxy Adenosine



DN-4567 7-deaza-2'-deoxy Guanosine



DN-1145 7-deaza-2'-deoxy Inosine



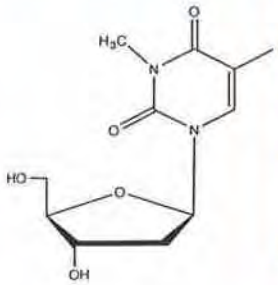
Catalog #	Name	Prices 100mg	500mg	1.0gm
DN-1143	7- Deaza-2'-deoxy Adenosine F.W: 250.25	45.00	225.00	725.00
DN-4567	7- Deaza-2'-deoxy Guanosine F.W: 266.25	45.00	225.00	725.00
DN-1145	7- Deaza-2'-deoxy Inosine F.W: 251.24	45.00	225.00	725.00

Purity: Greater than 98% by the criteria of UV emax, HPLC, 'H NMR and TLC

TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

NATURAL AND MODIFIED DEOXY NUCLEOSIDES (Cont.)

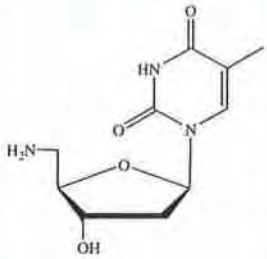
DN-1599 N^3 methyl Thymidine



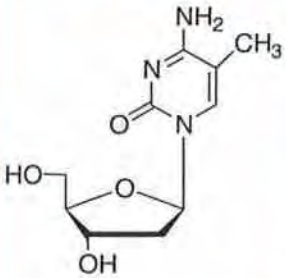
Catalog #: DN-1599
F.W: 256.26
Prices $: 42.00/ 25 mg.
126 / 100mg.
Purity: 98%+

DN-6489 5'amino-2'-deoxy Thymidine

Catalog #: DN-6489
F.W: 241.11
Purity: 98%+
Prices $: 45.00/ 50 mg.
75.00/ 100 mg.
210.00/ 250 mg.
Purity: 98%+



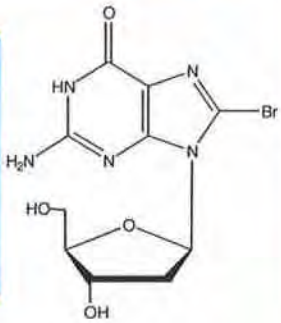
DN-2013 5-methyl-2'-deoxy Cytidine



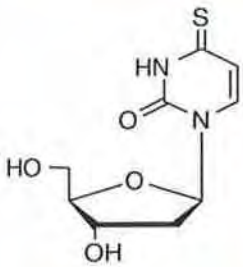
Catalog #: DN-2013
F.W: 241.24
Prices $: 18.00/ 25mg
52.00/ 100 mg..
Purity: 98%+

DN-1203 8-Bromo-2'-deoxy Guanosine

Catalog #: DN-1203
F.W: 346.26
Purity: 98%+
Prices $:22.00/100mg
84.00/1gm
155.00/5gm
Purity: 98%+



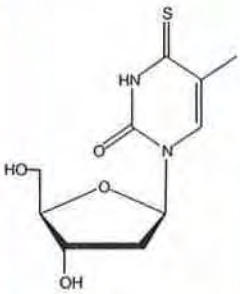
DN-1263 4-thio-2'-deoxy-Uridine



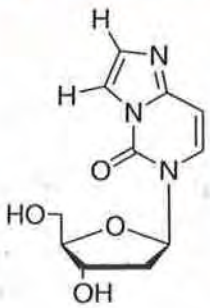
Catalog #: DN-1263
F.W: 244.27
Purity: 98%+
Prices $: 45.00/50mg
75.00/100mg
210.00/250mg
Purity: 98%+

DN-1781 4-thio-Thymidine

Catalog #: DN-1781
F.W: 258.30
Purity: 98%+
Prices $: 45.00/50mg
75.00/100mg
210.00/250mg
Purity: 98%+



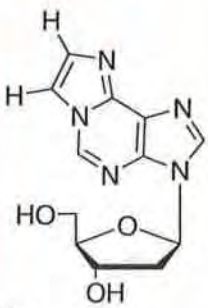
DN-4252 Etheno-2'-deoxy Cytidine



Catalog #: DN-4252
F.W.: 251.23
Prices$:28.00/25mg
55.00/100mg
Purity: 98.5%

DN-4895 Etheno-2'-deoxy Adenosine

Catalog #: DN-4895
F.W: 275.264
Prices$:15.50/10mg
32.00/25mg
100.00/100mg
Purity: 98.5%



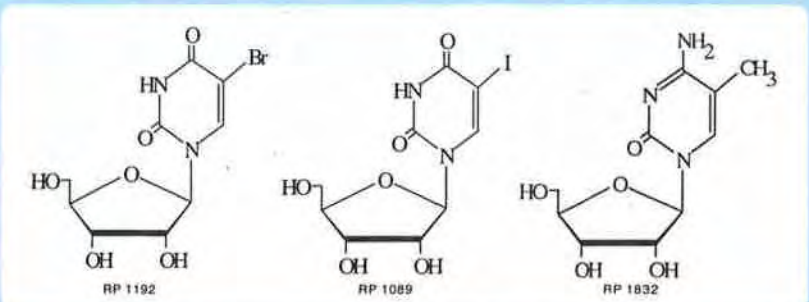
Purity Criteria : Greater than 98% by HPLC, TLC & UV (Ɛmax values)

TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

NATURAL AND MODIFIED RIBO NUCLEOSIDES

Catalog #	Product	Price $/gm	$/5gm	$/100gm	$/kg
RP-1183	ribo Adenosine Purity: 98%+ F.W.: 267.25	6.25	8.00	145.00	1,125.00
RP-1184	ribo Cytidine Purity: 98%+ F.W.: 243.22	7.50	12.50	185.00	1,265.00
RP-1185	ribo Guanosine (Guanosine hydrate) Purity: 98%+ F.W: 283.244	3.50	4.50	85.00	685.00
RP-1186	ribo Uridine Purity: 99% F.W.: 244.20	7.50	10.50	165.00	1,220.00
RP-1187	ribo Inosine Purity: 99% F.W.: 268.23	6.25	8.50	85.00	685.00

Catalog #	Product	Price$
RP-1192	5-Bromo-ribo Uridine Purity: 99%+ F.W.: 323.10	$10.00/250mg $16.00/500mg $26.00/gm
RP-1089	5-Iodo-ribo Uridine Purity: 98%+ F.W.: 370.10	$8.50/250mg $15.50/500mg $25.50/gm
RP-1832	5-Methyl-ribo Cytidine Purity: 99%+ F.W.: 257.246	$30.00/25 mg $70.00/50 mg $355.00/gm



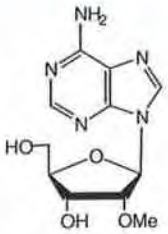
Purity determined by HPLC, TLC & UV (Ɛmax values)

TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

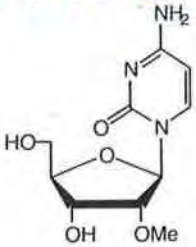
NATURAL AND MODIFIED RIBO NUCLEOSIDES (Cont.)

2'-O-Methyl Ribonucleosides

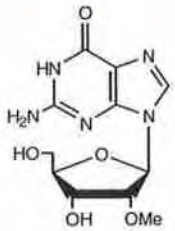
RP-1901 2'-(O-Methyl)-Adenosine



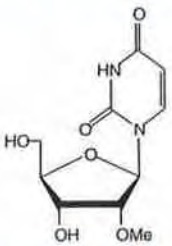
RP-1902 2'-(O-Methyl)-Cytidine



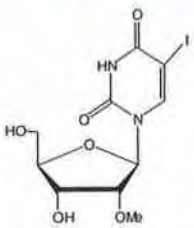
RP-1903 2'-(O-Methyl)-Guanosine



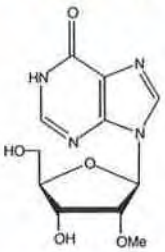
RP-1904 2'-(O-Methyl)-Uridine



RP-1905 5-Iodo-2'-(O-Methyl)-Uridine



RP-1906 2'-(O-Methyl)-Inosine



Catalog #	Name	Price 100mg	1gm	10gm
RP-1901	2'-(O-Methyl)-Adenosine F.W: 281.11	22.00	50.00	465.00
RP-1902	2'-(O-Methyl)-Cytidine F.W: 257.24	22.00	50.00	465.00
RP-1903	2'-(O-Methyl)-Guanosine F.W: 297.27	38.00	65.00	625.00
RP-1904	2'-(O-Methyl)-Uridine F.W: 258.23	22.00	50.00	465.00
RP-1905	5-Iodo-2'-(O-Methyl)-Uridine F.W: 383.98	38.00	165.00	
RP-1906	2'-(O-Methyl)-Inosine F.W: 282.25	26.00	165.00	

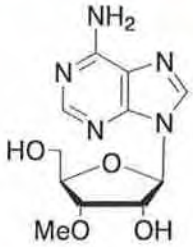
Purity: Greater than 98% by HPLC, TLC & UV (Ɛmax values)

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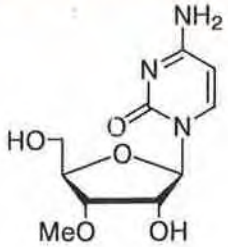
NATURAL AND MODIFIED RIBO NUCLEOSIDES (Cont.)

