

**VAHTS® Dual UMI UDI
Adapters Set 1 - Set 4 for Illumina**

N351/N352/N353/N354



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Instruction for Use

Version 22.1

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01/Product Description

VAHTS Dual UMI UDI Adapters Set 1 - Set 4 for Illumina is specially designed for DNA library preparation for Illumina high-throughput sequencing. VAHTS Dual UMI Adapters for Illumina included in this kit is short dual UMI Y Adapters. It is compatible with various TA-ligation library preparation kits. After Adapter ligation, Insert DNA is flanked by 5 - 6 nt Unique Molecular Identifier (UMI), which can be used for low-frequency variant detection. VAHTS UDI Primer for Illumina contains specifically matched Unique Dual Index (UDI). After library amplification, two completely independent Index double tests can be realized, which minimizes Index hopping and Index misassignment, thus ensuring data accuracy and confidence.

This kit contains Set 1 - Set 4. Each Set contains 24 VAHTS UDI Primer for Illumina and VAHTS Dual UMI Adapters for Illumina. All the Adapters in this kit have undergone rigorous quality control and functional test, ensuring the stability and repeatability of library preparation.

02/Components

Components	N351-01 (96 rxns)	N352-01 (96 rxns)	N353-01 (96 rxns)	N354-01 (96 rxns)
■ VAHTS UDI Primer for Illumina (UDI 001 - UDI 024)	20 µl/each			
■ VAHTS UDI Primer for Illumina (UDI 025 - UDI 048)		20 µl/each		
■ VAHTS UDI Primer for Illumina (UDI 049 - UDI 072)			20 µl/each	
■ VAHTS UDI Primer for Illumina (UDI 073 - UDI 096)				20 µl/each
■ VAHTS Dual UMI Adapters for Illumina	480 µl	480 µl	480 µl	480 µl

▲ The use amount of DNA Adapter for a single DNA library depends on the input DNA amount. Refer to Appendix for specific concentration.

03/Storage

Store at -30 ~ -15°C and transport at ≤0°C.

04/Applications

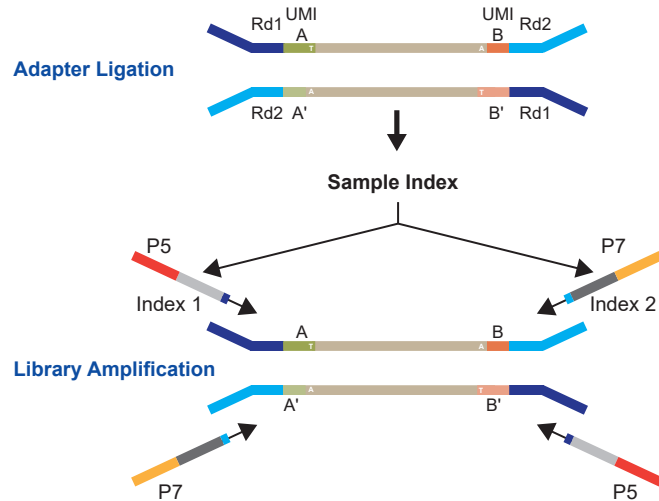
VAHTS Dual UMI UDI Adapters Set 1 - Set 4 for Illumina (Vazyme #N351-N354) is a dedicated kit for Vazyme ND series library preparation kit. It is compatible with various template type: genomic DNA, cfDNA, ctDNA and FFPE DNA. It is suitable for multi-sample dual indexed DNA library preparation and can effectively prevent crosstalk between samples and realize the low-frequency variant detection.

05/Notes

1. The use amount of DNA Adapter depends on the input DNA amount. Refer to Appendix for specific concentration.
2. Please do not premix Adapter, Ligation Buffer and Ligase, or it may result in Adapter self-ligation.
3. Please do not keep this product at room temperature, or the ligation efficiency may decrease.

06/Library Structure and Sequences

The library structure is as follows:



Each Dual UMI Adapter contains dual UMI sequence and each UDI Primer contains dual Index sequence. The corresponding sequences are as follows:

VAHTS Dual UMI Adapters for Illumina

Name	Sequence
Dual UMI Adapters	5'-ACACTCTTTCCCTACACGACGCTCTCCGATCTNNNNN(N)-s-T-3'
	3'-CTGACCTCAAGTCTGCACACGAGAAGGCTAGANNNNN(N)-p-5'

▲-S- represents thio-modification. -p- represents phosphorylation. NNNNN (N) represents 5 - 6 nt UMI.

