

Multiplexing UDI Primers & Adaptors (illumina platform)

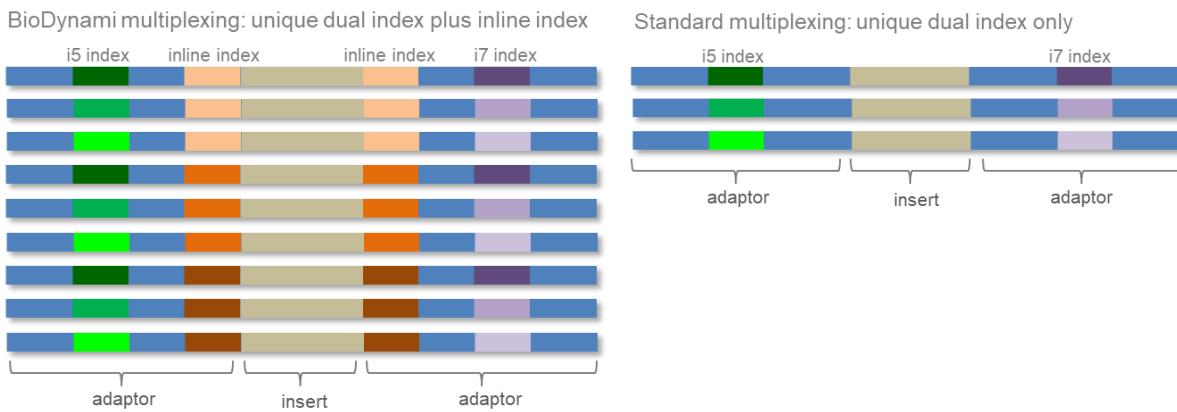
Catalog No.	30078S	30078M	30078L
Index type	96 unique dual indexes	96 unique dual indexes	96 unique dual indexes
Inline adaptor	4 adaptors	8 adaptors	16 adaptors
Multiplexing	384 samples	768 samples	1536 samples

Description

The **Multiplexing UDI Primers & Adaptors (illumina platform)** is developed for multiplexing 384-1536 NGS libraries. The kit contains two types of indexes: unique dual index (UDI; i5 index and i7 index) and inline index.

We have developed a **4-Base Difference Index System** for our unique dual index. The system allows us to make indexes that have at least 4 bases different from each other in the 8-base index length. Our unique dual indexing primers remove sequencing errors such as index hopping, index cross-contamination, mis-assignment of reads, amplification errors, and de-multiplexing errors. The primer set includes 96 pre-mixed unique pairs of i5 and i7 index primers.

The integration of inline index allows more samples to be multiplexed. The size of the inline index is 7-8 nt. The combination of unique dual index with inline index makes it possible to multiplex 384 to 1536 samples.



Features

- Combination of unique dual index with inline index
- Multiplexing from 384 samples to 1536 samples
- Unique dual index: Improves specificity with **4-Base Difference Index System**
 - Each index has at least 4 bases different from other indexes
 - 4-base difference greatly increases specificity
- Minimizes sequencing errors such as:
 - Index hopping
 - Index cross-contamination
 - Mis-assignment of reads
 - Amplification errors
 - De-multiplexing errors

Component

Catalog No.	30078S	30078M	30078L
UDI Primers*	20 ul X96	40 ul X96	80 ul X96
Inline adaptors**	288 ul X4	288 ul X8	288 ul X16

*The UDI primer concentration is 4 uM in 96-well plates. 5 ul is recommended for PCR.

** The concentration is 15 uM, and 3 ul is recommended for ligation.

Storage Condition

- Store kit at -20°C, stable up to 12 months. Avoid many freeze-and-thaw cycles.

Library and Index Information

The 96 unique dual index primers have been aliquoted in the 96-well plate as shown below.

List of indexes can be downloaded from

<https://www.biodynami.com/documents/BioDynami-Unique-Dual-Index.xls>

1	2	3	4	5	6	7	8	9	10	11	12
A	1	2	3	4	5	6	7	8	9	10	11
B	13	14	15	16	17	18	19	20	21	22	23
C	25	26	27	28	29	30	31	32	33	34	35
D	37	38	39	40	41	42	43	44	45	46	47
E	49	50	51	52	53	54	55	56	57	58	59
F	61	62	63	64	65	66	67	68	69	70	71
G	73	74	75	76	77	78	79	80	81	82	83
H	85	86	87	88	89	90	91	92	93	94	95
											96

The inline indexes:

index #	Sequence	index #	sequence
#1	AGCTAGT	#9	AGACCTT
#2	TGAAGCAT	#10	TACTCCAT
#3	CATGCTT	#11	CCGTATT
#4	GAGCTACT	#12	GCCCTACT
#5	ATCCGAT	#13	AGGTCAT
#6	GACTCGAT	#14	GACTGAAT
#7	CGGGTAT	#15	CTGCATT
#8	TCGAAGCT	#16	TTACGGCT

Sequence of the final library with index** locations:

5' **i5 index** **NNNNN** **AGATCGGAAGAGCACACGTCTGAACTCCAGTCACNNNNN** **ACACTTTCCCTACACGACGCTTCCGATCT** **NNNNN** **insert**
 3' **NNNNN** **TTACTATGCCGCTGGTGGCTAGATGTG** **NNNNN** **TGTGAGAAAGGGATGTGCTGCGAGAAGGCTAGA** **NNNNN** **insert**

inline index **NNNNN** **AGATCGGAAGAGCACACGTCTGAACTCCAGTCACNNNNN** **ATCTCGTATGCCGTCTGCTTG** 3'
insert **NNNNN** **TCTAGCCTCTCGTGTGCAGACTTGAGGTCAGTG** **NNNNN** **TAGAGCATAACGGCAGAACGAAAC** 5'

Note: i5 index: **NNNNN** (in yellow) is the index sequence, 5' to 3' direction.

i7 index: **NNNNN** (in red) is the index sequence, 5' to 3' direction.

inline index: **NNNNN** (in black)

****** Registration failure should be avoided when using low level multiplexing. This is caused by a lack of index sequence diversity between the red and green lasers (illumina uses red lasers for **A/C** bases and green lasers for **G/T** bases). For each cycle, both the red and the green laser need to be read (i.e. **A** or **C** must be in each cycle, and **G** or **T** must be in each cycle). Below are examples of good or bad combinations.

Quality Control

Kit components passed stringent functional quality test.

Product Use Limitation

This product is developed and sold for research purposes and *in vitro* use only. Please refer to BioDynami.com for Material Safety Data Sheet of the product.

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