3'-O-Methyl Ribonucleosides

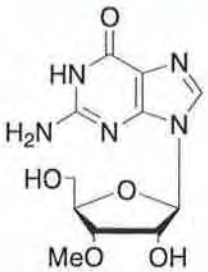
RP-2901 3'-(O-Methyl)-Adenosine



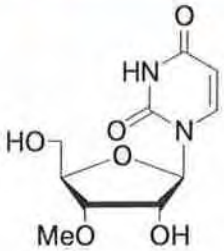
RP-2902 3'-(O-Methyl)-Cytidine



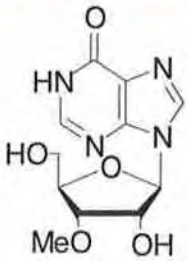
RP-2903 3'-(O-Methyl)-Guanosine



RP-2904 3'-(O-Methyl)-Uridine



RP-2905 3'-(O-Methyl)-Inosine



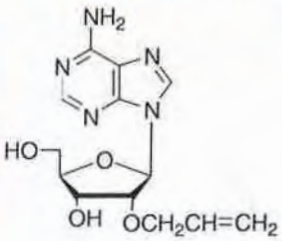
Catalog #	Name	Price 10mg.	100mg.
RP-2901	3'-(O-Methyl)-Adenosine F.W: 281.11	32.00	185.00
RP-2902	3'-(O-Methyl)-Cytidine F.W: 257.24	44.00	240.00
RP-2903	3'-(O-Methyl)-Guanosine F.W: 297.27	36.00	210.00
RP-2904	3'-(O-Methyl)-Uridine F.W: 258.23	32.00	185.00
RP-2905	3'-(O-Methyl)-Inosine F.W: 282.25	44.00	245.00

Purity: Greater than 98% by HPLC, TLC & UV (Ɛmax values)

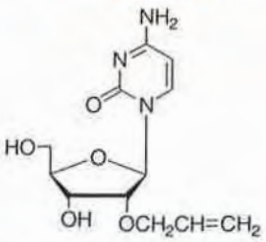
NATURAL AND MODIFIED RIBO NUCLEOSIDES (Cont.)

2'-O-Allyl Ribonucleosides

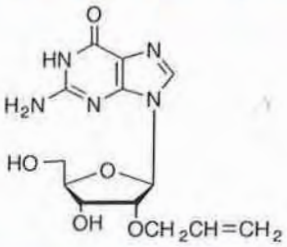
RP- 3501
2'-O-allyl Adenosine



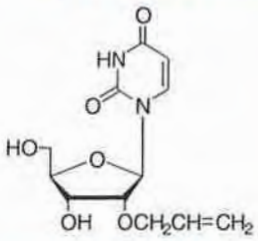
RP-3502
2'-O-allyl Cytidine



RP-3503
2'-O-allyl Guanosine



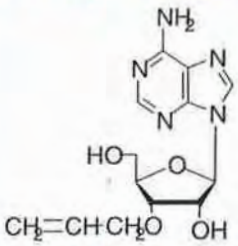
RP-3504
2'-O-allyl Uridine



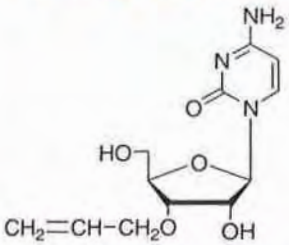
Catalog #	Name	Price 10mg	Price 100mg
RP-3501	2'-O-allyl-Adenosine F.W: 307.31	38.00	186.00
RP-3502	2'- O-allyl-Cytidine F.W: 283.28	44.00	236.00
RP-3503	2'- O-allyl-Guanosine F.W: 321.260	46.00	238.00
RP-3504	2'- O-allyl-Uridine F.W: 284.27	38.00	186.00

3'-O-Allyl Ribonucleosides

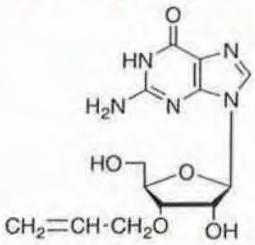
RP-3101
3'-O-allyl Adenosine



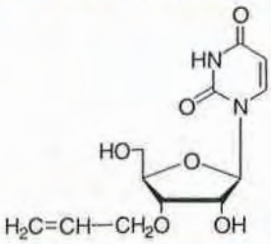
RP-3102
3'-O-allyl Cytidine



RP-3103
3'-O-allyl Guanosine



RP-3104
3'-O-allyl Uridine



Catalog #	Name	Price 10mg	Price 100mg
RP-3101	3'-O-allyl-Adenosine F.W: 307.31	48.00	220.00
RP-3102	3'- O-allyl-Cytidine F.W: 283.28	46.00	212.00
RP-3103	3'- O-allyl-Guanosine F.W: 321.260	52.00	248.00
RP-3104	3'- O-allyl-Uridine F.W: 284.27	46.00	210.00

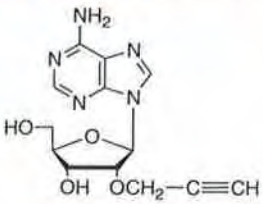
Purity: Greater than 98% by HPLC, TLC & UV (Ɛmax values)

TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

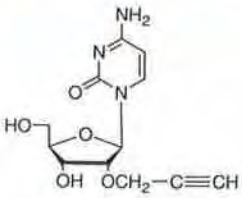
NATURAL AND MODIFIED RIBO NUCLEOSIDES (Cont.)

2'-O-Propargyl Ribonucleosides

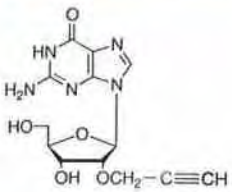
RP-3401 2'-O-propargyl-Adenosine



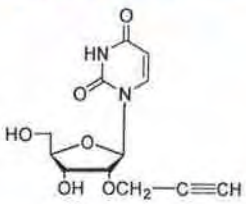
RP-3402 2'-O-propargyl-Cytidine



RP-3403 2'-O-propargyl-Guanosine



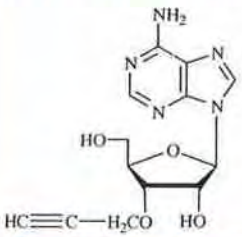
RP-3404 2'-O-propargyl-Uridine



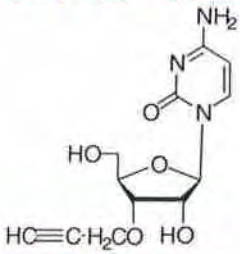
Catalog #	Name	Price 10mg	Price 100mg
RP-3401	2'-O-propargyl-Adenosine F.W: 305.29	38.00	186.00
RP-3402	2'- O- propargyl-Cytidine F.W: 281.26	44.00	236.00
RP-3403	2'- O- propargyl-Guanosine F.W: 319.26	46.00	238.00
RP-3404	2'- O- propargyl-Uridine F.W: 282.25	38.00	186.00

3'-O-Propargyl Ribonucleosides

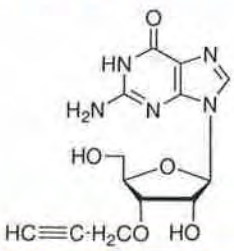
RP-3301 3'-O-propargyl Adenosine



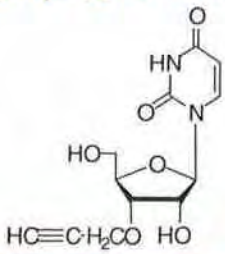
RP-3302 3'-O-propargyl Cytidine



RP-3303 3'-O-propargyl Guanosine



RP-3304 3'-O-propargyl Uridine

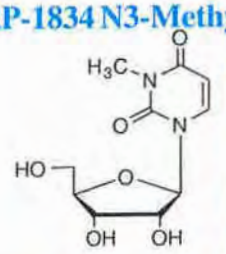


Catalog #	Name	Price 10mg	Price 100mg
RP-3301	3'-O-propargyl-Adenosine F.W: 305.29	48.00	220.00
RP-3302	3'- O- propargyl-Cytidine F.W: 281.26	46.00	212.00
RP-3303	3'- O- propargyl-Guanosine F.W: 319.26	52.00	248.00
RP-3304	3'- O- propargyl-Uridine F.W: 282.25	46.00	210.00

Purity: Greater than 98% by HPLC, TLC & UV (Ɛmax values)

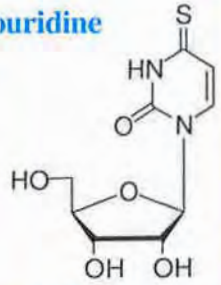
NATURAL AND MODIFIED RIBO NUCLEOSIDES (Cont.)

