

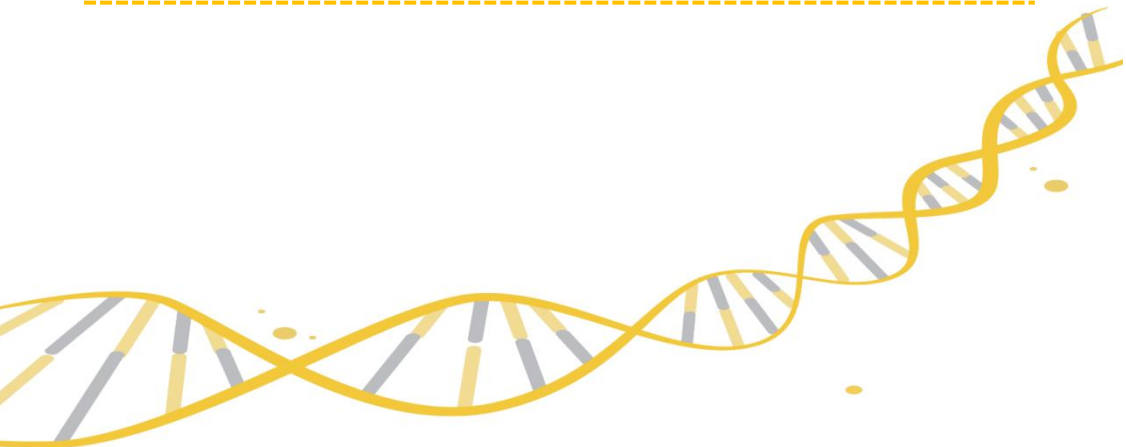


Unique Dual Index (with UMI) for Illumina

RK21701 MidiSet (24 indices)

RK21702 Set_A (48 indices)

RK21703 Set_B (48 indices)



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1. Introduction

ABclonal Unique Dual Index (with UMI) for Illumina® contains 192 dual-end indexes located in P5 and P7, with unique pairing between the P5 and P7 indexes, ensuring no other index combinations occur. This product is suitable for sequencing a large number of samples simultaneously. The Unique Dual Index (with UMI) for Illumina® product includes a Truncated UMI Adapter with UMI tags, with a concentration of 15 µM, and UDI Primers with various index combinations. The Truncated UMI Adapter is used in the DNA ligation step, enabling dual-end UMI correction in library sequencing results, which improves the sensitivity and specificity of low-frequency mutation detection; the UDI Primer is used in the PCR amplification step of the library, effectively reducing tag jumping and mismatching. This product is applicable to the construction of DNA and RNA libraries.

2. Components

Unique Dual Index (with UMI) for Illumina

Components	RK21701	RK21702	RK21703
Truncated UMI Adapter	120 µL	240 µL	240 µL
UDI Primer 1-24	5 µL	5 µL	-
UDI Primer 25-48	-	5 µL	-
UDI Primer 49-96	-	-	5 µL

3. Storage

All components should be stored at -20°C. The shelf life of each reagent is one year when stored properly.

4. Applications

DNA or RNA library preparation for Illumina platforms in combination with any of the following kits:

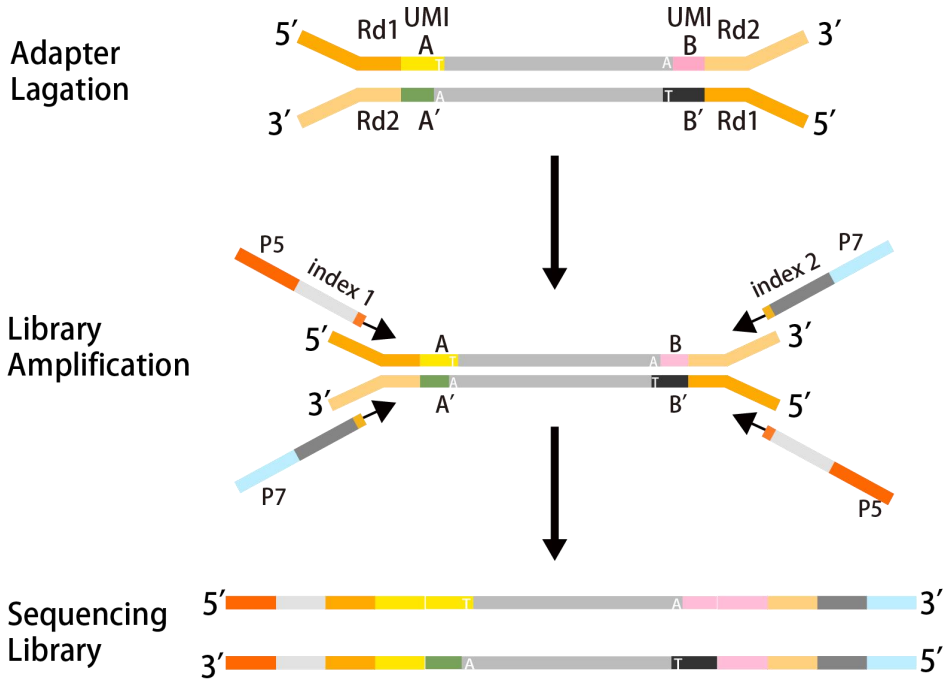
- ❖ Rapid DNA Lib Prep kit;
- ❖ Rapid Plus DNA Lib Prep kit;
- ❖ Rapid CE DNA Lib Prep Kit for Illumina V2;
- ❖ Rapid Plus DNA Lib Prep Kit for Illumina V2;
- ❖ ABclonal Whole RNA-seq Lib Prep kit;
- ❖ mRNA-seq Lib Prep Kit

