

## Multiplexing UDI Primers & Adaptors (illumina platform)

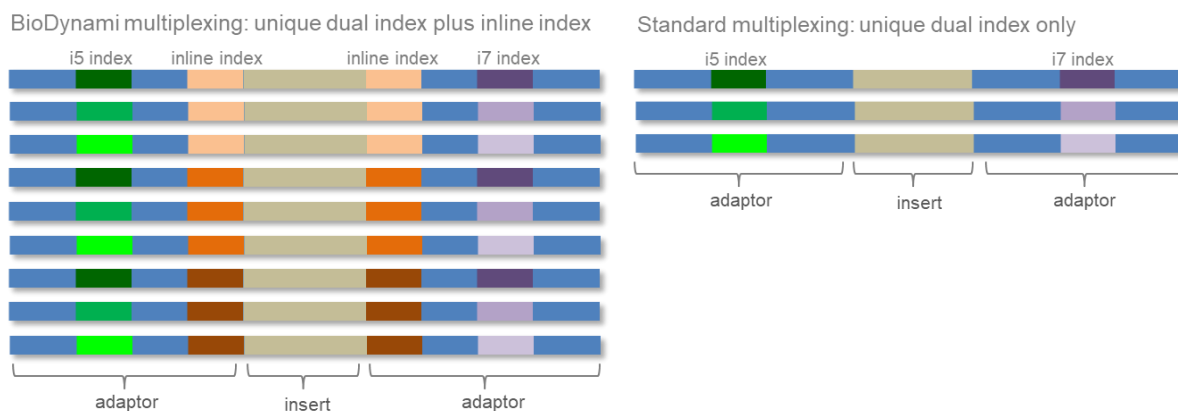
Catalog No.	30078S	30078M	30078L
Index type	96 unique dual indexes	96 unique dual indexes	96 unique dual indexes
Inline adaptor	4 adaptors	8 adaptors	16 adaptors
Multiplexing	384 samples	768 samples	1536 samples

### 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.

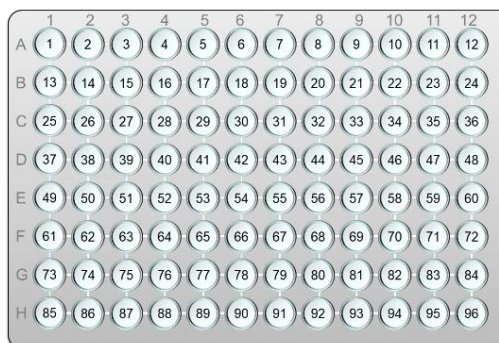
## Storage Condition

- 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>



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' AATGATACGGCGACCACCGAGATCTACACNNNNNACACTCTTTCCCTACACGACGCTCTTCCGATCT-NNNNN-insert-  
 3' TTACTATGCGCTGGTGGCTCTAGATGTGNNNNNTGTGAGAAAGGGATGTGCTGCGAGAAGGCTAGA-NNNNN-insert-

inline index

5' AATGATACGGCGACCACCGAGATCTACACNNNNNACACTCTTTCCCTACACGACGCTCTTCCGATCT-NNNNN-insert-  
 3' TTACTATGCGCTGGTGGCTCTAGATGTGNNNNNTGTGAGAAAGGGATGTGCTGCGAGAAGGCTAGA-NNNNN-insert-

inline index

-insert-NNNNN-AGATCGGAAGAGCACACGTCTGAACTCCAGTCACNNNNNATCTCGTATGCGCTCTTCTGCTTG 3'  
 -insert-NNNNN-TCTAGCCTTCTCGTGTGCAGACTTGAAGTCAGTGNNNNNNTAGAGCATAACGGCAGAAGACGAAC 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

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