RP-1834 N3-Methyl Uridine



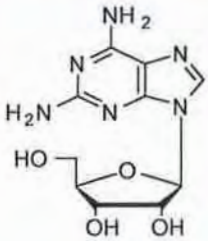
Catalog #: RP-1834
F.W: 258.23
Prices $: 65.00/ 25.00 mg
180.00/ 100 mg.
Purity: 98%+

RP-2304 4-Thiouridine



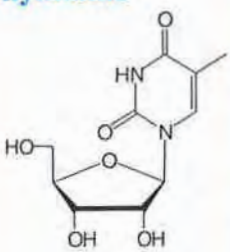
Catalog #: RP-2304
F.W: 260.27
Prices $: 110.00 / 100 mg.
220.00 / 250 mg.

RP-8334 2,6-Diaminopurine Riboside



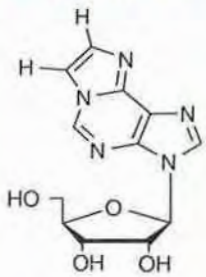
Catalog #: RP-8334
F.W: 282.26
Prices $: 20.00/ 1gm.
185.00/ 10 gm.
Purity: 98%+

RP-1188 Ribo Thymidine



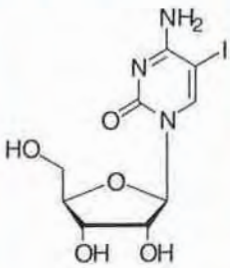
Catalog #: RP-1188
F.W: 258.23
Prices $: 16.00 / 25 mg.
48.00/ 100 mg.
265.00 / 1.0 gm.
Purity: 98%+

RP-2310 Etheno Adenosine



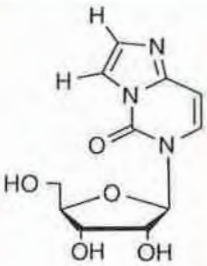
Catalog #: RP-2310
F.W: 291.26
Prices $: 38.00 / 25 mg.
125.00/ 100 mg.
Purity: 98%+

RP-1020 5-Iodo-Cytidine



Catalog #: RP-1020
F.W: 369.11
Prices $: 35.50/ 25 mg.
87.20/ 100 mg.
Purity: 98%+

RP-2311 Etheno Cytidine

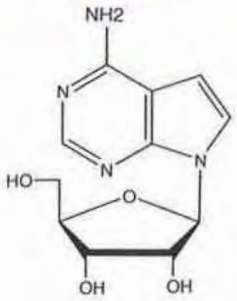


Catalog #: RP-2311
F.W: 267.24
Prices $: 26.00 / 25 mg.
86.00 / 100 mg.
Purity: 98%+

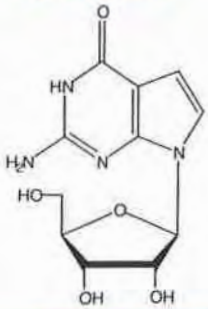
Purity: Greater than 98% by HPLC, TLC & UV (εmax values)

NATURAL AND MODIFIED RIBO NUCLEOSIDES (Cont.)

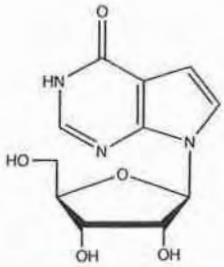
RP-2312 7-deaza Adenosine



RP-2313 7-Deaza Guanosine

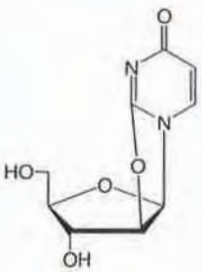


RP-2314 7-deaza-Inosine



Catalog #	Name	Price 10mg	100mg	250mg
RP-2312	7-Deaza Adenosine (Tubercidin) F.W: 266.25	12.50	95.00	135.00
RP-2313	7-Deaza Guanosine F.W: 282.25	24.00	165.00	310.00
RP-2314	7-Deaza Inosine F.W: 267.24	18.00	120.00	186.00

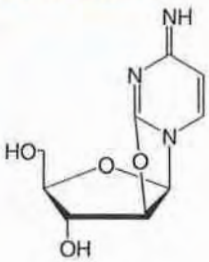
RP-4876 2,2'-Anhydro-ribo Uridine (β-D-O2,2'-Cyclouridine)



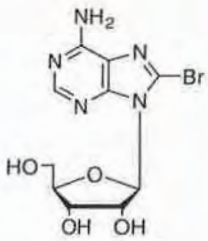
Catalog #: RP-4876
F.W: 226.06
Prices $:125.00 / 5gm.
Purity: 98%+

RP-3765 2,2'-Anhydro-ribo Cytidine HCL (β–D-O2, 2' Cyclocytidine, Ancitabine)

Catalog #: RP-3765
F.W: 261.52
Prices $: 19.00/ 1.0 gm
85.00/ 5.0 gm.
Purity: 98%+



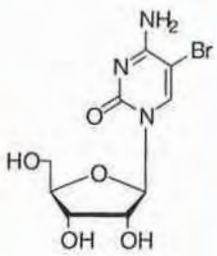
RP-1014 8-Bromo Adenosine



Catalog #: RP-1014
F.W: 346.14
Prices $:26.00 /1.0 gm.
85.00 / 5 gm.
Purity: 98%+

RP-1015 5-Bromo Cytidine

Catalog #: RP-1015
F.W: 322.11
Prices $: 32.00 / 1.0 gm
95.00/ 5.0 gm
Purity: 98%+



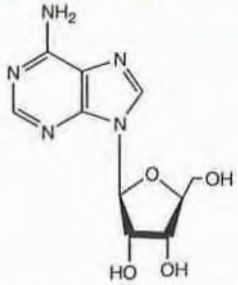
Purity: Greater than 98% by HPLC, TLC & UV (Ɛmax values)

TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

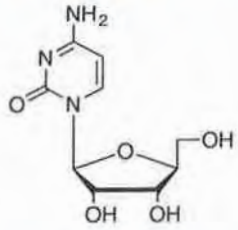
NATURAL AND MODIFIED RIBO NUCLEOSIDES (Cont.)

β-L-Ribonucleosides (Mirror Image of Natural Ribonucleosides

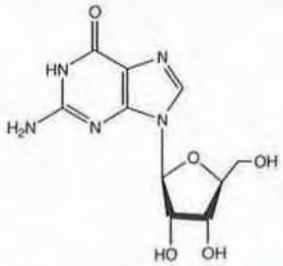
RP-9031 β-L-Adenosine



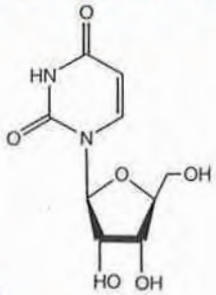
RP-9032 β-L-Cytidine



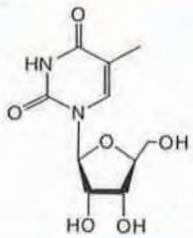
RP-9033 β-L-Guanosine



RP-9034 β-L-Uridine



RP-9035 β-L-ribo Thymidine



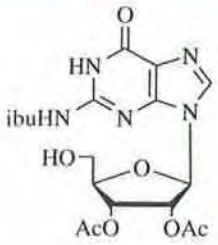
Catalog #	Name	Price 10mg	25mg	100mg
RP-9031	β–L-Adenosine F.W: 267.24	65.00	110.00	285.00
RN-9032	β–L-Cytidine F.W: 243.22	65.00	110.00	285.00
RN-9033	β–L-Guanosine F.W: 283.24	78.00	122.00	326.00
RN-9034	β–L-Uridine F.W: 244.20	65.00	110.00	285.00
RN-9035	β–L-ribo Thymidine F.W: 258.23	75.00	112.00	310.00

Purity: Greater than 98% by HPLC, TLC & UV (Ɛmax values)

TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

PROTECTED NUCLEOSIDES AND SUGARS (Cont.)