5. Directions for use

- ❖ Thaw the Truncated Adapter and UDI Primers at room temperature. Briefly vortex to mix, then centrifuge each for 30 seconds to collect the reagent at the bottom of the tubes.
- ❖ During the ligation step, do not premix the Truncated UMI Adapter with the ligase, as this will generate a large amount of adapter dimers, severely affecting the yield.
- ❖ Perform TA-ligation using the included Truncated Adapter using the protocol outlined by the library prep kit.

- ❖ Perform indexing PCR using UDI Primers using the protocol outlined by the library prep kit.

6. Library Structure



7. Adapter Sequence

Truncated UMI Adapter Oligo 1

5-ACACTCTTCCCTACACGACGCTCTCCGATCTNNN(S)T

Truncated UMI Adapter Oligo 2

5-(S)NNNAGATCGGAAGAGCACACGTCTGAACTCCAGTC

UDI Primers 1 (P5):

5-AATGATACGGCGACCACCGAGATCTACAC[i5index]ACACTCTTCCCTACACGAC
GCTCTCCGATCT-3

UDI Primers 2 (P7):

5-CAAGCAGAAGACGGCATAACGAGAT[i7index]GTGACTGGAGTTCAGACGTGTGCT
CTCCGATCT-3

Unique Dual Index (with UMI) for Illumina MidiSet (24 indices) RK21701

Components	i5 index (HiSeq® 2000/2500, MiSeq®, NovaSeq® systems)	i5 index (HiSeq 3000, 4000, NextSeq®, MiniSeq® systems)	i7 index (all Illumina systems)
UDI Primer 1	ATATGCGC	GCGCATAT	CTGATCGT
UDI Primer 2	TGGTACAG	CTGTACCA	ACTCTCGA
UDI Primer 3	TAACCGGT	ACCGGTTA	TGAGCTAG
UDI Primer 4	AACCGTTC	GAACGGTT	GAGACGAT
UDI Primer 5	GAACATCG	CGATGTTC	CTTGTCGA
UDI Primer 6	CCTTGTAG	CTACAAGG	TTCCAAGG
UDI Primer 7	TCAGGCTT	AAGCCTGA	CGCATGAT
UDI Primer 8	GTTCTCGT	ACGAGAAC	ACGGAACA
UDI Primer 9	AGAACGAG	CTCGTTCT	CGGCTAAT
UDI Primer 10	TGCTTCCA	TGGAAGCA	ATCGATCG
UDI Primer 11	CTTCGACT	AGTCGAAG	GCAAGATC
UDI Primer 12	CACCTGTT	AACAGGTG	GCTATCCT
UDI Primer 13	ATCACACG	CGTGTGAT	TACGCTAC
UDI Primer 14	CCGTAAGA	TCTTACGG	TGGACTCT
UDI Primer 15	TACGCCTT	AAGGCGTA	AGAGTAGC
UDI Primer 16	CGACGTTA	TAACGTCTG	ATCCAGAG
UDI Primer 17	ATGCACGA	TCGTGCAT	GACGATCT
UDI Primer 18	CCTGATTG	CAATCAGG	AACTGAGC
UDI Primer 19	GTAGGAGT	ACTCTAC	CTTAGGAC
UDI Primer 20	ACTAGGAG	CTCCTAGT	GTGCCATA
UDI Primer 21	CACTAGCT	AGCTAGTG	GAATCCGA
UDI Primer 22	ACGACTTG	CAAGTCGT	TCGCTGTT
UDI Primer 23	CGTGTGTA	TACACACG	TTCGTTGG
UDI Primer 24	GTTGACCT	AGGTCAAC	AAGCACTG

