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September 7, 2012

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Customer Solutions
858-202-4566

IDT Exhibit 1056.0002

Nextera® DNA Sample Preparation Kit (Illumina) [1,2]

Nextera® transposase sequences (FC-121-1031, FC-121-1030)

```
5′  TCGTCGGCAGCGTCAGATGTGTATAAGAGACAG
                      (a) Read 1 -->

5′ GTCTCGTGGGCTCGGAGATGTGTATAAGAGACAG
                      (d) Read 2 -->
```

Nextera® Index Kit - PCR primers (FC-121-1012, FC-121-1011)

```
5′ AATGATACGGCGACCACCGAGATCTACAC[i5]TCGTCGGCAGCGTC
          (c) i5 Index read -->

5′ CAAGCAGAAGACGGCATACGAGAT[i7]GTCTCGTGGGCTCGG
                              <-- i7 Index read (b)
```

Nextera® codes for entry on sample sheet:

i5 bases in adapter	Nextera DNA i5 index name	Nextera XT i5 index name	Nextera Enrichment i5 index name	i5 bases for entry on sample sheet
TAGATCGC	N501	S501	E501	**TAGATCGC**
CTCTCTAT	N502	S502	E502	**CTCTCTAT**
TATCCTCT	N503	S503	E503	**TATCCTCT**
AGAGTAGA	N504	S504	E504	**AGAGTAGA**
GTAAGGAG	N505	S505	E505	**GTAAGGAG**
ACTGCATA	N506	S506	E506	**ACTGCATA**
AAGGAGTA	N507	S507	E507	**AAGGAGTA**
CTAAGCCT	N508	S508	E508	**CTAAGCCT**

i7 bases in adapter	Nextera DNA i7 index name	Nextera XT i7 index name	Nextera Enrichment i7 index name	i7 bases for entry on sample sheet
TCGCCTTA	N701	N701	N701	**TAAGGCGA**
CTAGTACG	N702	N702	N702	**CGTACTAG**
TTCTGCCT	N703	N703	N703	**AGGCAGAA**
GCTCAGGA	N704	N704	N704	**TCCTGAGC**
AGGAGTCC	N705	N705	N705	**GGACTCCT**
CATGCCTA	N706	N706	N706	**TAGGCATG**
GTAGAGAG	N707	N707	N707	**CTCTCTAC**
CCTCTCTG	N708	N708	N708	**CAGAGAGG**

[1] Provided in reagents and used in methods protected by U.S. Patents 5,965,443; 6,437,109; and patents pending.
[2] Used in the methods of U.S. Patent 8,053,192 and 8,182,989.

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AGCGTAGC	N709	N709	N709	**GCTACGCT**
CAGCCTCG	N710	N710	N710	**CGAGGCTG**
TGCCTCTT	N711	N711	N711	**AAGAGGCA**
TCCTCTAC	N712	N712	N712	**GTAGAGGA**

TruSeq® Custom Amplicon or TruSeq® Amplicon – Cancer Panel
(codes for entry on sample sheet) [2,3]

i5 index	**i5 code**
A501	TGAACCTT
A502	TGCTAAGT
A503	TGTTCTCT
A504	TAAGACAC
A505	CTAATCGA
A506	CTAGAACA
A507	TAAGTTCC
A508	TAGACCTA

i7 index	**i7 code**
A701	ATCACGAC
A702	ACAGTGGT
A703	CAGATCCA
A704	ACAAACGG
A705	ACCCAGCA
A706	AACCCCTC
A707	CCCAACCT
A708	CACCACAC
A709	GAAACCCA
A710	TGTGACCA
A711	AGGGTCAA
A712	AGGAGTGG

[3] Patent pending.

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IDT Exhibit 1056.0004

TruSeq® DNA HT and RNA HT Sample Prep Kits [2,4,5]

D501–D508 adapters

AATGATACGGCGACCACCGAGATCTACAC[**i5**]ACACTCTTTCCCTACACGACGCTCTTCCGATCT

D701–D712 adapters

GATCGGAAGAGCACACGTCTGAACTCCAGTCAC[**i7**]ATCTCGTATGCCGTCTTCTGCTTG

i5 index name	i5 bases in D5xx adapter and for entry on sample sheet
D501	TATAGCCT
D502	ATAGAGGC
D503	CCTATCCT
D504	GGCTCTGA
D505	AGGCGAAG
D506	TAATCTTA
D507	CAGGACGT
D508	GTACTGAC

i7 index	i7 bases in D7xx adapter and for entry on sample sheet
D701	ATTACTCG
D702	TCCGGAGA
D703	CGCTCATT
D704	GAGATTCC
D705	ATTCAGAA
D706	GAATTCGT
D707	CTGAAGCT
D708	TAATGCGC
D709	CGGCTATG
D710	TCCGCGAA
D711	TCTCGCGC
D712	AGCGATAG

[4] For TruSeq process control sequences, see Appendix.
[5] Used in the methods of U.S. Patent 7,741,953.

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IDT Exhibit 1056.0005

TruSeq® DNA v1/v2/LT and RNA v1/v2/LT and ChIP Sample Prep Kits [2,5]

TruSeq Universal Adapter
5′ AATGATACGGCGACCACCGAGATCTACACTCTTTCCCTACACGACGCTCTTCCGATCT

TruSeq Adapter, Index 1 [6]
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCACATCACGATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 2
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCACCGATGTATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 3
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCACTTAGGCATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 4
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCACTGACCAATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 5
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCACACAGTGATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 6
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCACGCCAATATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 7
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCACCAGATCATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 8
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCACACTTGAATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 9
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCACGATCAGATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 10
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCACTAGCTTATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 11
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCACGGCTACATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 12
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCACCTTGTAATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 13
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCACAGTCAACAATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 14
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCACAGTTCCGTATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 15
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCACATGTCAGAATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 16
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCACCCGTCCCGATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 18 [7]
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCACGTCCGCACATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 19
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCACGTGAAACGATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 20
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCACGTGGCCTTATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 21
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCACGTTTCGGAATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 22

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[6] Index sequences are 6 bases as underlined. Please enter only these 6 bases on the sample sheet.
[7] Index numbers 17, 24, and 26 are reserved.