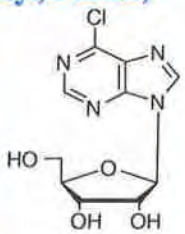
RP-2282 2',3'-Diacetyl Guanosine (n-ibu)



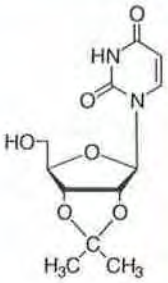
Catalog #: RP-2248
F.W: 437.40
Prices $: 75.00/ 1 gm
225.00/ 5 gm.
Purity: 98%+

RP-6649 6-Chloro-Inosine (6-Chloro-9-(β-D-ribofuranosyl) Purine)

Catalog #: RP-6649
F.W: 286.67
Prices $: 48.00/ 1.0 gm
225.00/ 5 gm.
Purity: 98%+



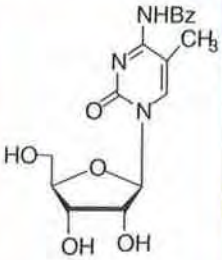
RP-4129 Uridine 2',3'-isopropylidine



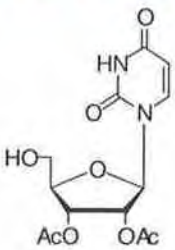
Catalog #: RP-4129
F.W: 284.27
Prices $: ~~65.00~~/ gm 85.00
~~226.00~~/ 5 gm
Purity: 98%+

RP-4122 5-Methyl-Cytidine (N4-benzoyl)

Catalog #: RP-4122
F.W: 361.35
Prices $: 32.00/ 25 mg.
75.00/ 100 mg
455.00/ 1 gm.
Purity: 98%+

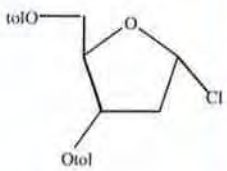


RP-2249 2',3' Diacetyl Uridine



Catalog #: RP-2249
F.W: 328.09
Prices $: 38.00/ 1.0 gm
126.00/ 5gm
Purity: 98%+

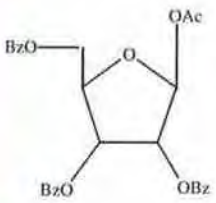
RP-4130 1-α-Chloro-3',5'-Ditoluoyl-2-Deoxy-D-Ribose



Catalog #: RP-4130
F.W: 388.85
Prices $: 36.00/ gm
152.00/ 5 gm
Purity: 98%+

RP-4131 2,3,5-O-Tribenzoyl--β–D-Ribofuranosyl-1-Acetate

Catalog #: RP-4131
F.W: 504.5
Prices $: 26.00/ 5 gm
106.00/ 25 gm
Purity: 98%+



Purity: Greater than 98% by HPLC, TLC & UV (Ɛmax values)

TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

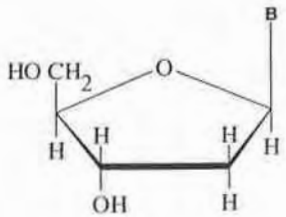
PARTIALLY PROTECTED 2'-DEOXY MONONUCLEOSIDES (PM)

INTRODUCTION:

ChemGenes Corporation is committed to the production and development of Partially Protected Mononucleosides (PM) units of the highest purity at very reasonable prices to the scientific community.

PM units find wide application in DNA synthesis as intermediates in one of the several presently available methodologies. These intermediates are also available in bulk quantities.

Deoxynucleosides with Heterocyclic base protection

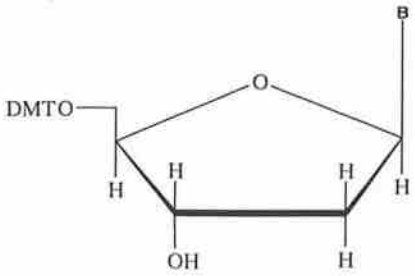


B	Cat. #
bzA	PM 1101
bzC	PM 1102
ibuG	PM 1103
ibuC	PM 1104
acC	PM 1105

Catalog #	Product	Prices 1 gm	5gm
PM-1101	deoxy Adenosine (N-bz) F.W.: 355.346	12.00	55.00
PM-1102	deoxy Cytidine (N-bz) F.W.: 331.317	12.00	55.00
PM-1103	deoxy Guanosine (N-ibu) F.W: 337.332	15.00	60.00
PM-1104	deoxy Cytidine (N-ibu) F.W.: 297.303	15.00	70.00
PM-1105	deoxy Cytidine (N-acetyl) F.W.: 269.251	18.00	85.00

PARTIALLY PROTECTED 2'- DEOXY MONONUCLEOSIDES (PM) (Cont.)

5'-DMT-Deoxynucleosides



B	Cat. #
bzA	PM 1109
bzC	PM 1110
ibuG	PM 1111
T	PM 1112
ibuC	PM 1117
acC	PM 1118

Catalog #	Product	Prices $/gm	$/5gm	$/10gm	$/100gm
PM-1109	5'-DMT-deoxy Adenosine (N-bz) F.W:. 657.698	18.00	80.00	145.00	1,200.00
PM-1110	5'-DMT-deoxy Cytidine (N-bz) F.W.: 633.669	18.00	80.00	145.00	1,200.00
PM-1111	5'-DMT-deoxy Guanosine (N-ibu) F.W.: 639.684	18.00	80.00	145.00	1,200.00
PM-1112	5'-DMT Thymidine F.W: 544.582	12.00	52.00	92.00	850.00
PM-1113	4gm KIT (1gm each of the above 4 products):			$ 62.00	
PM-1114	20gm KIT (5gm each of the above 4 products):			$ 280.00	
PM-1115	40gm KIT (10gm each of the above 4 products):			$ 535.00	
PM-1116	400gm KIT (100gm each of the above 4 products):			$ 4,425.00	
PM-1117	5'-DMT-deoxy Cytidine (N-ibu) F.W.: 599.655	18.00	80.00	145.00	1,200.00
PM-1118	5'-DMT-deoxy Cytidine (N-acetyl) F.W: 571.603	23.00	85.00	145.00	1,200.00

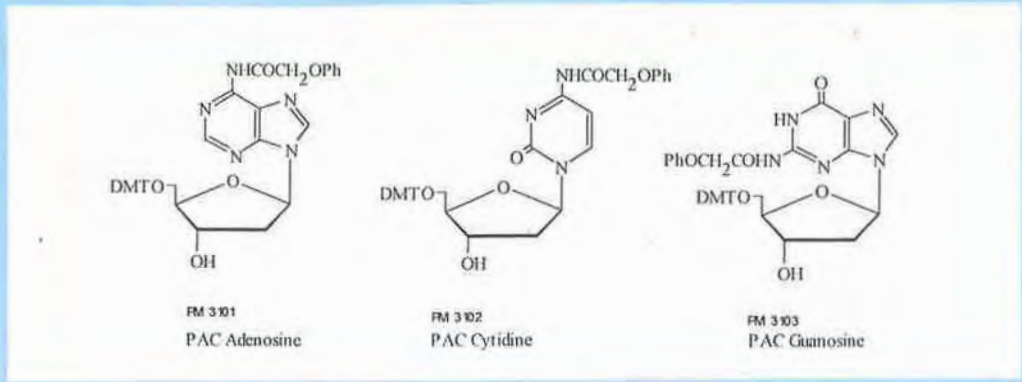
** Please specify whether bz-Cytidine, ibu-Cytidine, or ac-Cytidine (PM-1110, PM-1117, or PM-1118) when ordering.

* 99.5% Purity *

** Available in the above quantities or in multiple quantities **

PARTIALLY PROTECTED 2' -DEOXY MONONUCLEOSIDES (PM) (Cont.)