VAHTS UDI Primer for Illumina

Name	Sequence
i5 PCR Primers	5'-AATGATACGGCGACCACCGAGATCTACAC[i5]ACACTCTTTCCCTACACGACGCTCTCCGATC-s-T-3'
i7 PCR Primers	5'-CAAGCAGAAGACGGCATACGAGAT[i7]GTGACTGGAGTTCAGACGTGTGCTCTTCCGATC-s-T-3'

▲-S- represents thio-modification. [i5] indicates 8 bp i5 Index and [i7] indicates 8 bp i7 Index.

Index sequences are as follows:

VAHTS UDI Primer for Illumina	i5 Index (NovaSeq v1.0, HiSeq 2000/2500, MiSeq)	i5 Index (NovaSeq v1.5, HiSeq 3000/4000, NextSeq, MiniSeq)	i7 Index (all Illumina systems)
UDI 001	CGACCATT	AATGGTCG	GCCTATCA
UDI 002	GATAGCGA	TCGCTATC	CTTGGATG
UDI 003	AATGGACG	CGTCCATT	AGTCTCAC
UDI 004	CGCTAGTA	TACTAGCG	CTCATCAG
UDI 005	TCTCTAGG	CCTAGAGA	TGTACCGT
UDI 006	ACATTGCG	CGCAATGT	AAGTCGAG
UDI 007	TGAGGTGT	ACACCTCA	CACGTTGT
UDI 008	AATGCCTC	GAGGCATT	TCACAGCA
UDI 009	CTGGAGTA	TACTCCAG	CTACTTGG
UDI 010	GTATGCTG	CAGCATAc	CCTCAGTT
UDI 011	TGGAGAGT	ACTCTCCA	TCCTACCT
UDI 012	CGATAGAG	CTCTATCG	ATGGCGAA
UDI 013	CTCATTGC	GCAATGAG	CTTACCTG
UDI 014	ACCAGCTT	AAGCTGGT	CTCGATAC
UDI 015	GAATCGTG	CACGATTC	TCCGTGAA
UDI 016	AGGCTTCT	AGAAGCCT	TAGAGCTC
UDI 017	CAGTTCTG	CAGAAGCT	TGACTGAC
UDI 018	TTGGTGAG	CTCACCAA	TAGACGTG
UDI 019	CATTCGGT	ACCGAATG	CCGGAATT
UDI 020	TGTGAAGC	GCTTCACA	CTCCTAGA
UDI 021	TAAGTGGC	GCCACTTA	CAACGGAT
UDI 022	ACGTGATG	CATCACGT	TGGCTATC
UDI 023	GTAGAGCA	TGCTCTAC	CGGTGATA
UDI 024	GTCAGTTG	CAACTGAC	TCCAATCG
UDI 025	ATTCGAGG	CCTCGAAT	GAGCTTGT
UDI 026	GATACTGG	CCAATATC	GAAGTTTC
UDI 027	GCCTTGTT	AACAAGGC	ATCTCGCT
UDI 028	TTGGTCTC	GAGACCAA	AGTTACGG
UDI 029	CCGACTAT	ATAGTCGG	GTGTCTGA
UDI 030	GTCCTAAG	CTTAGGAC	TGACTTGG
UDI 031	ACCAATGC	GCATTGGT	TGGATCAC
UDI 032	GATGCACT	AGTGCATC	ACACCAGT
UDI 033	GCTGGATT	AATCCAGC	CAGGTTAG
UDI 034	ATGGTTGC	GCAACCAT	AGTTGGCT
UDI 035	CAGAATCG	CGATTCTG	TCAACTGG
UDI 036	GAAGCTTT	AAGCGTTC	CTGCACTT
UDI 037	TCGAACCA	TGGTTCGA	ACACGGTT
UDI 038	CTATCGCA	TGCGATAG	AATACGGG
UDI 039	TACGGTTG	CAACCCTA	TGCGAACT
UDI 040	GAGATGTC	GACATCTC	GCTGACTA
UDI 041	CTTACAGC	GCTGTAAG	GTGGTGTT
UDI 042	AGGAGGAA	TTCTCTCT	GTGCTTAC
UDI 043	GACGAATG	CATTGCTC	TCAAGGAC
UDI 044	GAAGAGGT	ACCTCTCT	TGAACCTG
UDI 045	CGTCAATG	CATTGACG	AGTGTGGT
UDI 046	TACCAGGA	TCCTGGTA	GTACTCTC
UDI 047	CGTACGAA	TTCGTACG	CCGTATCT
UDI 048	GACTTAGG	CCTAAGTC	CGAAGAAC