Unique Dual Index (with UMI) for Illumina Set_A (48 indices) RK21702

Components	i5 index (HiSeq® 2000/2500, MiSeq®, NovaSeq® systems)	i5 index (HiSeq 3000, 4000, NextSeq®, MiniSeq® systems)	i7 index (all Illumina systems)
UDI Primer 1	ATATGCGC	GCGCATAT	CTGATCGT
UDI Primer 2	TGGTACAG	CTGTACCA	ACTCTCGA
UDI Primer 3	TAACCGGT	ACCGGTTA	TGAGCTAG
UDI Primer 4	AACCGTTC	GAACGGTT	GAGACGAT
UDI Primer 5	GAACATCG	CGATGTTC	CTTGTCGA
UDI Primer 6	CCTTGTAG	CTACAAGG	TTCCAAGG
UDI Primer 7	TCAGGCTT	AAGCCTGA	CGCATGAT
UDI Primer 8	GTTCTCGT	ACGAGAAC	ACGGAACA
UDI Primer 9	AGAACGAG	CTCGTTCT	CGGCTAAT
UDI Primer 10	TGCTTCCA	TGGAAGCA	ATCGATCG
UDI Primer 11	CTTCGACT	AGTCGAAG	GCAAGATC
UDI Primer 12	CACCTGTT	AACAGGTG	GCTATCCT
UDI Primer 13	ATCACACG	CGTGTGAT	TACGCTAC
UDI Primer 14	CCGTAAGA	TCTTACGG	TGGACTCT
UDI Primer 15	TACGCCTT	AAGGCGTA	AGAGTAGC
UDI Primer 16	CGACGTTA	TAACGTCCG	ATCCAGAG
UDI Primer 17	ATGCACGA	TCGTGCAT	GACGATCT
UDI Primer 18	CCTGATTG	CAATCAGG	AACTGAGC
UDI Primer 19	GTAGGAGT	ACTCTAC	CTTAGGAC
UDI Primer 20	ACTAGGAG	CTCCTAGT	GTGCCATA
UDI Primer 21	CACTAGCT	AGCTAGTG	GAATCCGA
UDI Primer 22	ACGACTTG	CAAGTCGT	TCGCTGTT
UDI Primer 23	CGTGTGTA	TACACACG	TTCGTTGG
UDI Primer 24	GTTGACCT	AGGTCAAC	AAGCACTG
UDI Primer 25	ACTCCATC	GATGGAGT	CCTTGATC
UDI Primer 26	CAATGTGG	CCACATTG	GTCGAAGA

UDI Primer 27	TTGCAGAC	GTCTGCAA	ACCACGAT
UDI Primer 28	CAGTCCAA	TTGGA CTG	GATTACCG
UDI Primer 29	ACGTT CAG	CTGAACGT	GCACA ACT
UDI Primer 30	AACGTCTG	CAGACGTT	GCGTCATT
UDI Primer 31	TATCGGTC	GACCGATA	ATCCGGTA
UDI Primer 32	CGCTCTAT	ATAGAGCG	CGTTGCAA
UDI Primer 33	GATTGCTC	GAGCAATC	GTGAAGTG
UDI Primer 34	GATGTGTG	CACACATC	CATGGCTA
UDI Primer 35	CGCAATCT	AGATTGCG	ATGCCTGT
UDI Primer 36	TGGTAGCT	AGCTACCA	CAACACCT
UDI Primer 37	GATAGGCT	AGCCTATC	TGTGACTG
UDI Primer 38	AGTGGATC	GATCCACT	GTCATCGA
UDI Primer 39	TTGGACGT	ACGTCCAA	AGCACTTC
UDI Primer 40	ATGACGTC	GACGTCAT	GAAGGAAG
UDI Primer 41	GAAGTTGG	CCA ACTTC	GTTGTT CG
UDI Primer 42	CATACCAC	GTGGTATG	CGGTTGTT
UDI Primer 43	TGGCATGT	ACATGCCA	ACTGAGGT
UDI Primer 44	CTGTTGAC	GTCAACAG	TGAAGACG
UDI Primer 45	ATCGCCAT	ATGGCGAT	GTTACGCA
UDI Primer 46	TTGCGAAG	CTTCGCAA	AGCGTGTT
UDI Primer 47	AGTTCGTC	GACGAACT	GATCGAGT
UDI Primer 48	GAGCAGTA	TACTGCTC	ACAGCTCA