N-PAC-5'-DMT-Deoxynucleosides

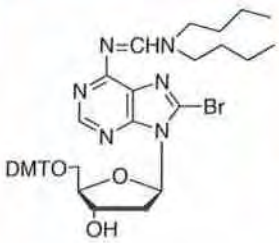


Catalog #	Product	Prices $/gm	$/5gm	$/10gm
PM-3101	N-PAC-5'-DMT-deoxy Adenosine F.W.: 687.724	25.00	112.00	198.00
PM-3102	N-PAC-5'-DMT-deoxy Cytidine F.W.: 663.695	25.00	112.00	198.00
PM-3103	N-PAC-5'-DMT-deoxy Guanosine F.W.: 703.724	28.00	126.00	224.00
PM-1112	5'-DMT Thymidine F.W: 544.582	12.00	52.00	92.00

* 98% Purity *
99.5% Purity for PM-1112
by HPLC, TLC, UV (Ɛmax Values)
** Available in the above quantities or in multiple quantities **

PARTIALLY PROTECTED 2'- DEOXY MONONUCLEOSIDES (PM) (Cont.)

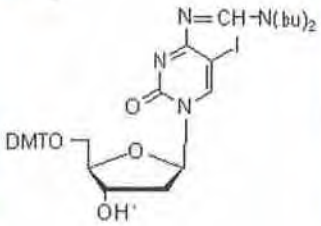
PM-4791 5'-DMT-8-Bromo-2'-deoxy Adenosine (N,N-dibutyl formamidine)



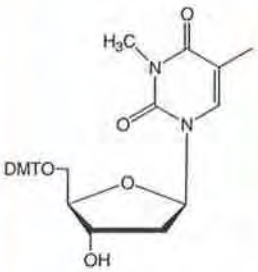
Catalog #: PM-4791
F.W: 771.74
Prices $: 65.00/ 1 gm
215.00/ 5gm
Purity: 98%+

PM-1978 5'-DMT- 5-Iodo 2'-deoxy Cytidine (N,N-dibutyl formamidine)

Catalog #: PM-1978
F.W: 697.81
Prices $: 120.00/ 1.0 gm.
Purity: 98%+



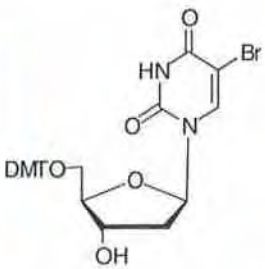
PM-1599 5'-DMT- N3-Methyl Thymidine



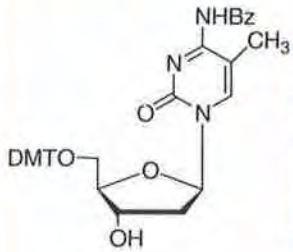
Catalog #: PM-1599
F.W: 558.62
Prices $: 65.00/ 1 gm
216.00/ 1 gm
Purity: 98%+

PM-2808 5'-DMT-5-Bromo- 2'-deoxy Uridine

Catalog #: PM-2808
F.W: 609.46
Prices $: 45.00 / 1.0 gm
186.00/ 5 gm.
Purity: 98%+



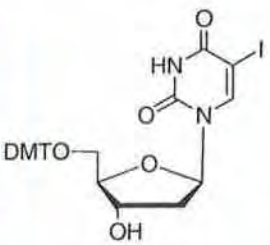
PM-1967 5'-DMT-5-methyl -2'-deoxy Cytidine(n-bz)



Catalog #: PM-1967
F.W: 647.72
Prices $: 45.00/ 1 gm
186.00/ 5 gm
Purity: 98%+

PM-2864 5'-DMT- 5-Iodo-2'-deoxy Uridine

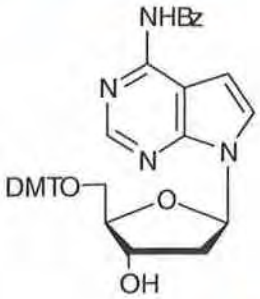
Catalog #: PM-2864
F.W: 656.47
Prices $: 45.00 / 1.0 gm
186.00 / 5 gm.
Purity: 98%+



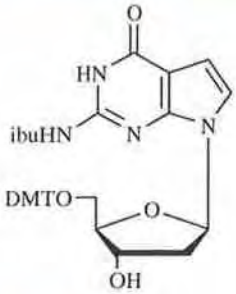
TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

PARTIALLY PROTECTED 2'- DEOXY MONONUCLEOSIDES (PM) (Cont.)

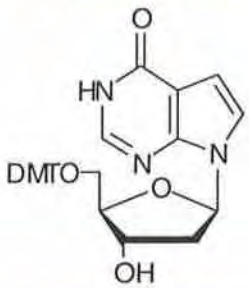
PM-6431 5'-DMT-7-deaza-deoxy Adenosine (N-bz)



PM-6433 5'-DMT-7-deaza-deoxy Guanosine (N-ibu)

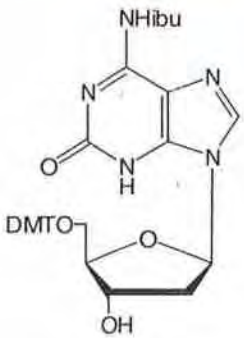


PM-6434 5'-DMT-7-deaza deoxy Inosine



Catalog #	Name	Price 1gm	5 gm	10 gm
PM-6431	5'-DMT-7-Deaza-2'-deoxy Adenosine(bz) F.W: 656.73	112.00	475.00	785.00
PM-6433	5'-DMT-7-Deaza-2'-deoxy Guanosine(ibu) F.W: 638.27	124.00	490.00	844.00
PM-6434	5'-DMT-7-Deaza-2'-deoxy Inosine F.W: 553.61	120.00	495.00	810.00

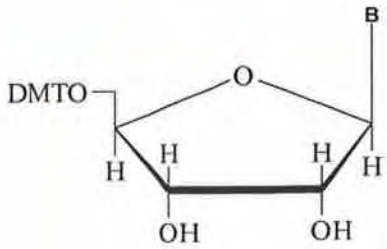
PM-1643 5'-DMT 2'-Deoxy-Isoguanosine(n-ibu)



Catalog #: PM-1643
F.W: 639.68
Prices $: 85.00/ 1.0 gm
Purity: 98%+

PARTIALLY PROTECTED MONONUCLEOSIDES (PM)

5'-DMT-Ribonucleosides



B	Cat. #
bzA	PM2109
bzC	PM2110
ibuG	PM2111
U	PM2112
ibuC	PM2113
acC	PM2114

Catalog #	Product	Prices $/gm	$/5gm
PM-2109	5'-DMT-ribo Adenosine (N-bz) F.W.: 673.698	33.00	142.00
PM-2110	5'-DMT-ribo Cytidine (N-bz) F.W.: 649.669	33.00	142.00
PM-2111	5'-DMT-ribo Guanosine (N-ibu) F.W.: 655.684	35.00	146.00
PM-2112	5'-DMT-ribo Uridine F.W: 546.552	26.00	128.00
PM-2115	4gm KIT (1gm each of the above 4 products):		$126.00
PM-2116	20gm KIT (5gm each of the above 4 products):		$530.00
PM-2113	5'-DMT-ribo Cytidine (N-ibu) F.W.: 615.655	40.00	142.00
PM-2114	5'-DMT-ribo Cytidine (N-acetyl) F.W.: 587.603	42.00	185.00

** Please specify whether bz-Cytidine, ibu-Cytidine, or ac-Cytidine (PM-2110, PM-2113, or PM-2114) when ordering.

* 99.5% Purity *

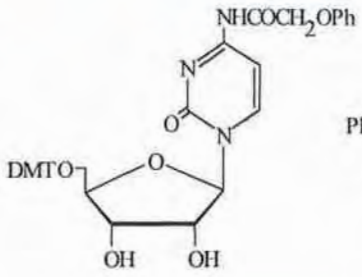
** Available in the above quantities or in multiple quantities **

PARTIALLY PROTECTED MONONUCLEOSIDES (PM) (Cont.)