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5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCACCGTACGTAATCTCGTATGCCGTCTTCTGCTTG

TruSeq Adapter, Index 23

5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCACGAGTGGATATCTCGTATGCCGTCTTCTGCTTG

TruSeq Adapter, Index 25

5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCACACTGATATATCTCGTATGCCGTCTTCTGCTTG

TruSeq Adapter, Index 27

5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCACATTCCTTTATCTCGTATGCCGTCTTCTGCTTG

Oligonucleotide sequences for TruSeq® Small RNA Sample Prep Kits

RNA 5' Adapter (RA5), part # 15013205

5′ GUUCAGAGUUCUACAGUCCGACGAUC

RNA 3' Adapter (RA3), part # 15013207

5′ TGGAATTCTCGGGTGCCAAGG

Stop Oligo (STP) [8]

5′ GAAUUCCACCACGUUCCCGUGG

RNA RT Primer (RTP), part # 15013981

5′ GCCTTGGCACCCGAGAATTCCA

RNA PCR Primer (RP1), part # 15013198

5′ AATGATACGGCGACCACCGAGATCTACACGTTCAGAGTTCTACAGTCCGA

RNA PCR Primer, Index 1 (RPI1) [2,9]

5′ CAAGCAGAAGACGGCATACGAGATCGTGATGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA

RNA PCR Primer, Index 2 (RPI2)

5′ CAAGCAGAAGACGGCATACGAGATACATCGGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA

RNA PCR Primer, Index 3 (RPI3)

5′ CAAGCAGAAGACGGCATACGAGATGCCTAAGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA

RNA PCR Primer, Index 4 (RPI4)

5′ CAAGCAGAAGACGGCATACGAGATTGGTCAGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA

RNA PCR Primer, Index 5 (RPI5)

5′ CAAGCAGAAGACGGCATACGAGATCACTGTGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA

RNA PCR Primer, Index 6 (RPI6)

5′ CAAGCAGAAGACGGCATACGAGATATTGGCGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA

RNA PCR Primer, Index 7 (RPI7)

5′ CAAGCAGAAGACGGCATACGAGATGATCTGGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA

RNA PCR Primer, Index 8 (RPI8)

5′ CAAGCAGAAGACGGCATACGAGATTCAAGTGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA

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[8] Patent pending.

[9] Index sequence is 6 bases as underlined; please enter only these 6 bases on the sample sheet. Please note the index sequence is read in the reverse complement in TruSeq small RNA libraries.

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RNA PCR Primer, Index 9 (RPI9)
5′ CAAGCAGAAGACGGCATACGAGATCTGATCGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 10 (RPI10)
5′ CAAGCAGAAGACGGCATACGAGATAAGCTAGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 11 (RPI11)
5′ CAAGCAGAAGACGGCATACGAGATGTAGCCGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 12 (RPI12)
5′ CAAGCAGAAGACGGCATACGAGATTACAAGGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 13 (RPI13)
5′ CAAGCAGAAGACGGCATACGAGATTTGACTGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 14 (RPI14)
5′ CAAGCAGAAGACGGCATACGAGATGGAACTGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 15 (RPI15)
5′ CAAGCAGAAGACGGCATACGAGATTGACATGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 16 (RPI16)
5′ CAAGCAGAAGACGGCATACGAGATGGACGGGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 17 (RPI17)
5′ CAAGCAGAAGACGGCATACGAGATCTCTACGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 18 (RPI18)
5′ CAAGCAGAAGACGGCATACGAGATGCGGACGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 19 (RPI19)
5′ CAAGCAGAAGACGGCATACGAGATTTTCACGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 20 (RPI20)
5′ CAAGCAGAAGACGGCATACGAGATGGCCACGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 21 (RPI21)
5′ CAAGCAGAAGACGGCATACGAGATCGAAACGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 22 (RPI22)
5′ CAAGCAGAAGACGGCATACGAGATCGTACGGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 23 (RPI23)
5′ CAAGCAGAAGACGGCATACGAGATCCACTCGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 24 (RPI24)
5′ CAAGCAGAAGACGGCATACGAGATGCTACCGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 25 (RPI25)
5′ CAAGCAGAAGACGGCATACGAGATATCAGTGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 26 (RPI26)
5′ CAAGCAGAAGACGGCATACGAGATGCTCATGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 27 (RPI27)
5′ CAAGCAGAAGACGGCATACGAGATAGGAATGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 28 (RPI28)
5′ CAAGCAGAAGACGGCATACGAGATCTTTTGGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 29 (RPI29)
5′ CAAGCAGAAGACGGCATACGAGATTAGTTGGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 30 (RPI30)
5′ CAAGCAGAAGACGGCATACGAGATCCGGTGGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 31 (RPI31)
5′ CAAGCAGAAGACGGCATACGAGATATCGTGGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 32 (RPI32)
5′ CAAGCAGAAGACGGCATACGAGATTGAGTGGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA

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RNA PCR Primer, Index 33 (RPI33)
5′ CAAGCAGAAGACGGCATACGAGATCGCCTGGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 34 (RPI34)
5′ CAAGCAGAAGACGGCATACGAGATGCCATGGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 35 (RPI35)
5′ CAAGCAGAAGACGGCATACGAGATAAAATGGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 36 (RPI36)
5′ CAAGCAGAAGACGGCATACGAGATTGTTGGGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 37 (RPI37)
5′ CAAGCAGAAGACGGCATACGAGATATTCCGGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 38 (RPI38)
5′ CAAGCAGAAGACGGCATACGAGATAGCTAGGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 39 (RPI39)
5′ CAAGCAGAAGACGGCATACGAGATGTATAGGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 40 (RPI40)
5′ CAAGCAGAAGACGGCATACGAGATTCTGAGGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 41 (RPI41)
5′ CAAGCAGAAGACGGCATACGAGATGTCGTCGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 42 (RPI42)
5′ CAAGCAGAAGACGGCATACGAGATCGATTAGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 43 (RPI43)
5′ CAAGCAGAAGACGGCATACGAGATGCTGTAGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 44 (RPI44)
5′ CAAGCAGAAGACGGCATACGAGATATTATAGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 45 (RPI45)
5′ CAAGCAGAAGACGGCATACGAGATGAATGAGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 46 (RPI46)
5′ CAAGCAGAAGACGGCATACGAGATTCGGGAGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 47 (RPI47)
5′ CAAGCAGAAGACGGCATACGAGATCTTCGAGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 48 (RPI48)
5′ CAAGCAGAAGACGGCATACGAGATTGCCGAGTGACTGGAGTTCCTTGGCACCCGAGAATTCCA

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IDT Exhibit 1056.0009

<u>Nextera® DNA Sample Prep Kit</u> (Epicentre Biotechnologies) [1,2,10]

Transposon Sequences
5′-GCCTCCCTCGCGCCATCAGAGATGTGTATAAGAGACAG
5′-GCCTTGCCAGCCCGCTCAGAGATGTGTATAAGAGACAG

Adaptors (showing optional bar code)
5'-AATGATACGGCGACCACCGAGATCTACACGCCTCCCTCGCGCCATCAG
5'-CAAGCAGAAGACGGCATACGAGAT[**barcode**]CGGTCTGCCTTGCCAGCCCGCTCAG-3'

PCR Primers
5'-AATGATACGGCGACCACCGA
5'-CAAGCAGAAGACGGCATACGA

<u>Oligonucleotide sequences for Genomic DNA</u>

Adapters
5' P-GATCGGAAGAGCTCGTATGCCGTCTTCTGCTTG
5' ACACTCTTTCCCTACACGACGCTCTTCCGATCT

PCR Primers
5' AATGATACGGCGACCACCGAGATCTACACTCTTTCCCTACACGACGCTCTTCCGATCT
5' CAAGCAGAAGACGGCATACGAGCTCTTCCGATCT

Genomic DNA Sequencing Primer
5' ACACTCTTTCCCTACACGACGCTCTTCCGATCT

<u>Paired End DNA oligonucleotide sequences</u>

PE Adapters
5' P-GATCGGAAGAGCGGTTCAGCAGGAATGCCGAG
5' ACACTCTTTCCCTACACGACGCTCTTCCGATCT

PE PCR Primer 1.0
5' AATGATACGGCGACCACCGAGATCTACACTCTTTCCCTACACGACGCTCTTCCGATCT

PE PCR Primer 2.0
5' CAAGCAGAAGACGGCATACGAGATCGGTCTCGGCATTCCTGCTGAACCGCTCTTCCGATCT

PE Read 1 Sequencing Primer
5' ACACTCTTTCCCTACACGACGCTCTTCCGATCT

[10] These kits are no longer available for purchase. As a replacement, we recommend FC-121-1031

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PE Read 2 Sequencing Primer
5' CGGTCTCGGCATTCCTGCTGAACCGCTCTTCCGATCT

<u>Oligonucleotide sequences for the Multiplexing Sample Prep Oligo Only Kit</u> [2]

Multiplexing Adapters
5' P-GATCGGAAGAGCACACGTCT
5' ACACTCTTTCCCTACACGACGCTCTTCCGATCT

Multiplexing PCR Primer 1.0
5' AATGATACGGCGACCACCGAGATCTACACTCTTTCCCTACACGACGCTCTTCCGATCT

Multiplexing PCR Primer 2.0
5' GTGACTGGAGTTCAGACGTGTGCTCTTCCGATCT

Multiplexing Read 1 Sequencing Primer
5' ACACTCTTTCCCTACACGACGCTCTTCCGATCT

Multiplexing Index Read Sequencing Primer
5' GATCGGAAGAGCACACGTCTGAACTCCAGTCAC

Multiplexing Read 2 Sequencing Primer
5' GTGACTGGAGTTCAGACGTGTGCTCTTCCGATCT

PCR Primer, Index 1
5′ CAAGCAGAAGACGGCATACGAGATCGTGATGTGACTGGAGTTC
PCR Primer, Index 2
5′ CAAGCAGAAGACGGCATACGAGATACATCGGTGACTGGAGTTC
PCR Primer, Index 3
5′ CAAGCAGAAGACGGCATACGAGATGCCTAAGTGACTGGAGTTC
PCR Primer, Index 4
5′ CAAGCAGAAGACGGCATACGAGATTGGTCAGTGACTGGAGTTC
PCR Primer, Index 5
5′ CAAGCAGAAGACGGCATACGAGATCACTGTGTGACTGGAGTTC
PCR Primer, Index 6
5′ CAAGCAGAAGACGGCATACGAGATATTGGCGTGACTGGAGTTC
PCR Primer, Index 7
5′ CAAGCAGAAGACGGCATACGAGATGATCTGGTGACTGGAGTTC
PCR Primer, Index 8
5′ CAAGCAGAAGACGGCATACGAGATTCAAGTGTGACTGGAGTTC
PCR Primer, Index 9
5′ CAAGCAGAAGACGGCATACGAGATCTGATCGTGACTGGAGTTC
PCR Primer, Index 10
5′ CAAGCAGAAGACGGCATACGAGATAAGCTAGTGACTGGAGTTC
PCR Primer, Index 11

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5’ CAAGCAGAAGACGGCATACGAGATGTAGCCGTGACTGGAGTTC

PCR Primer, Index 12

5’ CAAGCAGAAGACGGCATACGAGATTACAAGGTGACTGGAGTTC

Oligonucleotide sequences for the v1 and v1.5 Small RNA Kits

RT Primer

5' CAAGCAGAAGACGGCATACGA

5' RNA Adapter

5' GUUCAGAGUUCUACAGUCCGACGAUC

3' RNA Adapter

5' P-UCGUAUGCCGUCUUCUGCUUGUidT

v1.5 Small RNA 3' Adapter

5' /5rApp/ATCTCGTATGCCGTCTTCTGCTTG/3ddC/

Small RNA PCR Primer 1

5' CAAGCAGAAGACGGCATACGA

Small RNA PCR Primer 2

5' AATGATACGGCGACCACCGACAGGTTCAGAGTTCTACAGTCCGA

Small RNA Sequencing Primer

5' CGACAGGTTCAGAGTTCTACAGTCCGACGATC

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Appendix: Process Controls for TruSeq® Sample Preparation Kits (Included in TruSeq DNA and RNA (v1/v2/LT/HT) and TruSeq Exome Kits [11]

CTE2 - 150bp

ATCCTGCAGATGCATCCAGTACTAGTATGGCCCGGGGGATCCTACGTTCCAAATGCAGCGAGCTCGTATAACCCTTT
AAGAGTTGCTCTTTTTGTTTGGTAAGTTGCAAATCGAAGTTTTAGATTGAGTTCTACGTCGAGCGGCCGCGAT

CTE2 - 250bp

ATCCTGCAGATGCATCCAGTACTAGTATGGCCCGGGGGATCCTTATCTGTCAAAACCGCTAATGTCCGTTCTAAGAC
CGTCTGGAGAACACTTGCCCATCAGTGCTTTTGAACCTTTTTTTCACAGGTCCCTTCCGATTACACTGAGAAGCTGA
CCACACCTGCTAGAAGATGGAGGTATGCAGCCCGTTAGTAGGAGTAATACTACCCAGCTTATAACCCTCAAACGTAG
GGCAGATGGCGGCCGCGAT

CTE2 - 350bp

ATCCTGCAGATGCATCCAGTACTAGTATGGCCCGGGGGATCCTAGAGACCATTCGCGATTCCATGAGACTCCAAGGG
TTCTGCACAACTTATGCACCTCTATTAGATCATTGTGTTCTACGAAGCCTGGACTGCATTACATATTCACAACCAAC
ATGAGAAGAGCGGAATAGATGGCCGGATGTTTGGTGGCTTTGATATATTGTGAGGAGCATTGCGAACCCTAGAGCTG
TCCGGTCAAATAACCCCCTCACAATAAGTGTAATGTCATGGGATAATCAAAAGACTAAGGGAGGGCTTTTATAGAAG
GCGTGAGGTCATGCTATCCCCCTCTGAAGACGCGGCCGCGAT

CTE2 - 450bp

ATCCTGCAGATGCATCCAGTACTAGTATGGCCCGGGGGATCCGTATACGTTTCTAATTTGTAGTTAACGGTTGGATA
CCACTTTGAGGCATGTAATATGGTACTGAGCTTCGGCACAGGGCTCAAATTGCATCATTAAATGTCTCCGATGTGGC
TATATGTCATGGATAAAGGCAGCCCCCTATATCTTTTTTTGTGGCAGCATGGGTCCATCAAAGCAATTATTCAGGGT
CTTAATGACCTCCACAGCTCTAAACGTAATTCATCTGGCTTTGCCTGTACTTACTTCCTCCATGAAAAAAAGTGTTG
ATAATGCTCATAATGCTGCCCAGCAATTTCCTCCCTTCTCAAGACTATTCTGGCTTCCTGGGTACTTAAAAACAGGG
CTTAGAGTATGGCTGCTGACAAAATTGCACTCTAAACGCTAGCTTAGGTCTTCTGCGGCCGCGAT

CTE2 - 550bp

ATCCTGCAGATGCATCCAGTACTAGTATGGCCCGGGGGATCCGTTAGCTATCGTTCGCGAGAAAGTTAGTAGACACA
CAGGACCCAGGCGTGCAAGTCAATTTCAGCTGACTACACCGATTCTGGTTAAAAGAGCCTATGGCCACCCTTATTTT
AGAGAAAAAAAACCACACCTCTAATGTGTTGGGCACTAGAAAAAGCTAACTACCTAGTCCGTTTCTGGACGACTTCA
TTGGGAATAACATACCCCCCACTGTGATTAAGACTGGCACTGTCCTAATGCTTTCTTCAATAGGTTTGGCTCATGTG
TGATTCCCTCTGGCAAACTTATAGAGGACAAGCAGAATAAACCAATTCAAGGTCGTTGTAGCTGAAGGCCTGGCCTG
CCTGACAGTTAATTATGAGCATGTCTTGCCCTTCATGGTGGATATTCACAGCTGAAAGTGGTATTGGCATTTTTTTC
TGAGGACACAACGAGGAAATCTGATAAATACGGCCACCTGAAGTCTAGCTCGGAGTTAACAATTTACCACGTTTAGA
GCGGCCGCGAT

CTE2 - 650bp

ATCCTGCAGATGCATCCAGTACTAGTATGGCCCGGGGGATCCGCTCGCACTTAGCCTGTTAAGGGGTTCGCGCTCGT
CTAGTCTGTGCTGTTGCCTGGATAGTAAATTATCATGGTACAAACTTTTAAGAGCCAGTTAAATGGAGATGGATTTA
AAAAGAGTTATTGTAAAGTCTCCCCAGGTGTGTCATTAAATATCCCAACAGATTGCCCTGGCCTGACCCCCTAAATG
CAATTTTGGGATTCCCTTTTAGTTGCTTTCATTAAAATGTACCAGCGCAGTAAAAAAAGCACAAAGTATATTGTTTA
TGTAACTCACTATCTCATTTGCACTGGTTACATGGCAGCTTCAGACTGACTAAAACTACACTTTTCCCACCATGGTT
CAAAGATCAACAGAACTGGGCCAACAAAAGCAATTTTTTCATGTGGTCTAACTACCAACTTATTATGAGTTAAGTTA
CTTTTAGGTTTAAAATCACAGCAGTTTTTCCCTCCACACCTCCCAGAGATACTTTCAGGGTGGCTAAACTTGGCTAA
AGGCTTCCGGACCAACCCTTGTTTCTTTATGGTGCTTGTGTCCTGACAACCGCGTAAGGCATGGAAATTCAGCTATT
TATCCGATCGTTTATATGGGCGTGCGGCCGCGAT

CTE2 - 750bp

ATCCTGCAGATGCATCCAGTACTAGTATGGCCCGGGGGATCCTTGGACCGTTAATTCATATATCGAAGTAGCAGGTT
GTTGCCCCGCCTGATGTTGCCACTACTTGCTCATGACAGTTTTTTTAGGCAATGCAAACTACTATTTGATATTTTTT
TCCAAGTACAGTTGTAGGGTACTCCTTATACTGATTCTTCTGAGCCTGTACGGGGAGCATTAGGTACTGATGTAGTA
GGAGTTGAGCTTCACAAATTCACCAGGTAAGCCCAAATTTATTTTCTGCTTGGACAGGTCCACCTCACATGGGTCTG
TCTAATATATTAAAAGAGGGATTTTCTTTGCTGTATTGCAGCCCAGTATATCTGTTACTTACAGTAGTAGTCCATTA
TTGCTGGCCTAGGGGCTTTTGCTCCTACACGAACACCACTCTGTAAAATTTGAGGTCGTCCTTAGAGTCAAACCATT

[11] Patent pending

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CATGGAGCGCTCTGTGCATCTACCAACTATCGCTAAGCATTCACTTGGTTGGTTTAAGTGGAGGCAACTCCATTATC
TTCTAGCATACCCTTCCCAGGCTACATGTAGAAAGAGATCTGTTGGGCCCCACTATTTTTTCACCCAGGGAAGCCTA
CTTTAGTTATAGCTTGCCAGAGATTTTCTGTGTCATGTAGAAGTCATCCACTTTTAACACCAGGAGGTGGATGTGGG
GCCAGGAAATATGTCAATAACGATACGGGACTTCTAACAGTGACTCGCGGCCGCGAT

CTE2 - 850bp

ATCCTGCAGATGCATCCAGTACTAGTATGGCCCGGGGGATCCTTAAGTCGTGTCCTTCTCCTACGATCTTGTGAACG
ATGGATATTTTCTTTCTAAACTTTAAACAAACAGTGGAGAGATGTTGTTGTGTGTGGAACGACGCTTAGCCTACCGA
GGAAGATCCAGACTACAATAGAATATGTGGCCAAAACTCTCCGCAACTTCAGCAGCAAAAAGGATATTATTGACATA
ACCTCCTCACAAAAAGTACACAAATGGCTAAATAACAGAGCCCCTCTTTTTACTAGGGAAATGGTGGATGTGGACTT
TAGAATTTAAGATAATAAAGCTCTTGATCCCAATGTTATTTCCATGTGAGGGACATTAAATTGAGTAACCTTTGCCA
CATACCCTCTCCCAGAGTCCATTCTCTAAAACTTGAAGCTCCGCCCCTTTTTACGCACATTAGGCTTCCAATTACGG
TCAATGGTCTTGAAGATTGGGAGCTTTTGAAGAGTAATAAGAACCATCACAAAAAGGAACCCAGAAGCCGGGAGTGT
CTACCAAAAAAATTCAAGGGTTAAAAAAAAGTGACATTTTCTCCTGTTTTTTACACATGATTTTGAATGCTGATGGG
TCCACGTCCAGCTCTAAAGGTAGGTTCATGGTTCTCCAAAGTTGCTTTCTTGTCAGAATTGAGCCACATCAGGTAGG
TGGGGAAGTAGATCAGTGAGGATGCTTCACATGTGTGGGCACTGGGAACAGAATGCTTCAATAACACGAGCTGACGA
GGGCCCGCTATGAAAAAAAAGATTCTCTGTGCCCCCTGGCGCCTCCGCACTTAAAGAATTGATGACCGTGCGGCCGC
GAT

CTE1 - 123bp

GATCCTACGTTCCAAATGCAGCGAGCTCGTATAACCCTTTAAGAGTTGCTCTTTTTGTTTGGTAAGTTGCAAATCGA
AGTTTTAGATTGAGTTCTACGTCGAGCGGCCGCGATATCCTGCAGATGCA

CTE1 - 223bp

GATCCTTATCTGTCAAAACCGCTAATGTCCGTTCTAAGACCGTCTGGAGAACACTTGCCCATCAGTGCTTTTGAACC
TTTTTTTCACAGGTCCCTTCCGATTACACTGAGAAGCTGACCACACCTGCTAGAAGATGGAGGTATGCAGCCCGTTA
GTAGGAGTAATACTACCCAGCTTATAACCCTCAAACGTAGGGCAGATGGCGGCCGCGATATCCTGCAGATGCA

CTE1 - 323bp

GATCCTAGAGACCATTCGCGATTCCATGAGACTCCAAGGGTTCTGCACAACTTATGCACCTCTATTAGATCATTGTG
TTCTACGAAGCCTGGACTGCATTACATATTCACAACCAACATGAGAAGAGCGGAATAGATGGCCGGATGTTTGGTGG
CTTTGATATATTGTGAGGAGCATTGCGAACCCTAGAGCTGTCCGGTCAAATAACCCCCTCACAATAAGTGTAATGTC
ATGGGATAATCAAAAGACTAAGGGAGGGCTTTTATAGAAGGCGTGAGGTCATGCTATCCCCCTCTGAAGACGCGGCC
GCGATATCCTGCAGATGCA

CTE1 - 423bp

GATCCGTATACGTTTCTAATTTGTAGTTAACGGTTGGATACCACTTTGAGGCATGTAATATGGTACTGAGCTTCGGC
ACAGGGCTCAAATTGCATCATTAAATGTCTCCGATGTGGCTATATGTCATGGATAAAGGCAGCCCCCTATATCTTTT
TTTGTGGCAGCATGGGTCCATCAAAGCAATTATTCAGGGTCTTAATGACCTCCACAGCTCTAAACGTAATTCATCTG
GCTTTGCCTGTACTTACTTCCTCCATGAAAAAAAGTGTTGATAATGCTCATAATGCTGCCCAGCAATTTCCTCCCTT
CTCAAGACTATTCTGGCTTCCTGGGTACTTAAAAACAGGGCTTAGAGTATGGCTGCTGACAAAATTGCACTCTAAAC
GCTAGCTTAGGTCTTCTGCGGCCGCGATATCCTGCAGATGCA

CTE1 - 523bp

GATCCGTTAGCTATCGTTCGCGAGAAAGTTAGTAGACACACAGGACCCAGGCGTGCAAGTCAATTTCAGCTGACTAC
ACCGATTCTGGTTAAAAGAGCCTATGGCCACCCTTATTTTAGAGAAAAAAAACCACACCTCTAATGTGTTGGGCACT
AGAAAAAGCTAACTACCTAGTCCGTTTCTGGACGACTTCATTGGGAATAACATACCCCCCACTGTGATTAAGACTGG
CACTGTCCTAATGCTTTCTTCAATAGGTTTGGCTCATGTGTGATTCCCTCTGGCAAACTTATAGAGGACAAGCAGAA
TAAACCAATTCAAGGTCGTTGTAGCTGAAGGCCTGGCCTGCCTGACAGTTAATTATGAGCATGTCTTGCCCTTCATG
GTGGATATTCACAGCTGAAAGTGGTATTGGCATTTTTTTCTGAGGACACAACGAGGAAATCTGATAAATACGGCCAC
CTGAAGTCTAGCTCGGAGTTAACAATTTACCACGTTTAGAGCGGCCGCGATATCCTGCAGATGCA

CTE1 - 623bp

GATCCGCTCGCACTTAGCCTGTTAAGGGGTTCGCGCTCGTCTAGTCTGTGCTGTTGCCTGGATAGTAAATTATCATG
GTACAAACTTTTAAGAGCCAGTTAAATGGAGATGGATTTAAAAAGAGTTATTGTAAAGTCTCCCCAGGTGTGTCATT
AAATATCCCAACAGATTGCCCTGGCCTGACCCCCTAAATGCAATTTTGGGATTCCCTTTTAGTTGCTTTCATTAAAA
TGTACCAGCGCAGTAAAAAAAGCACAAAGTATATTGTTTATGTAACTCACTATCTCATTTGCACTGGTTACATGGCA
GCTTCAGACTGACTAAAACTACACTTTTCCCACCATGGTTCAAAGATCAACAGAACTGGGCCAACAAAAGCAATTTT
TTCATGTGGTCTAACTACCAACTTATTATGAGTTAAGTTACTTTTAGGTTTAAAATCACAGCAGTTTTTCCCTCCAC
ACCTCCCAGAGATACTTTCAGGGTGGCTAAACTTGGCTAAAGGCTTCCGGACCAACCCTTGTTTCTTTATGGTGCTT

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GTGTCCTGACAACCGCGTAAGGCATGGAAATTCAGCTATTTATCCGATCGTTTATATGGGCGTGCGGCCGCGATATC
CTGCAGATGCA

CTE1 - 723bp

GATCCTTGGACCGTTAATTCATATATCGAAGTAGCAGGTTGTTGCCCCGCCTGATGTTGCCACTACTTGCTCATGAC
AGTTTTTTTAGGCAATGCAAACTACTATTTGATATTTTTTTCCAAGTACAGTTGTAGGGTACTCCTTATACTGATTC
TTCTGAGCCTGTACGGGGAGCATTAGGTACTGATGTAGTAGGAGTTGAGCTTCACAAATTCACCAGGTAAGCCCAAA
TTTATTTTCTGCTTGGACAGGTCCACCTCACATGGGTCTGTCTAATATATTAAAAGAGGGATTTTCTTTGCTGTATT
GCAGCCCAGTATATCTGTTACTTACAGTAGTAGTCCATTATTGCTGGCCTAGGGGCTTTTGCTCCTACACGAACACC
ACTCTGTAAAATTTGAGGTCGTCCTTAGAGTCAAACCATTCATGGAGCGCTCTGTGCATCTACCAACTATCGCTAAG
CATTCACTTGGTTGGTTTAAGTGGAGGCAACTCCATTATCTTCTAGCATACCCTTCCCAGGCTACATGTAGAAAGAG
ATCTGTTGGGCCCCACTATTTTTTCACCCAGGGAAGCCTACTTTAGTTATAGCTTGCCAGAGATTTTCTGTGTCATG
TAGAAGTCATCCACTTTTAACACCAGGAGGTGGATGTGGGGCCAGGAAATATGTCAATAACGATACGGGACTTCTAA
CAGTGACTCGCGGCCGCGATATCCTGCAGATGCA

CTE1 - 823bp

GATCCTTAAGTCGTGTCCTTCTCCTACGATCTTGTGAACGATGGATATTTTCTTTCTAAACTTTAAACAAACAGTGG
AGAGATGTTGTTGTGTGTGGAACGACGCTTAGCCTACCGAGGAAGATCCAGACTACAATAGAATATGTGGCCAAAAC
TCTCCGCAACTTCAGCAGCAAAAAGGATATTATTGACATAACCTCCTCACAAAAAGTACACAAATGGCTAAATAACA
GAGCCCCTCTTTTTACTAGGGAAATGGTGGATGTGGACTTTAGAATTTAAGATAATAAAGCTCTTGATCCCAATGTT
ATTTCCATGTGAGGGACATTAAATTGAGTAACCTTTGCCACATACCCTCTCCCAGAGTCCATTCTCTAAAACTTGAA
GCTCCGCCCCTTTTTACGCACATTAGGCTTCCAATTACGGTCAATGGTCTTGAAGATTGGGAGCTTTTGAAGAGTAA
TAAGAACCATCACAAAAAGGAACCCAGAAGCCGGGAGTGTCTACCAAAAAAATTCAAGGGTTAAAAAAAAGTGACAT
TTTCTCCTGTTTTTTACACATGATTTTGAATGCTGATGGGTCCACGTCCAGCTCTAAAGGTAGGTTCATGGTTCTCC
AAAGTTGCTTTCTTGTCAGAATTGAGCCACATCAGGTAGGTGGGGAAGTAGATCAGTGAGGATGCTTCACATGTGTG
GGCACTGGGAACAGAATGCTTCAATAACACGAGCTGACGAGGGCCCGCTATGAAAAAAAAGATTCTCTGTGCCCCCT
GGCGCCTCCGCACTTAAAGAATTGATGACCGTGCGGCCGCGATATCCTGCAGATGCA

CTA - 150bp

GGGGGATCCTACGTTCCAAATGCAGCGAGCTCGTATAACCCTTTAAGAGTTGCTCTTTTTGTTTGGTAAGTTGCAAA
TCGAAGTTTTAGATTGAGTTCTACGTCGAGCGGCCGCGATATCCTGCAGATGCATCCAGTACTAGTATGGCCC

CTA - 250bp

GGGGGATCCTTATCTGTCAAAACCGCTAATGTCCGTTCTAAGACCGTCTGGAGAACACTTGCCCATCAGTGCTTTTG
AACCTTTTTTTCACAGGTCCCTTCCGATTACACTGAGAAGCTGACCACACCTGCTAGAAGATGGAGGTATGCAGCCC
GTTAGTAGGAGTAATACTACCCAGCTTATAACCCTCAAACGTAGGGCAGATGGCGGCCGCGATATCCTGCAGATGCA
TCCAGTACTAGTATGGCCC

CTA - 350bp

GGGGGATCCTAGAGACCATTCGCGATTCCATGAGACTCCAAGGGTTCTGCACAACTTATGCACCTCTATTAGATCAT
TGTGTTCTACGAAGCCTGGACTGCATTACATATTCACAACCAACATGAGAAGAGCGGAATAGATGGCCGGATGTTTG
GTGGCTTTGATATATTGTGAGGAGCATTGCGAACCCTAGAGCTGTCCGGTCAAATAACCCCCTCACAATAAGTGTAA
TGTCATGGGATAATCAAAAGACTAAGGGAGGGCTTTTATAGAAGGCGTGAGGTCATGCTATCCCCCTCTGAAGACGC
GGCCGCGATATCCTGCAGATGCATCCAGTACTAGTATGGCCC

CTA - 450bp

GGGGGATCCGTATACGTTTCTAATTTGTAGTTAACGGTTGGATACCACTTTGAGGCATGTAATATGGTACTGAGCTT
CGGCACAGGGCTCAAATTGCATCATTAAATGTCTCCGATGTGGCTATATGTCATGGATAAAGGCAGCCCCCTATATC
TTTTTTTGTGGCAGCATGGGTCCATCAAAGCAATTATTCAGGGTCTTAATGACCTCCACAGCTCTAAACGTAATTCA
TCTGGCTTTGCCTGTACTTACTTCCTCCATGAAAAAAAGTGTTGATAATGCTCATAATGCTGCCCAGCAATTTCCTC
CCTTCTCAAGACTATTCTGGCTTCCTGGGTACTTAAAAACAGGGCTTAGAGTATGGCTGCTGACAAAATTGCACTCT
AAACGCTAGCTTAGGTCTTCTGCGGCCGCGATATCCTGCAGATGCATCCAGTACTAGTATGGCCC

CTA - 550bp

GGGGGATCCGTTAGCTATCGTTCGCGAGAAAGTTAGTAGACACACAGGACCCAGGCGTGCAAGTCAATTTCAGCTGA
CTACACCGATTCTGGTTAAAAGAGCCTATGGCCACCCTTATTTTAGAGAAAAAAAACCACACCTCTAATGTGTTGGG
CACTAGAAAAAGCTAACTACCTAGTCCGTTTCTGGACGACTTCATTGGGAATAACATACCCCCCACTGTGATTAAGA
CTGGCACTGTCCTAATGCTTTCTTCAATAGGTTTGGCTCATGTGTGATTCCCTCTGGCAAACTTATAGAGGACAAGC
AGAATAAACCAATTCAAGGTCGTTGTAGCTGAAGGCCTGGCCTGCCTGACAGTTAATTATGAGCATGTCTTGCCCTT
CATGGTGGATATTCACAGCTGAAAGTGGTATTGGCATTTTTTTCTGAGGACACAACGAGGAAATCTGATAAATACGG

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CCACCTGAAGTCTAGCTCGGAGTTAACAATTTACCACGTTTAGAGCGGCCGCGATATCCTGCAGATGCATCCAGTAC
TAGTATGGCCC

CTA - 650bp

GGGGGATCCGCTCGCACTTAGCCTGTTAAGGGGTTCGCGCTCGTCTAGTCTGTGCTGTTGCCTGGATAGTAAATTAT
CATGGTACAAACTTTTAAGAGCCAGTTAAATGGAGATGGATTTAAAAAGAGTTATTGTAAAGTCTCCCCAGGTGTGT
CATTAAATATCCCAACAGATTGCCCTGGCCTGACCCCCTAAATGCAATTTTGGGATTCCCTTTTAGTTGCTTTCATT
AAAATGTACCAGCGCAGTAAAAAAAGCACAAAGTATATTGTTTATGTAACTCACTATCTCATTTGCACTGGTTACAT
GGCAGCTTCAGACTGACTAAAACTACACTTTTCCCACCATGGTTCAAAGATCAACAGAACTGGGCCAACAAAAGCAA
TTTTTTCATGTGGTCTAACTACCAACTTATTATGAGTTAAGTTACTTTTAGGTTTAAAATCACAGCAGTTTTTCCCT
CCACACCTCCCAGAGATACTTTCAGGGTGGCTAAACTTGGCTAAAGGCTTCCGGACCAACCCTTGTTTCTTTATGGT
GCTTGTGTCCTGACAACCGCGTAAGGCATGGAAATTCAGCTATTTATCCGATCGTTTATATGGGCGTGCGGCCGCGA
TATCCTGCAGATGCATCCAGTACTAGTATGGCCC

CTA - 750bp

GGGGGATCCTTGGACCGTTAATTCATATATCGAAGTAGCAGGTTGTTGCCCCGCCTGATGTTGCCACTACTTGCTCA
TGACAGTTTTTTTAGGCAATGCAAACTACTATTTGATATTTTTTTCCAAGTACAGTTGTAGGGTACTCCTTATACTG
ATTCTTCTGAGCCTGTACGGGGAGCATTAGGTACTGATGTAGTAGGAGTTGAGCTTCACAAATTCACCAGGTAAGCC
CAAATTTATTTTCTGCTTGGACAGGTCCACCTCACATGGGTCTGTCTAATATATTAAAAGAGGGATTTTCTTTGCTG
TATTGCAGCCCAGTATATCTGTTACTTACAGTAGTAGTCCATTATTGCTGGCCTAGGGGCTTTTGCTCCTACACGAA
CACCACTCTGTAAAATTTGAGGTCGTCCTTAGAGTCAAACCATTCATGGAGCGCTCTGTGCATCTACCAACTATCGC
TAAGCATTCACTTGGTTGGTTTAAGTGGAGGCAACTCCATTATCTTCTAGCATACCCTTCCCAGGCTACATGTAGAA
AGAGATCTGTTGGGCCCCACTATTTTTTCACCCAGGGAAGCCTACTTTAGTTATAGCTTGCCAGAGATTTTCTGTGT
CATGTAGAAGTCATCCACTTTTAACACCAGGAGGTGGATGTGGGGCCAGGAAATATGTCAATAACGATACGGGACTT
CTAACAGTGACTCGCGGCCGCGATATCCTGCAGATGCATCCAGTACTAGTATGGCCC

CTA - 850bp

GGGGGATCCTTAAGTCGTGTCCTTCTCCTACGATCTTGTGAACGATGGATATTTTCTTTCTAAACTTTAAACAAACA
GTGGAGAGATGTTGTTGTGTGTGGAACGACGCTTAGCCTACCGAGGAAGATCCAGACTACAATAGAATATGTGGCCA
AAACTCTCCGCAACTTCAGCAGCAAAAAGGATATTATTGACATAACCTCCTCACAAAAAGTACACAAATGGCTAAAT
AACAGAGCCCCTCTTTTTACTAGGGAAATGGTGGATGTGGACTTTAGAATTTAAGATAATAAAGCTCTTGATCCCAA
TGTTATTTCCATGTGAGGGACATTAAATTGAGTAACCTTTGCCACATACCCTCTCCCAGAGTCCATTCTCTAAAACT
TGAAGCTCCGCCCCTTTTTACGCACATTAGGCTTCCAATTACGGTCAATGGTCTTGAAGATTGGGAGCTTTTGAAGA
GTAATAAGAACCATCACAAAAAGGAACCCAGAAGCCGGGAGTGTCTACCAAAAAAATTCAAGGGTTAAAAAAAAGTG
ACATTTTCTCCTGTTTTTTACACATGATTTTGAATGCTGATGGGTCCACGTCCAGCTCTAAAGGTAGGTTCATGGTT
CTCCAAAGTTGCTTTCTTGTCAGAATTGAGCCACATCAGGTAGGTGGGGAAGTAGATCAGTGAGGATGCTTCACATG
TGTGGGCACTGGGAACAGAATGCTTCAATAACACGAGCTGACGAGGGCCCGCTATGAAAAAAAAGATTCTCTGTGCC
CCCTGGCGCCTCCGCACTTAAAGAATTGATGACCGTGCGGCCGCGATATCCTGCAGATGCATCCAGTACTAGTATGG
CCC

CTL - 150bp

AGTATGGCCCGGGGGATCCTACGTTCCAAATGCAGCGAGCTCGTATAACCCTTTAAGAGTTGCTCTTTTT
GTTTGGTAAGTTGCAAATCGAAGTTTTAGATTGAGTTCTACGTCGAGCGGCCGCGATATCCTGCAGATGC
ATCCAGTACA

CTL - 250bp

AGTATGGCCCGGGGGATCCTTATCTGTCAAAACCGCTAATGTCCGTTCTAAGACCGTCTGGAGAACACTTGCCCATC
AGTGCTTTTGAACCTTTTTTTCACAGGTCCCTTCCGATTACACTGAGAAGCTGACCACACCTGCTAGAAGATGGAGG
TATGCAGCCCGTTAGTAGGAGTAATACTACCCAGCTTATAACCCTCAAACGTAGGGCAGATGGCGGCCGCGATATCC
TGCAGATGCATCCAGTACA

CTL - 350bp

AGTATGGCCCGGGGGATCCTAGAGACCATTCGCGATTCCATGAGACTCCAAGGGTTCTGCACAACTTATGCACCTCT
ATTAGATCATTGTGTTCTACGAAGCCTGGACTGCATTACATATTCACAACCAACATGAGAAGAGCGGAATAGATGGC
CGGATGTTTGGTGGCTTTGATATATTGTGAGGAGCATTGCGAACCCTAGAGCTGTCCGGTCAAATAACCCCCTCACA
ATAAGTGTAATGTCATGGGATAATCAAAAGACTAAGGGAGGGCTTTTATAGAAGGCGTGAGGTCATGCTATCCCCCT
CTGAAGACGCGGCCGCGATATCCTGCAGATGCATCCAGTACA

CTL - 450bp

AGTATGGCCCGGGGGATCCGTATACGTTTCTAATTTGTAGTTAACGGTTGGATACCACTTTGAGGCATGTAATATGG
TACTGAGCTTCGGCACAGGGCTCAAATTGCATCATTAAATGTCTCCGATGTGGCTATATGTCATGGATAAAGGCAGC

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CCCCTATATCTTTTTTTGTGGCAGCATGGGTCCATCAAAGCAATTATTCAGGGTCTTAATGACCTCCACAGCTCTAA
ACGTAATTCATCTGGCTTTGCCTGTACTTACTTCCTCCATGAAAAAAAGTGTTGATAATGCTCATAATGCTGCCCAG
CAATTTCCTCCCTTCTCAAGACTATTCTGGCTTCCTGGGTACTTAAAAACAGGGCTTAGAGTATGGCTGCTGACAAA
ATTGCACTCTAAACGCTAGCTTAGGTCTTCTGCGGCCGCGATATCCTGCAGATGCATCCAGTACA

CTL - 550bp

AGTATGGCCCGGGGGATCCGTTAGCTATCGTTCGCGAGAAAGTTAGTAGACACACAGGACCCAGGCGTGCAAGTCAA
TTTCAGCTGACTACACCGATTCTGGTTAAAAGAGCCTATGGCCACCCTTATTTTAGAGAAAAAAAACCACACCTCTA
ATGTGTTGGGCACTAGAAAAAGCTAACTACCTAGTCCGTTTCTGGACGACTTCATTGGGAATAACATACCCCCCACT
GTGATTAAGACTGGCACTGTCCTAATGCTTTCTTCAATAGGTTTGGCTCATGTGTGATTCCCTCTGGCAAACTTATA
GAGGACAAGCAGAATAAACCAATTCAAGGTCGTTGTAGCTGAAGGCCTGGCCTGCCTGACAGTTAATTATGAGCATG
TCTTGCCCTTCATGGTGGATATTCACAGCTGAAAGTGGTATTGGCATTTTTTTCTGAGGACACAACGAGGAAATCTG
ATAAATACGGCCACCTGAAGTCTAGCTCGGAGTTAACAATTTACCACGTTTAGAGCGGCCGCGATATCCTGCAGATG
CATCCAGTACA

CTL - 650bp

AGTATGGCCCGGGGGATCCGCTCGCACTTAGCCTGTTAAGGGGTTCGCGCTCGTCTAGTCTGTGCTGTTGCCTGGAT
AGTAAATTATCATGGTACAAACTTTTAAGAGCCAGTTAAATGGAGATGGATTTAAAAAGAGTTATTGTAAAGTCTCC
CCAGGTGTGTCATTAAATATCCCAACAGATTGCCCTGGCCTGACCCCCTAAATGCAATTTTGGGATTCCCTTTTAGT
TGCTTTCATTAAAATGTACCAGCGCAGTAAAAAAAGCACAAAGTATATTGTTTATGTAACTCACTATCTCATTTGCA
CTGGTTACATGGCAGCTTCAGACTGACTAAAACTACACTTTTCCCACCATGGTTCAAAGATCAACAGAACTGGGCCA
ACAAAAGCAATTTTTTCATGTGGTCTAACTACCAACTTATTATGAGTTAAGTTACTTTTAGGTTTAAAATCACAGCA
GTTTTTCCCTCCACACCTCCCAGAGATACTTTCAGGGTGGCTAAACTTGGCTAAAGGCTTCCGGACCAACCCTTGTT
TCTTTATGGTGCTTGTGTCCTGACAACCGCGTAAGGCATGGAAATTCAGCTATTTATCCGATCGTTTATATGGGCGT
GCGGCCGCGATATCCTGCAGATGCATCCAGTACA

CTL - 750bp

AGTATGGCCCGGGGGATCCTTGGACCGTTAATTCATATATCGAAGTAGCAGGTTGTTGCCCCGCCTGATGTTGCCAC
TACTTGCTCATGACAGTTTTTTTAGGCAATGCAAACTACTATTTGATATTTTTTTCCAAGTACAGTTGTAGGGTACT
CCTTATACTGATTCTTCTGAGCCTGTACGGGGAGCATTAGGTACTGATGTAGTAGGAGTTGAGCTTCACAAATTCAC
CAGGTAAGCCCAAATTTATTTTCTGCTTGGACAGGTCCACCTCACATGGGTCTGTCTAATATATTAAAAGAGGGATT
TTCTTTGCTGTATTGCAGCCCAGTATATCTGTTACTTACAGTAGTAGTCCATTATTGCTGGCCTAGGGGCTTTTGCT
CCTACACGAACACCACTCTGTAAAATTTGAGGTCGTCCTTAGAGTCAAACCATTCATGGAGCGCTCTGTGCATCTAC
CAACTATCGCTAAGCATTCACTTGGTTGGTTTAAGTGGAGGCAACTCCATTATCTTCTAGCATACCCTTCCCAGGCT
ACATGTAGAAAGAGATCTGTTGGGCCCCACTATTTTTTCACCCAGGGAAGCCTACTTTAGTTATAGCTTGCCAGAGA
TTTTCTGTGTCATGTAGAAGTCATCCACTTTTAACACCAGGAGGTGGATGTGGGGCCAGGAAATATGTCAATAACGA
TACGGGACTTCTAACAGTGACTCGCGGCCGCGATATCCTGCAGATGCATCCAGTACA

CTL - 850bp

AGTATGGCCCGGGGGATCCTTAAGTCGTGTCCTTCTCCTACGATCTTGTGAACGATGGATATTTTCTTTCTAAACTT
TAAACAAACAGTGGAGAGATGTTGTTGTGTGTGGAACGACGCTTAGCCTACCGAGGAAGATCCAGACTACAATAGAA
TATGTGGCCAAAACTCTCCGCAACTTCAGCAGCAAAAAGGATATTATTGACATAACCTCCTCACAAAAAGTACACAA
ATGGCTAAATAACAGAGCCCCTCTTTTTACTAGGGAAATGGTGGATGTGGACTTTAGAATTTAAGATAATAAAGCTC
TTGATCCCAATGTTATTTCCATGTGAGGGACATTAAATTGAGTAACCTTTGCCACATACCCTCTCCCAGAGTCCATT
CTCTAAAACTTGAAGCTCCGCCCCTTTTTACGCACATTAGGCTTCCAATTACGGTCAATGGTCTTGAAGATTGGGAG
CTTTTGAAGAGTAATAAGAACCATCACAAAAAGGAACCCAGAAGCCGGGAGTGTCTACCAAAAAAATTCAAGGGTTA
AAAAAAAGTGACATTTTCTCCTGTTTTTTACACATGATTTTGAATGCTGATGGGTCCACGTCCAGCTCTAAAGGTAG
GTTCATGGTTCTCCAAAGTTGCTTTCTTGTCAGAATTGAGCCACATCAGGTAGGTGGGGAAGTAGATCAGTGAGGAT
GCTTCACATGTGTGGGCACTGGGAACAGAATGCTTCAATAACACGAGCTGACGAGGGCCCGCTATGAAAAAAAAGAT
TCTCTGTGCCCCCTGGCGCCTCCGCACTTAAAGAATTGATGACCGTGCGGCCGCGATATCCTGCAGATGCATCCAGT
ACA

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