	UDI 049	AGTGCACT	ACTGCACT	AGCGGAAT
	UDI 050	TTGATCCG	CGGATCAA	GTGAGCTT
	UDI 051	TGCCATTC	GAATGGCA	CGTGATCA
	UDI 052	CTTGCTGT	ACAGCAAG	TCGCATTG
	UDI 053	CCTACTGA	TCAGTAGG	TGACGCAT
	UDI 054	CCAAGTTG	CAACTTGG	CCGATGTA
	UDI 055	TGATCGGA	TCCGATCA	TTCGCAGT
	UDI 056	TAGTTGCG	CGCAACTA	ACGACAGA
	UDI 057	GTCTGATC	GATCAGAC	AGCTTGAG
	UDI 058	CGTTATGC	GCATAACG	GAGTGGTT
	UDI 059	GCTCTGTA	TACAGAGC	GCTGTAAG
	UDI 060	TTACCGAG	CTCGGTAA	CCAAGACT
N353	UDI 061	GCCATAAC	GTTATGGC	ATTGCGTG
	UDI 062	CTCAGAGT	ACTCTGAG	CTGAAGCT
	UDI 063	CGAGACTA	TAGTCTCG	TAACGAGG
	UDI 064	TGTGCGTT	AACGCACA	TCGTCTCA
	UDI 065	TTCAGGAG	CTCCTGAA	TTCCTGTG
	UDI 066	GACTATGC	GCATAGTC	CGTTGAGT
	UDI 067	AGGTTCGA	TCGAACCT	AGTCGCTT
	UDI 068	AGTCTGTG	CACAGACT	TAGGTAGG
	UDI 069	ACCTAAGG	CCTTAGGT	CAGGAGAT
	UDI 070	TGCAGGTA	TACCTGCA	CATCGTGA
	UDI 071	AAGGACAC	GTGTCCTT	TGTTGTGG
	UDI 072	CAACCTAG	CTAGGTTG	ACAGACCT
	UDI 073	CTGACACA	TGTGTCAG	GTCCTTCT
	UDI 074	ACTCGTTG	CAACGAGT	TGATACGC
	UDI 075	AGTCCTTA	TAGGAGCT	CTGTGTTG
	UDI 076	TACATCGG	CCGATGTA	AACGTGGA
	UDI 077	CACAAGTC	GACTTGTG	GTTGCGAT
	UDI 078	CGGATTGA	TCAATCCG	AACGACGT
	UDI 079	AGTCGACA	TGTCGACT	CGTATTCT
	UDI 080	GTCTCCTT	AAGGAGAC	AGCAAGCA
	UDI 081	GAGATACG	CGTATCTC	TGTTCCGAG
	UDI 082	ATCGGTGT	ACACCGAT	CTCCATGT
	UDI 083	TCTCGCAA	TTGCGAGA	CGTCTTGT
	UDI 084	TCTAACGC	GCGTTAGA	ATAAGGCG
N354	UDI 085	CAATCGAC	GTGATTG	TGTCGTCT
	UDI 086	GAGGACTT	AAGTCCTC	CGCTTAAC
	UDI 087	TGGAGTTG	CAACTCCA	GATCCATG
	UDI 088	CTAGGCAT	ATGCCTAG	ACCTCTGT
	UDI 089	CTCTACTC	GAGTAGAG	GCCACTTA
	UDI 090	AGAAGCGT	ACGTTTCT	ACCTGACT
	UDI 091	TCGAAGGT	ACCTTCGA	GTTAAGGC
	UDI 092	GTCGGTAA	TTACCGAC	ATGCCAAC
	UDI 093	ACGATGAC	GTATCCTG	AGAGGTTG
	UDI 094	TCCGTATG	CATACGGA	ACCATCCA
	UDI 095	CTAGGTGA	TCACCTAG	GTGGATAG
	UDI 096	CATTGCCT	AGGCAATG	CTGAGATC

07/Appendix

The recommended dilution factor and volume

Input DNA	Dual UMI Adapters Pre-dilution Factor	Volume
≥50 ng	Undiluted	5 μl
20 - 50 ng	1 : 1	5 μl
5 - 20 ng	1 : 5	5 μl
≤5 ng	1 : 10	5 μl