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BtsCI      50° 

We are excited to announce that all reaction buffers are now BSA-free. NEB began switching our BSA-containing reaction buffers in April 2021 to buffers containing **Recombinant Albumin** (rAlbumin) for restriction enzymes and some DNA modifying enzymes. Find more details at www.neb.com/BSA-free.

5'...G G A T G N N...3'
3'...C C T A C N N...5'

Isoschizomers | [Single Letter Code](#) | Pronunciation: 

- **Time-Saver™** qualified for digestion in 5-15 minutes
- 100% activity in **rCutSmart™ Buffer** (over 210 enzymes are available in the same buffer) allowing for easier double digests
- **Type IIS restriction enzymes** recognize asymmetric DNA sequences and cleave outside of their recognition sequence
- Restriction Enzyme Cut Site: GGATG(2/0)

Reagents Supplied

Protocols

Featured Video



Reduce Star Activity with High-Fidelity Restriction Enzymes
[View additional videos](#)

Catalog #	Concentration	Size	List Price	Your Price	Quantity
R0647S	20,000 units/ml	2,000 units	\$80.00	Sign In	
					Add to Cart

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Product Information ▼

Product Information

Product Source

An *E.coli* strain that carries the BtsCI gene from *Bacillus thermosphaericus* (X. Pan).

This product is related to the following categories: [Restriction Endonucleases B Products](#), [Time-Saver Qualified Restriction Enzymes Products](#)

This product can be used in the following applications: [Fast Cloning: Accelerate your cloning workflows with reagents from NEB](#), [Restriction Enzyme Digestion](#)

Reagents Supplied

The following reagents are supplied with this product:

NEB #	Component Name	Component #	Stored at (°C)	Amount	Concentration
R0647S			-20		
	BtsCI	R0647SVIAL	-20	1 x 0.1 ml	20,000 units/ml
	rCutSmart™ Buffer	B6004SVIAL	-20	1 x 1.25 ml	10 X

Properties & Usage

Unit Definition

One unit is defined as the amount of enzyme required to digest 1 µg of λ DNA in 1 hour at 50°C in a total reaction volume of 50 µl.

Reaction Conditions

1X rCutSmart™ Buffer
Incubate at **50°C**

1X rCutSmart™ Buffer

50 mM Potassium Acetate
20 mM Tris-acetate
10 mM Magnesium Acetate
100 µg/ml Recombinant Albumin
(pH 7.9 @ 25°C)

Activity in NEBuffers

NEBuffer™ r1.1: 10%
NEBuffer™ r2.1: 100%
NEBuffer™ r3.1: 25%
rCutSmart™ Buffer: 100%

Diluent Compatibility

- [Diluent B](#)

Storage Buffer

10 mM Tris-HCl
300 mM NaCl
0.1 mM EDTA
500 µg/ml BSA
50% Glycerol
1 mM DTT
pH 7.4 @ 25°C

Heat Inactivation
80°C for 20 minutes

Methylation Sensitivity
dam methylation: Not Sensitive
dcm methylation: Not Sensitive
CpG Methylation: Not Sensitive

Isoschizomers
BseGI
BstF5I
FokI

Activity at Temperature
@37°C: 25%

Related Products

- Companion Products**
- Monarch® Plasmid Miniprep Kit
 - Monarch® DNA Gel Extraction Kit
 - Monarch® PCR & DNA Cleanup Kit (5 µg)

Materials Sold Separately
rCutSmart™ Buffer

Product Notes

- BtsCI is an isoschizomer of BstF5I and neoschizomer of FokI.
- Not sensitive to CpG, dcm, or dam methylation.

Protocols, Manuals & Usage

Protocols

- Optimizing Restriction Endonuclease Reactions
- Restriction Digest Protocol
- Double Digest Protocol with Standard Restriction Enzymes

Usage Guidelines

- Activity at 37°C for Restriction Enzymes with Alternate Incubation Temperatures
- Activity of Restriction Enzymes in PCR Buffers
- Cleavage Close to the End of DNA Fragments
- Digestion of Agarose-Embedded DNA: Info for Specific Enzymes
- Double Digests
- Heat Inactivation
- NEBuffer Activity/Performance Chart with Restriction Enzymes
- Optimizing Restriction Endonuclease Reactions
- Restriction Endonucleases - Survival in a Reaction
- Restriction Enzyme Diluent Buffer Compatibility
- Restriction Enzyme Tips
- Single Letter Codes
- Star Activity
- Traditional Cloning Quick Guide