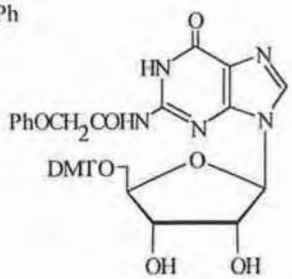
N-PAC-5'-DMT-Ribonucleosides



RM 2203
PAC Adenosine



RM 2204
PAC Cytidine



RM 2205
PAC Guanosine

Catalog #	Product	Prices $/gm	$/5gm	$/10gm
PM-2203	N-PAC-5'-DMT-ribo Adenosine F.W.: 703.724	35.00	148.00	245.00
PM-2204	N-PAC-5'-DMT-ribo Cytidine F.W.: 679.695	35.00	148.00	245.00
PM-2205	N-PAC-5'-DMT-ribo Guanosine F.W.: 719.724	35.00	148.00	245.00
PM-2112	5'-DMT-ribo Uridine F.W: 546.552	26.00	128.00	200.00

* 98%+ Purity *

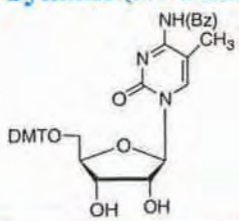
** Available in the above quantities or in multiple quantities **

PM-1834 5'-DMT-8-Bromo-Adenosine



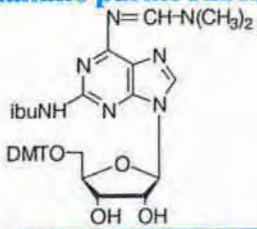
Catalog #: PM-1834
F.W: 787.7
Prices $: 86.00 /gm
Purity: 98%+

PM-2647 5'-DMT-5-methyl-Cytidine (N4-benzoyl)



Catalog #: PM-2647
F.W: 663.72
Prices $: 134/ gm
Purity: 98%+

PM-2476 5'-DMT-2,6-diamino purine Riboside

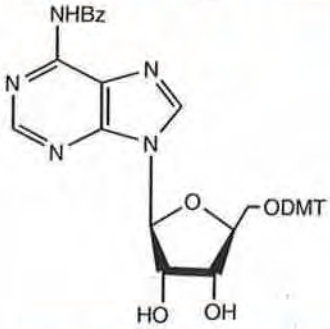


Catalog #: PM-2476
F.W: 709.68
Prices $: 85.00 / gm
Purity: 98%+

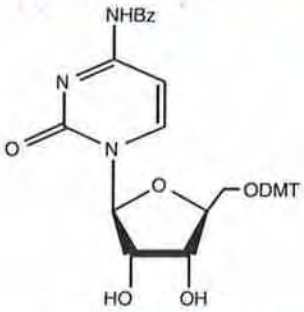
PARTIALLY PROTECTED MONONUCLEOSIDES (PM) (Cont.)

β-L-Ribonucleosides-5'-DMT-N-Protected

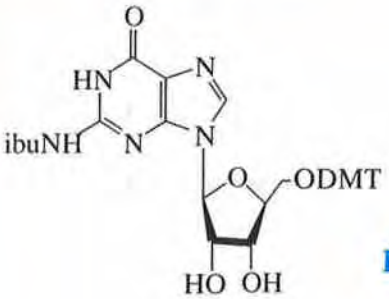
PM-9031 5'-DMT-β-L-Adenosine(n-bz)



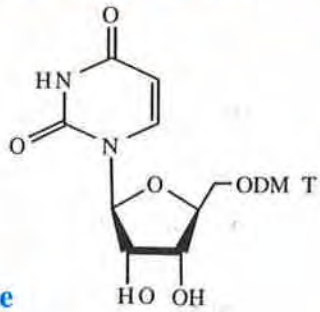
PM-9032 5'-DMT-β-L-Cytidine(n-bz)



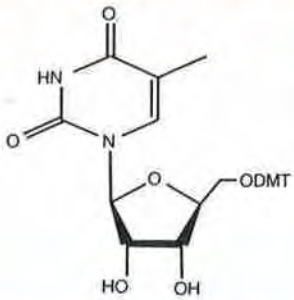
PM-9033 5'-DMT-β-L-Guanosine(n-ibu)



PM-9034 5'-DMT-β-L-Uridine



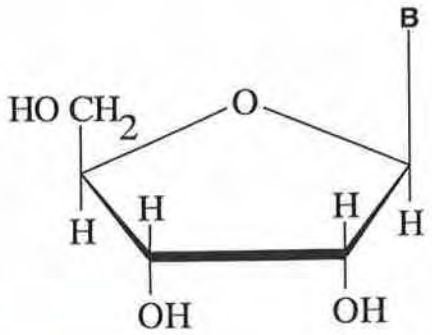
PM-9035 5'-DMT-β-L-Thymidine



Catalog #	Name	Price 100mg	1gm
PM-9031	5'-DMT-β–L-Adenosine(bz) F.W: 673.71	65.00	385.00
PM-9032	5'-DMT-β–L-Cytidine(bz) F.W: 649.69	65.00	385.00
PM-9033	5'-DMT-β–L-Guanosine(ibu) F.W: 655.70	76.00	425.00
PM-9034	5'-DMT-β–L-Uridine F.W: 546.57	72.00	410.00
PM-9035	5'-DMT-β–L-Thymidine F.W: 560.59	65.00	385.00

PARTIALLY PROTECTED MONONUCLEOSIDES (PM)

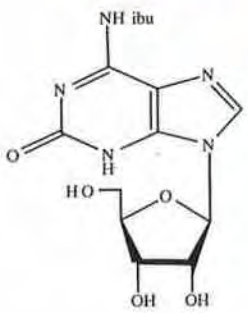
Ribonucleosides with Heterocyclic base protection



B	Cat. #
bzA	PM2101
bzC	PM2102
ibuG	PM2103
ibuC	PM2105
acC	PM2106

Catalog #	Product	Prices $/gm	$/5gm
PM-2101	ribo Adenosine (N-bz) F.W.: 371.346	26.50	125.00
PM-2102	ribo Cytidine (N-bz) F.W.: 347.317	26.50	125.00
PM-2103	ribo Guanosine (N-ibu) F.W.: 353.332	32.50	130.00
PM-2105	ribo Cytidine (N-ibu) F.W.: 313.303	32.50	130.00
PM-2106	ribo Cytidine (N-acetyl) F.W.: 285.251	36.50	155.00

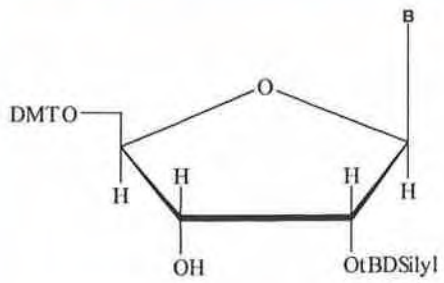
PM-2643 Ribo-Isoguanosine(n-ibu)



Catalog #: PM-2643
F.W: 353.33
Prices $: 22.50 / 10 mg.
165.00/ 100 mg.
310.00/ 250 mg
Purity: 98%+

PARTIALLY PROTECTED MONONUCLEOSIDES (PM)

5'-DMT-2'-tBDSilyl-Ribonucleosides



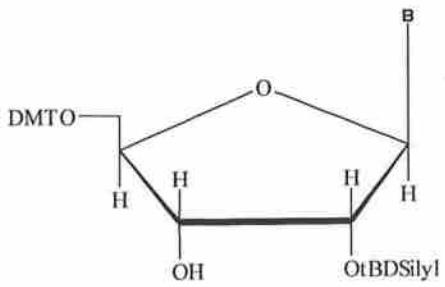
B	Cat. #
bzA	PM 5851
bzC	PM 5852
ibuG	PM 5853
U	PM 5854
I	PM 5855

Catalog #	Product	Prices $/gm	$/5gm	$/10gm
PM-5851	5'-DMT-2'-tBDSilyl-ribo Adenosine (N-bz) F.W.: 787.963	75.00	356.00	675.00
PM-5852	5'-DMT-2'-tBDSilyl-ribo Cytidine (N-bz) F.W.: 763.934	75.00	356.00	675.00
PM-5853	5'-DMT-2'-tBDSilyl-ribo Guanosine (N-ibu) F.W.: 769.949	95.00	555.00	845.00
PM-5854	5'-DMT-2'-tBDSilyl-ribo Uridine F.W.: 660.817	75.00	356.00	675.00
PM-5855	5'-DMT-2'-tBDSilyl-ribo Inosine F.W.: 684.847	98.00	451.00	845.00

* 99.5% Purity *
** 0% Isomeric Impurity **
*** Available in the above quantities or in multiple quantities ***

PARTIALLY PROTECTED MONONUCLEOSIDES (PM)

N-PAC-5'-DMT-2'-tBDSilyl Ribonucleosides



B	Cat. #
PAC A	RM 3501
PAC C	RM 3502
PAC G	RM 3503
U	RM 5854

Catalog #	Product	Prices $/gm	$/5gm	$/10gm
PM-3501	N-PAC-5'-DMT-2'-tBDSilyl Adenosine F.W.: 817.993	83.00	380.00	700.00
PM-3502	N-PAC-5'-DMT-2'-tBDSilyl Cytidine F.W.: 793.964	83.00	380.00	700.00
PM-3503	N-PAC-5'-DMT-2'-tBDSilyl Guanosine F.W.: 833.999	93.00	388.00	705.00
PM-5854	5'-DMT-2'-tBDSilyl-ribo Uridine F.W.: 660.817	75.00	356.00	675.00

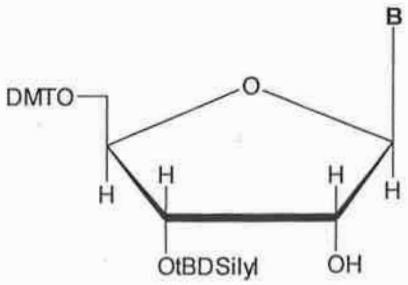
* 99.5% Purity *

** 0% Isomeric Impurity **

*** Available in the above quantities or in multiple quantities ***

PARTIALLY PROTECTED MONONUCLEOSIDES (PM)

5'-DMT-3'-tBDSilyl-2'-Hydroxy Ribonucleoside (2'-5' LINKAGE APPLICATION)



B	Cat. #
bzA	PM 5861
bzC	PM 5862
ibuG	PM 5863
U	PM 5864

Catalog #	Product	Prices $/gm	$/5gm
PM-5861	5'-DMT-3'-tBDSilyl-ribo Adenosine (N-bz) F.W.: 787.963	90.00	427.00
PM-5862	5'-DMT-3'-tBDSilyl-ribo Cytidine (N-bz) F.W.: 763.934	90.00	427.00
PM-5863	5'-DMT-3'-tBDSilyl-ribo Guanosine (N-ibu) F.W.: 769.949	126.00	577.00
PM-5864	5'-DMT-3'-tBDSilyl-ribo Uridine F.W.: 660.817	90.00	427.00

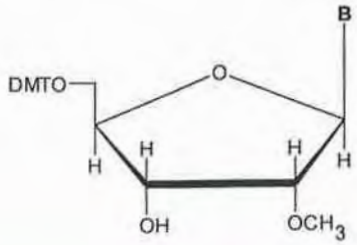
* 99.5% Purity *

** 0% Isomeric Impurity **

*** Available in the above quantities or in multiple quantities ***

PARTIALLY PROTECTED MONONUCLEOSIDES (PM) (Cont.)

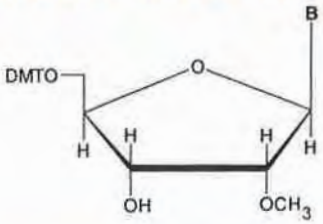
5'-DMT-2'-OMe-Ribonucleosides



B	Cat. #
bzA	PM 5731
bzC	PM 5732
ibuG	PM 5733
U	PM 5734

Catalog #	Product	Prices $/500mg	$/1gm
PM-5731	5'-DMT-2'-OMe-ribo Adenosine (N-bz) F.W.: 687.724	180.00	340.00
PM-5732	5'-DMT-2'-OMe-ribo Cytidine (N-bz) F.W.: 663.695	150.00	280.00
PM-5733	5'-DMT-2'-OMe-ribo Guanosine (N-ibu) F.W.: 669.710	180.00	340.00
PM-5734	5'-DMT-2'-OMe-ribo Uridine F.W.: 560.578	150.00	280.00

N-PAC-5'-DMT-2'-OMe Ribonucleosides



B	Cat. #
PAC A	PM 3701
PAC C	PM 3702
PAC G	PM 3703
U	PM 5734

Catalog #	Product	Prices $/500mg	$/1gm
PM-3701	N-PAC-5'-DMT-2'-OMe Adenosine F.W.: 717.754	195.00	355.00
PM-3702	N-PAC-5'-DMT-2'-OMe Cytidine F.W.: 693.725	165.00	310.00
PM-3703	N-PAC-5'-DMT-2'-OMe Guanosine F.W.: 733.760	195.00	355.00
PM-5734	5'-DMT-2'-OMe-ribo Uridine F.W.: 560.578	150.00	280.00

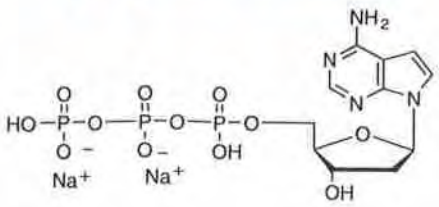
* 99.5% Purity *

** 0% Isomeric Impurity **

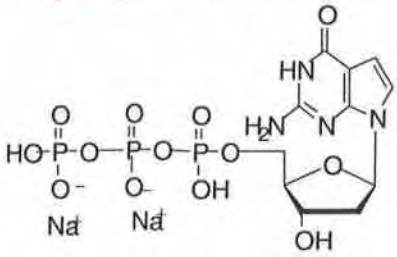
*** Available in the above quantities or in multiple quantities ***

TRIPHOSPHATES

NTP-4384 7-Deaza-2'-Deoxy Adenosine-5'-Triphosphate disodium salt



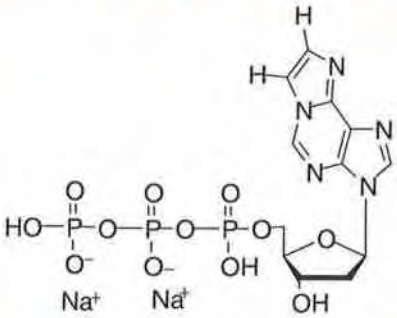
NTP-4386 7-Deaza-2'-Deoxy Guanosine-5'-Triphosphate disodium salt



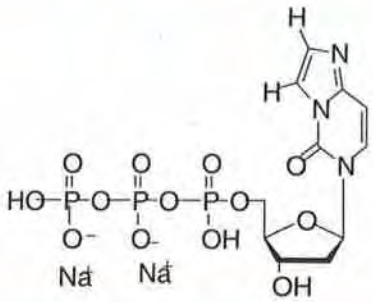
Catalog #	Name	Price 1mg	2mg	5mg
NTP-4384	7-Deaza-2'-deoxy Adenosine 5'-Triphosphate disodium salt F.W: 498.25	153.00	275.00	650.00
NTP-4386	7-Deaza-2'-deoxy Guanosine 5'-Triphosphate disodium salt F.W: 514.254	153.00	275.00	650.00

Minimum purity: 98% by HPLC, UV, paper/ thin layer chromatography

NTP-4344 Etheno 2'-deoxy- Adenosine-5'-Triphosphate disodium salt



NTP-4346 Etheno 2'-deoxy-Cytidine-5'-Triphosphate disodium salt

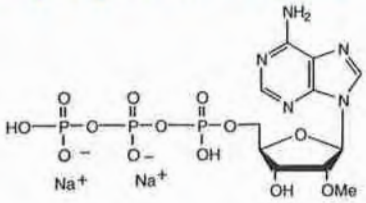


Catalog #	Name	Price 1mg	2mg	5mg
NTP-4344	Etheno-2'-deoxy Adenosine 5'-Triphosphate disodium salt F.W: 523.26	165.00	310.00	645.00
NTP-4346	Etheno-2'-deoxy Cytidine 5'-Triphosphate disodium salt F.W: 499.235	165.00	310.00	645.00

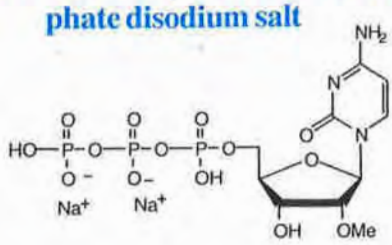
Minimum purity: 98% by HPLC, UV, paper/ thin layer chromatography

TRIPHOSPHATES (Cont.)

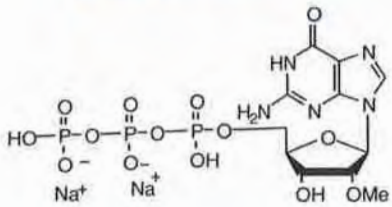
NTP-3386 2'-(O-Methyl)-ribo Adenosine 5'-triphosphate disodium salt



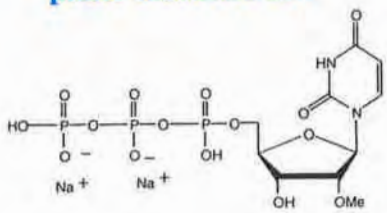
NTP-3387 2'-(O-Methyl)-Cytidine 5'-triphosphate disodium salt



NTP-3388 2'-(O-Methyl)Guanosine 5'-triphosphate disodium salt

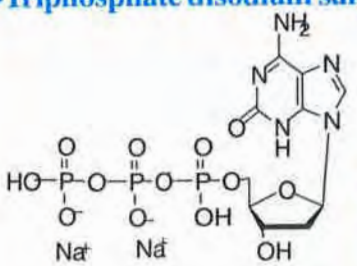


NTP-3389 2'-(O-Methyl)-Uridine-5'-triphosphate disodium salt



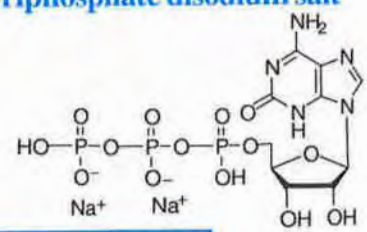
Catalog #	Name	Price 1mg.	2mg	5mg
NTP-3386	2'-(O-Methyl)-Adenosine 5'-triphosphate disodium salt F.W: 529.27	65.00	115.00	280.00
NTP-3387	2'-(O-Methyl)-Cytidine 5'-triphosphate disodium salt F.W: 505.24	65.00	115.00	280.00
NTP-3388	2'-(O-Methyl)-Guanosine 5'-triphosphate disodium salt F.W: 543.26	65.00	115.00	280.00
NTP-3389	2'-(O-Methyl)-Uridine 5'-triphosphate disodium salt F.W: 506.226	65.00	115.00	280.00

NTP-4396 2'-Deoxy-Isoguanosine 5'-Triphosphate disodium salt



Catalog #: NTP-4396
F.W: 515.26
Price: 165.00/ 1 mg
280.00 /2 mg.
680.00 /5 mg.

NTP-4348 Isoguanosine 5'-Triphosphate disodium salt



Catalog #: NTP-4348
F.W: 531 26
Price: 165.00 /1 mg.
280.00 /2 mg.
680.00/5 mg.

Minimum purity: 98% by HPLC, UV, paper/ thin layer chromatography

TEL: 508-881-5200 FAX: 508-881-3443 EMAIL: Chemgenes@aol.com or info@chemgenes.com

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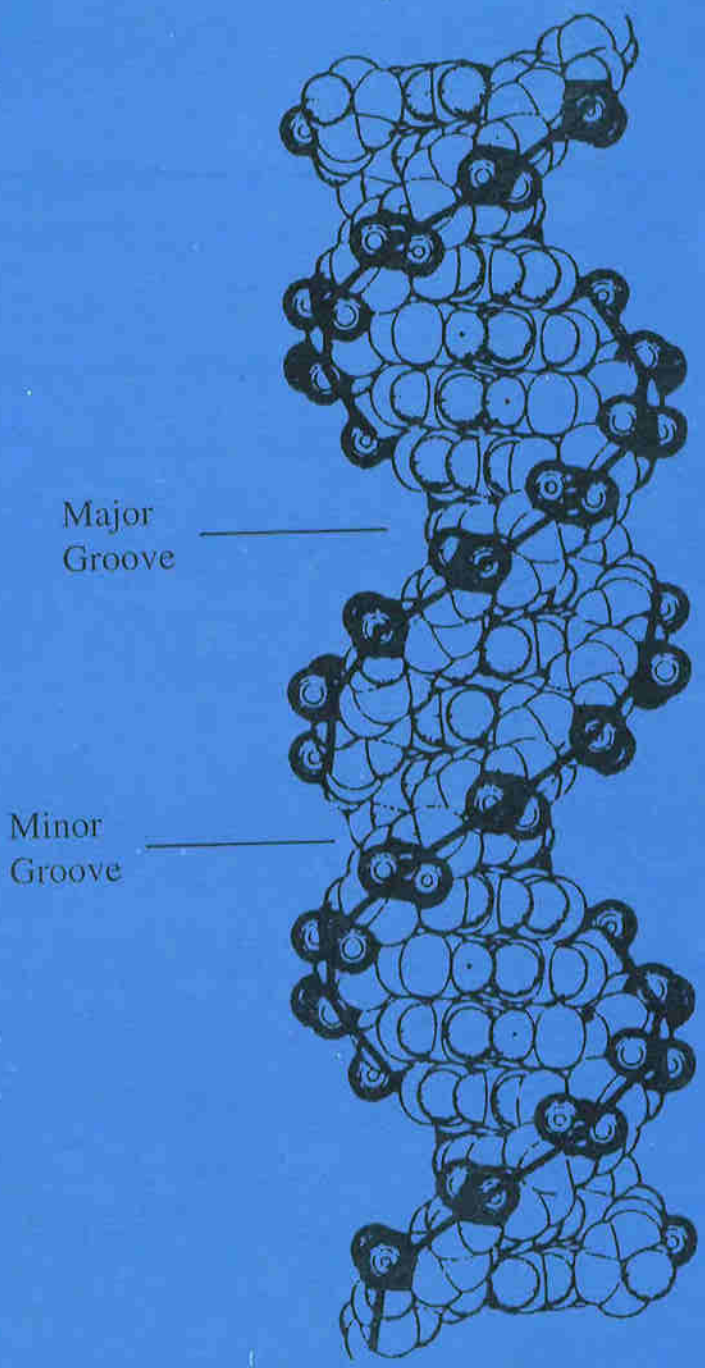
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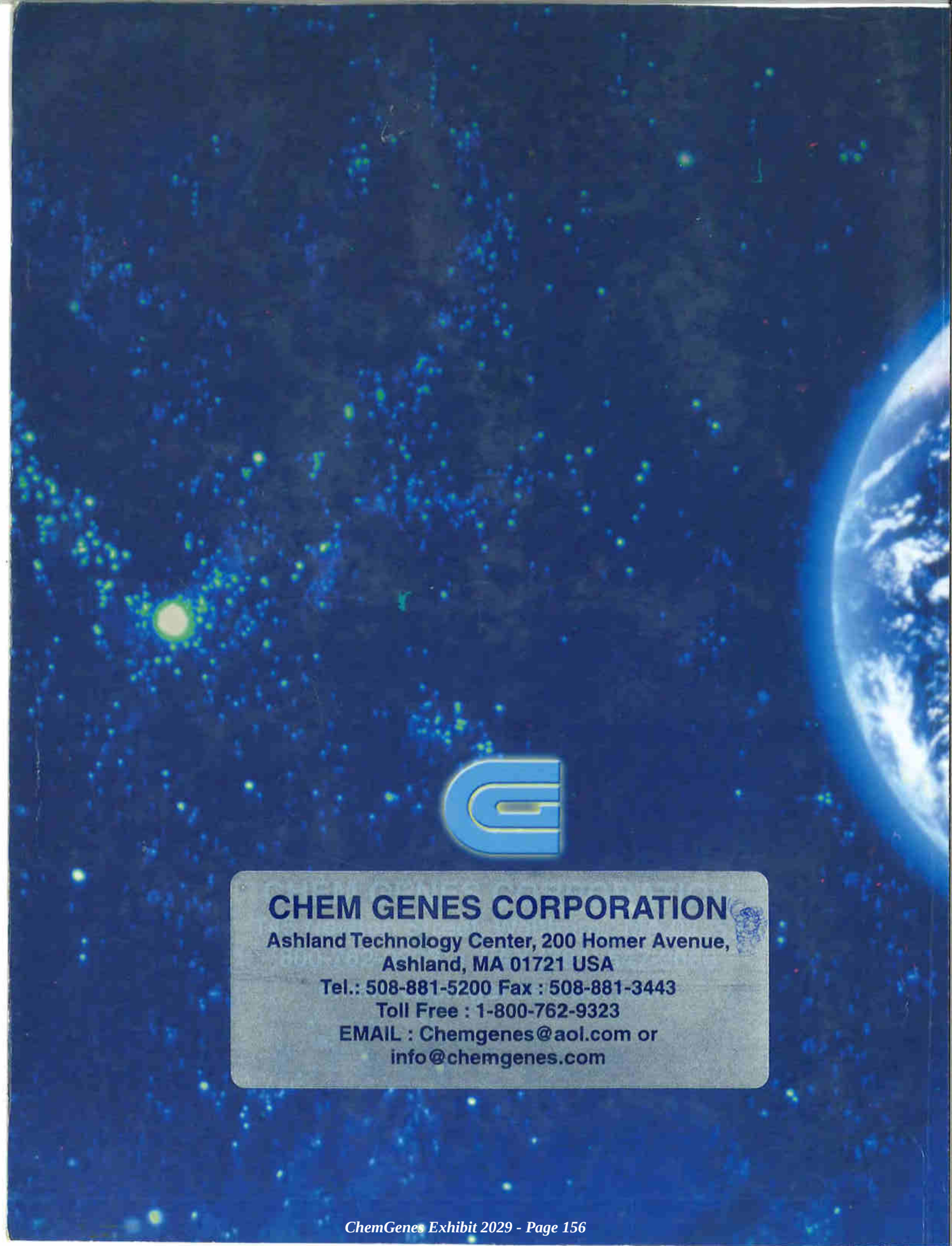
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