Unique Dual Index (with UMI) for Illumina Set_B (48 indices) RK21703

Components	i5 index (HiSeq® 2000/2500, MiSeq®, NovaSeq® systems)	i5 index (HiSeq 3000, 4000, NextSeq®, MiniSeq® systems)	i7 index (all Illumina systems)
UDI Primer 49	ACAGCTCA	TGAGCTGT	GAGCAGTA
UDI Primer 50	GATCGAGT	ACTCGATC	AGTTCGTC
UDI Primer 51	AGCGTGTT	AACACGCT	TTGCGAAG
UDI Primer 52	GTTACGCA	TGCGTAAC	ATCGCCAT
UDI Primer 53	TGAAGACG	CGTCTTCA	TGGCATGT
UDI Primer 54	ACTGAGGT	ACCTCAGT	CTGTTGAC
UDI Primer 55	CGGTTGTT	AACAACCG	CATACCAC
UDI Primer 56	GTTGTTG	CGAACAAAC	GAAGTTGG
UDI Primer 57	GAAGGAAG	CTTCCTTC	ATGACGTC
UDI Primer 58	AGCACTTC	GAAGTGCT	TTGGACGT
UDI Primer 59	GTCATCGA	TCGATGAC	AGTGGATC
UDI Primer 60	TGTGACTG	CAGTCACA	GATAGGCT
UDI Primer 61	CAACACCT	AGGTGTTG	TGGTAGCT
UDI Primer 62	ATGCCTGT	ACAGGCAT	CGCAATCT
UDI Primer 63	CATGGCTA	TAGCCATG	GATGTGTG
UDI Primer 64	GTGAAGTG	CACTTCAC	GATTGCTC
UDI Primer 65	CGTTGCAA	TTGCAACG	CGCTCTAT
UDI Primer 66	ATCCGGTA	TACCGGAT	TATCGGTC
UDI Primer 67	GCGTCATT	AATGACGC	AACGTCTG
UDI Primer 68	GCACAAC	AGTTGTGC	ACGTTGAG
UDI Primer 69	GATTACCG	CGGTAATC	CAGTCAA
UDI Primer 70	ACCACGAT	ATCGTGGT	TTGCAGAC
UDI Primer 71	GTCGAAGA	TCTTCGAC	CAATGTGG
UDI Primer 72	CCTTGATC	GATCAAGG	ACTCCATC
UDI Primer 73	AAGCACTG	CAGTGCTT	GTTGACCT
UDI Primer 74	TTCGTTGG	CCAACGAA	CGTGTGTA

UDI Primer 75	TCGCTGTT	AACAGCGA	ACGACTTG
UDI Primer 76	GAATCCGA	TCGGATTC	CACTAGCT
UDI Primer 77	GTGCCATA	TATGGCAC	ACTAGGAG
UDI Primer 78	CTTAGGAC	GTCCTAAG	GTAGGAGT
UDI Primer 79	AACTGAGC	GCTCAGTT	CCTGATTG
UDI Primer 80	GACGATCT	AGATCGTC	ATGCACGA
UDI Primer 81	ATCCAGAG	CTCTGGAT	CGACGTTA
UDI Primer 82	AGAGTAGC	GCTACTCT	TACGCCTT
UDI Primer 83	TGGACTCT	AGAGTCCA	CCGTAAGA
UDI Primer 84	TACGCTAC	GTAGCGTA	ATCACACG
UDI Primer 85	GCTATCCT	AGGATAGC	CACCTGTT
UDI Primer 86	GCAAGATC	GATCTTGC	CTTCGACT
UDI Primer 87	GCCTATCA	TGATAGGC	CGACCATT
UDI Primer 88	CGGCTAAT	ATTAGCCG	AGAACGAG
UDI Primer 89	ACGGAACA	TGTTCCGT	GTTCTCGT
UDI Primer 90	CGCATGAT	ATCATGCG	TCAGGCTT
UDI Primer 91	TTCCAAGG	CCTTGGAA	CCTTGTAG
UDI Primer 92	CTTGTCGA	TCGACAAG	GAACATCG
UDI Primer 93	GAGACGAT	ATCGTCTC	TAACCGGT
UDI Primer 94	TGAGCTAG	CTAGCTCA	AACCGTTC
UDI Primer 95	ACTCTCGA	TCGAGAGT	TGGTACAG
UDI Primer 96	CTGATCGT	ACGATCAG	ATATGCCG

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