Tools & Resources

Selection Charts

- Alphabetized List of Recognition Sequences
- Compatible Cohesive Ends and Generation of New Restriction Sites
- Dam-Dcm and CpG Methylation
- Enzymes with Nonpalindromic Sequences
- Frequencies of Restriction Sites
- Isoelectric Points (pI) for Restriction Enzymes
- Isoschizomers
- NEB Diluent and Buffer Table
- Time-Saver™ Qualified Enzymes
- Type IIS Restriction Enzymes
- Why Choose Recombinant Enzymes?

Web Tools

- Competitor Cross-Reference Tool
- DNA Sequences and Maps Tool
- Double Digest Finder
- Enzyme Finder
- NEBcutter™ v3.0
- NEBioCalculator®
- REBASE®

FAQs & Troubleshooting

FAQs

1. Is BtsCI activity sensitive to *dam*, *dcm* or mammalian CpG methylation?
2. How many base pairs should be added at the end of a PCR primer after the BtsCI recognition site to guarantee that BtsCI will cut properly?
3. Does BtsCI have any neoschizomers?
4. What is the activity of BtsCI at 37°C?
5. Do I have to set-up digests with Time-Saver™ qualified enzymes for 5-15 minutes? Can I digest longer?
6. I tested your restriction enzyme on the substrate DNA recommended by NEB, and it appears to be active, however it does not digest my DNA. What could be the reason?
7. Can you tell me more about the switch from BSA to Recombinant Albumin (rAlbumin) in NEBuffers?

Troubleshooting

- [Restriction Enzyme Troubleshooting Guide](#)

Citations & Technical Literature

Citations

Product Citation Tool

72 CITATIONS

[illegible]

Quality, Safety & Legal

Quality Control Assays

Quality Control tests are performed on each new lot of NEB product to meet the specifications designated for it. Specifications and individual lot data from the tests that are performed for this particular product can be found and downloaded on the Product Specification Sheet, Certificate of Analysis, data card or product manual. Further information regarding NEB product quality can be found [here](#).

Specifications & Change Notifications

The Specification sheet is a document that includes the storage temperature, shelf life and the specifications designated for the product. The following file naming structure is used to name these document files: [Product Number]_[Size]_[Version]

R0647S_L_v1

Certificate of Analysis

The Certificate of Analysis (COA) is a signed document that includes the storage temperature, expiration date and quality controls for an individual lot. The following file naming structure is used to name these document files: [Product

Number]_[Size]_[Version]_[Lot Number]

R0647S_L_v1_0021302	R0647S_L_v1_0021306	R0647S_L_v1_0021312
R0647S_L_v1_0021406	R0647S_L_v1_0021410	R0647S_L_v1_0021411
R0647S_L_v1_0021501	R0647S_L_v1_0021505	R0647S_L_v1_0021510
R0647S_L_v1_0021604	R0647S_L_v1_0021609	R0647S_L_v1_0021703
R0647S_L_v1_0021708	R0647S_L_v1_0021804	R0647L_v1_10011900
R0647S_v1_10022530	R0647L_v1_10027774	R0647S_v1_10036686
R0647S_v1_10051131	R0647S_v1_10070046	R0647S_v1_10090986
R0647S_v1_10110099	R0647S_v1_10131226	R0647S_v1_10155699
R0647S_v1_10187078	R0647S_v1_10228342	

Safety Data Sheets

The following is a list of Safety Data Sheet (SDS) that apply to this product to help you use it safely.

BtsCIrCutSmart™ Buffer

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This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

New England Biolabs (NEB) is committed to practicing ethical science – we believe it is our job as researchers to ask the important questions that when answered will help preserve our quality of life and the world that we live in. However, this research should always be done in safe and ethical manner. Learn more.

Featured VideosView Video Library



Reduce Star Activity with High-Fidelity Restriction Enzymes



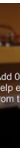
TIME-SAVER™ Protocol for Restriction Enzyme Digests



NEB® TV Ep. 15 – Applications of Restriction Enzymes



Restriction Enzyme Digest Protocol: Cutting Close to DNA End



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