

xGen™ UDI-UMI ADAPTERS

Overview

xGen™ UDI-UMI Adapters are full-length adapters for ligating unique dual index (UDI) and unique molecular identifiers (UMI) to library molecules for Illumina® sequencing. A UDI is an 8-nucleotide sequence that is specific to a given sample library. UDI-UMI Adapters include the molecular index/barcode which is a 9-nucleotide sequence that uniquely tags each molecule within a sample library. These sample indexes are used for demultiplexing during data analysis when matching individual sequence reads to the correct sample. Before using UDI-UMI Adapters, refer to the appropriate library prep kit protocol for further information.

Product details

The xGen UDI-UMI Adapters are available at 15 µM concentration, in a single-use (96-well) plate with a pierceable seal. Each well contains one specific index pair for indexing one sample.

- xGen UDI-UMI Adapters, 16 rxn
- xGen UDI-UMI Adapters, 96 rxn

Low level multiplexing

It is not recommended to mix indexes between products unless you first verify color-balancing of the barcodes, and sufficient edit distance. For specific questions about multiplexing, reach out to our Scientific Applications Support team at applicationsupport@idtdna.com.

Handling and storage

- Store the xGen UDI-UMI Adapters at –20°C
- Thaw adapters on ice before use and keep on ice during use
- Do not heat adapters above room temperature (15–25°C)
- If any material remains unused, carefully re-seal the plate with a new adhesive seal to prevent cross-contamination

! **Important:** Never attempt to heat seal the plate again.

Directions for use

1. Before starting, thaw the xGen UDI-UMI Adapters on ice.
 - !** **Important:** Keep the xGen UDI-UMI Adapters on ice during use.
2. After thawing, briefly vortex the plate to mix, then centrifuge to collect the liquid in the bottom of the well before breaking the seal.
3. Before plating the adapters into the ligation reaction, pre-pierce the seal of the plate with a pipette tip, then directly pipette the required volume of primers.
 - !** **Important:** Always use a separate pipette tip for each well to avoid cross-contamination of indexes.
4. Prepare the Ligation Master Mix as instructed in the library prep protocol and adding the exact quantity of adapted specified in the protocol.
 - ☰** **Note:** The optimal amount of adapter is dependent on the protocol and input DNA quantity going into library prep.
 - ➔** **Tip:** If you need to dilute the adapter, always use the NGS Adapter Buffer (10 mM Tris, 0.1 mM EDTA and 100 mM NaCl, pH 8.0).
5. Return any unused portion of the plate to storage at –20°C.

Sequencing and analysis

- To fill out the index sequences in the sample sheet, utilize the **IDT Master Index List**.
- The UMI (**Figure 1**) is in-line with the i7 index. To sequence the UMI, increase the number of cycles by 9 for the i7 read.



Figure 1. xGen UDI-UMI Adapter.

- ☰** **Note:** See the Analysis Guidelines for details on use of the UMI for error correction.
- ➔** **Tip:** Strand-specific libraries constructed using the xGen UDI-UMI Adapters have the insert strandedness flipped (i.e., to the opposite strand) when compared to standard TruSeq™ adapters (Illumina). This strand flip must be accounted for in data analysis for strand-specific applications (e.g., stranded RNA-seq, bisulfite sequencing).

Plate layouts

10006914–xGen™ UDI-UMI Adapters, 16 rxn

	1	2	3	4	5	6	7	8	9	10	11	12
A	1	9	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty
B	2	10	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty
C	3	11	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty
D	4	12	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty
E	5	13	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty
F	6	14	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty
G	7	15	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty
H	8	16	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty

10005903–xGen™ UDI-UMI Adapters, 96 rxn

	1	2	3	4	5	6	7	8	9	10	11	12
A	1	9	17	25	33	41	49	57	65	73	81	89
B	2	10	18	26	34	42	50	58	66	74	82	90
C	3	11	19	27	35	43	51	59	67	75	83	91
D	4	12	20	28	36	44	52	60	68	76	84	92
E	5	13	21	29	37	45	53	61	69	77	85	93
F	6	14	22	30	38	46	54	62	70	78	86	94
G	7	15	23	31	39	47	55	63	71	79	87	95
H	8	16	24	32	40	48	56	64	72	80	88	96

Technical support: applicationsupport@idtdna.com

For research use only. Not for use in diagnostic procedures. Unless otherwise agreed to in writing, IDT does not intend these products to be used in clinical applications and does not warrant their fitness or suitability for any clinical diagnostic use. