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September 7, 2012

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Sincerely yours,

Customer Solutions
858-202-4566

<u>Nextera® DNA Sample Preparation Kit</u> (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**

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[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.

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.

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

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

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′ GATCGGAAGAGCACACGTCTGAACTCCAGTCAC<u>ATCACG</u>ATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 2
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCAC<u>CGATGT</u>ATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 3
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCAC<u>TTAGGC</u>ATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 4
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCAC<u>TGACCA</u>ATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 5
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCAC<u>ACAGTG</u>ATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 6
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCAC<u>GCCAAT</u>ATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 7
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCAC<u>CAGATC</u>ATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 8
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCAC<u>ACTTGA</u>ATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 9
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCAC<u>GATCAG</u>ATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 10
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCAC<u>TAGCTT</u>ATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 11
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCAC<u>GGCTAC</u>ATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 12
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCAC<u>CTTGTA</u>ATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 13
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCAC<u>AGTCAA</u>CAATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 14
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCAC<u>AGTTCC</u>GTATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 15
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCAC<u>ATGTCA</u>GAATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 16
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCAC<u>CCGTCC</u>GATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 18 [7]
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCAC<u>GTCCGC</u>ACATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 19
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCAC<u>GTGAAA</u>CGATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 20
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCAC<u>GTGGCC</u>TTATCTCGTATGCCGTCTTCTGCTTG
TruSeq Adapter, Index 21
5′ GATCGGAAGAGCACACGTCTGAACTCCAGTCAC<u>GTTTCG</u>GAATCTCGTATGCCGTCTTCTGCTTG
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.

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.

RNA PCR Primer, Index 9 (RPI9)
5' CAAGCAGAAGACGGCATACGAGAT<u>CTGATC</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 10 (RPI10)
5' CAAGCAGAAGACGGCATACGAGAT<u>AAGCTA</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 11 (RPI11)
5' CAAGCAGAAGACGGCATACGAGAT<u>GTAGCC</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 12 (RPI12)
5' CAAGCAGAAGACGGCATACGAGAT<u>TACAAG</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 13 (RPI13)
5' CAAGCAGAAGACGGCATACGAGAT<u>TTGACT</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 14 (RPI14)
5' CAAGCAGAAGACGGCATACGAGAT<u>GGAACT</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 15 (RPI15)
5' CAAGCAGAAGACGGCATACGAGAT<u>TGACAT</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 16 (RPI16)
5' CAAGCAGAAGACGGCATACGAGAT<u>GGACGG</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 17 (RPI17)
5' CAAGCAGAAGACGGCATACGAGAT<u>CTCTAC</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 18 (RPI18)
5' CAAGCAGAAGACGGCATACGAGAT<u>GCGGAC</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 19 (RPI19)
5' CAAGCAGAAGACGGCATACGAGAT<u>TTTCAC</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 20 (RPI20)
5' CAAGCAGAAGACGGCATACGAGAT<u>GGCCAC</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 21 (RPI21)
5' CAAGCAGAAGACGGCATACGAGAT<u>CGAAAC</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 22 (RPI22)
5' CAAGCAGAAGACGGCATACGAGAT<u>CGTACG</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 23 (RPI23)
5' CAAGCAGAAGACGGCATACGAGAT<u>CCACTC</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 24 (RPI24)
5' CAAGCAGAAGACGGCATACGAGAT<u>GCTACC</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 25 (RPI25)
5' CAAGCAGAAGACGGCATACGAGAT<u>ATCAGT</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 26 (RPI26)
5' CAAGCAGAAGACGGCATACGAGAT<u>GCTCAT</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 27 (RPI27)
5' CAAGCAGAAGACGGCATACGAGAT<u>AGGAAT</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 28 (RPI28)
5' CAAGCAGAAGACGGCATACGAGAT<u>CTTTTG</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 29 (RPI29)
5' CAAGCAGAAGACGGCATACGAGAT<u>TAGTTG</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 30 (RPI30)
5' CAAGCAGAAGACGGCATACGAGAT<u>CCGGTG</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 31 (RPI31)
5' CAAGCAGAAGACGGCATACGAGAT<u>ATCGTG</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 32 (RPI32)
5' CAAGCAGAAGACGGCATACGAGAT<u>TGAGTG</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA

RNA PCR Primer, Index 33 (RPI33)
5' CAAGCAGAAGACGGCATACGAGAT<u>CGCCTG</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 34 (RPI34)
5' CAAGCAGAAGACGGCATACGAGAT<u>GCCATG</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 35 (RPI35)
5' CAAGCAGAAGACGGCATACGAGAT<u>AAAATG</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 36 (RPI36)
5' CAAGCAGAAGACGGCATACGAGAT<u>TGTTGG</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 37 (RPI37)
5' CAAGCAGAAGACGGCATACGAGAT<u>ATTCCG</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 38 (RPI38)
5' CAAGCAGAAGACGGCATACGAGAT<u>AGCTAG</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 39 (RPI39)
5' CAAGCAGAAGACGGCATACGAGAT<u>GTATAG</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 40 (RPI40)
5' CAAGCAGAAGACGGCATACGAGAT<u>TCTGAG</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 41 (RPI41)
5' CAAGCAGAAGACGGCATACGAGAT<u>GTCGTC</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 42 (RPI42)
5' CAAGCAGAAGACGGCATACGAGAT<u>CGATTA</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 43 (RPI43)
5' CAAGCAGAAGACGGCATACGAGAT<u>GCTGTA</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 44 (RPI44)
5' CAAGCAGAAGACGGCATACGAGAT<u>ATTATA</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 45 (RPI45)
5' CAAGCAGAAGACGGCATACGAGAT<u>GAATGA</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 46 (RPI46)
5' CAAGCAGAAGACGGCATACGAGAT<u>TCGGGA</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 47 (RPI47)
5' CAAGCAGAAGACGGCATACGAGAT<u>CTTCGA</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA
RNA PCR Primer, Index 48 (RPI48)
5' CAAGCAGAAGACGGCATACGAGAT<u>TGCCGA</u>GTGACTGGAGTTCCTTGGCACCCGAGAATTCCA

Nextera® DNA Sample Prep Kit (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
```

Oligonucleotide sequences for Genomic DNA

Adapters
```
5' P-GATCGGAAGAGCTCGTATGCCGTCTTCTGCTTG
5' ACACTCTTTCCCTACACGACGCTCTTCCGATCT
```

PCR Primers
```
5' AATGATACGGCGACCACCGAGATCTACACTCTTTCCCTACACGACGCTCTTCCGATCT
5' CAAGCAGAAGACGGCATACGAGCTCTTCCGATCT
```

Genomic DNA Sequencing Primer
```
5' ACACTCTTTCCCTACACGACGCTCTTCCGATCT
```

Paired End DNA oligonucleotide sequences

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
```

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

PE Read 2 Sequencing Primer

5' CGGTCTCGGCATTCCTGCTGAACCGCTCTTCCGATCT

Oligonucleotide sequences for the Multiplexing Sample Prep Oligo Only Kit [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

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

**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
CGTCTGGAGAACACTTGCCCATCAGTGCTTTTGAACCTTTTTTTTCACAGGTCCCTTCCGATTACACTGAGAAGCTGA
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
GTTGCCCCGCCTGATGTTGCCACTACTTGCTCATGACAGTTTTTTAGGCAATGCAAACTACTATTTGATATTTTTT
TCCAAGTACAGTTGTAGGGTACTCCTTATACTGATTCTTCTGAGCCTGTACGGGAGCATTAGGTACTGATGTAGTA
GGAGTTGAGCTTCACAAATTCACCAGGTAAGCCCAAATTTATTTTCTGCTTGGACAGGTCCACCTCACATGGGTCTG
TCTAATATATTAAAAGAGGGATTTTCTTTGCTGTATTGCAGCCCAGTATATCTGTTACTTACAGTAGTAGTCCATTA
TTGCTGGCCTAGGGGCTTTTGCTCCTACACGAACACCACTCTGTAAAATTTGAGGTCGTCCTTAGAGTCAAACCATT

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CATGGAGCGCTCTGTGCATCTACCAACTATCGCTAAGCATTCACTTGGTTGGTTTAAGTGGAGGCAACTCCATTATC
TTCTAGCATACCCTTCCCAGGCTACATGTAGAAAGAGATCTGTTGGGCCCCACTATTTTTTCACCCAGGGAAGCCTA
CTTTAGTTATAGCTTGCCAGAGATTTTCTGTGTCATGTAGAAGTCATCCACTTTTAACACCAGGAGGTGGATGTGGG
GCCAGGAAATATGTCAATAACGATACGGGACTTCTAACAGTGACTCGCGGCCGCGAT
```

CTE2 - 850bp

```
ATCCTGCAGATGCATCCAGTACTAGTATGGCCCGGGGGATCCTTAAGTCGTGTCCTTCTCCTACGATCTTGTGAACG
ATGGATATTTTCTTTCTAAACTTTAAACAAACAGTGGAGAGATGTTGTTGTGTGTGGAACGACGCTTAGCCTACCGA
GGAAGATCCAGACTACAATAGAATATGTGGCCAAAACTCTCCGCAACTTCAGCAGCAAAAAGGATATTATTGACATA
ACCTCCTCACAAAAAGTACACAAATGGCTAAATAACAGAGCCCCTCTTTTTACTAGGGAAATGGTGGATGTGGACTT
TAGAATTTAAGATAATAAAGCTCTTGATCCCAATGTTATTTCCATGTGAGGGACATTAAATTGAGTAACCTTTGCCA
CATACCCTCTCCCAGAGTCCATTCTCTAAAACTTGAAGCTCCGCCCCTTTTTACGCACATTAGGCTTCCAATTACGG
TCAATGGTCTTGAAGATTGGGAGCTTTTGAAGAGTAATAAGAACCATCACAAAAAGGAACCCAGAAGCCGGGAGTGT
CTACCAAAAAATTCAAGGGTTAAAAAAAGTGACATTTTCTCCTGTTTTTTACACATGATTTTGAATGCTGATGGG
TCCACGTCCAGCTCTAAAGGTAGGTTCATGGTTCTCCAAAGTTGCTTTCTTGTCAGAATTGAGCCACATCAGGTAGG
TGGGGAAGTAGATCAGTGAGGATGCTTCACATGTGTGGGCACTGGGAACAGAATGCTTCAATAACACGAGCTGACGA
GGGCCCGCTATGAAAAAAAAGATTCTCTGTGCCCCCTGGCGCCTCCGCACTTAAAGAATTGATGACCGTGCGGCCGC
GAT
```

CTE1 - 123bp

```
GATCCTACGTTCCAAATGCAGCGAGCTCGTATAACCCTTTAAGAGTTGCTCTTTTTGTTTGGTAAGTTGCAAATCGA
AGTTTTAGATTGAGTTCTACGTCGAGCGGCCGCGATATCCTGCAGATGCA
```

CTE1 - 223bp

```
GATCCTTATCTGTCAAAACCGCTAATGTCCGTTCTAAGACCGTCTGGAGAACACTTGCCCATCAGTGCTTTTGAACC
TTTTTTTTCACAGGTCCCTTCCGATTACACTGAGAAGCTGACCACACCTGCTAGAAGATGGAGGTATGCAGCCCGTTA
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
```

```
GTGTCCTGACAACCGCGTAAGGCATGGAAATTCAGCTATTTATCCGATCGTTTATATGGGCGTGCGGCCGCGATATC
CTGCAGATGCA
```

CTE1 - 723bp

```
GATCCTTGGACCGTTAATTCATATATCGAAGTAGCAGGTTGTTGCCCCGCCTGATGTTGCCACTACTTGCTCATGAC
AGTTTTTTTAGGCAATGCAAACTACTATTTGATATTTTTTTCCAAGTACAGTTGTAGGGTACTCCTTATACTGATTC
TTCTGAGCCTGTACGGGGAGCATTAGGTACTGATGTAGTAGGAGTTGAGCTTCACAAATTCACCCAGGTAAGCCCAAA
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

```
GGGGGATCCTAGAGACCATTCGCGATTCCATGAGACTCCAAGGGGTTCTGCACAACTTATGCACCTCTATTAGATCAT
TGTGTTCTACGAAGCCTGGACTGCATTACATATTCACAACCAACATGAGAAGAGCGGAATAGATGGCCGGATGTTTG
GTGGCTTTGATATATTGTGAGGAGCATTGCGAACCCTAGAGCTGTCCGGTCAAATAACCCCCTCACAATAAGTGTAA
TGTCATGGGATAATCAAAAGACTAAGGGAGGGCTTTTATAGAAGGCGTGAGGTCATGCTATCCCCCTCTGAAGACGC
GGCCGCGATATCCTGCAGATGCATCCAGTACTAGTATGGCCC
```

CTA - 450bp

```
GGGGGATCCGTATACGTTTCTAATTTGTAGTTAACGGTTGGATACCACTTTGAGGCATGTAATATGGTACTGAGCTT
CGGCACAGGGCTCAAATTGCATCATTAAATGTCTCCGATGTGGCTATATGTCATGGATAAAGGCAGCCCCCTATATC
TTTTTTTGTGGCAGCATGGGTCCATCAAAGCAATTATTCAGGGTCTTAATGACCTCCACAGCTCTAAACGTAATTCA
TCTGGCTTTGCCTGTACTTACTTCCTCCATGAAAAAAAGTGTTGATAATGCTCATAATGCTGCCCAGCAATTTCCTC
CCTTCTCAAGACTATTCTGGCTTCCTGGGTACTTAAAAACAGGGCTTAGAGTATGGCTGCTGACAAAATTGCACTCT
AAACGCTAGCTTAGGTCTTCTGCGGCCGCGATATCCTGCAGATGCATCCAGTACTAGTATGGCCC
```

CTA - 550bp

```
GGGGGATCCGTTAGCTATCGTTCGCGAGAAAGTTAGTAGACACACAGGACCCAGGCGTGCAAGTCAATTTCAGCTGA
CTACACCGATTCTGGTTAAAAGAGCCTATGGCCACCCTTATTTTAGAGAAAAAAACCACACCTCTAATGTGTTGGG
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
AGTGCTTTTGAACCTTTTTTTTCACAGGTCCCTTCCGATTACACTGAGAAGCTGACCACACCTGCTAGAAGATGGAGG
TATGCAGCCCGTTAGTAGGAGTAATACTACCCAGCTTATAACCCTCAAACGTAGGGCAGATGGCGGCCGCGATATCC
TGCAGATGCATCCAGTACA
```

CTL - 350bp
```
AGTATGGCCCGGGGGATCCTAGAGACCATTCGCGATTCCATGAGACTCCAAGGGTTCTGCACAACTTATGCACCTCT
ATTAGATCATTGTGTTCTACGAAGCCTGGACTGCATTACATATTCACAACCAACATGAGAAGAGCGGAATAGATGGC
CGGATGTTTGGTGGCTTTGATATATTGTGAGGAGCATTGCGAACCCTAGAGCTGTCCGGTCAAATAACCCCCTCACA
ATAAGTGTAATGTCATGGGATAATCAAAAGACTAAGGGAGGGCTTTTATAGAAGGCGTGAGGTCATGCTATCCCCCT
CTGAAGACGCGGCCGCGATATCCTGCAGATGCATCCAGTACA
```

CTL - 450bp
```
AGTATGGCCCGGGGGATCCGTATACGTTTCTAATTTGTAGTTAACGGTTGGATACCACTTTGAGGCATGTAATATGG
TACTGAGCTTCGGCACAGGGCTCAAATTGCATCATTAAATGTCTCCGATGTGGCTATATGTCATGGATAAAGGCAGC
```

```
CCCCTATATCTTTTTTTTGTGGCAGCATGGGTCCATCAAAGCAATTATTCAGGGTCTTAATGACCTCCACAGCTCTAA
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
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CTL - 850bp

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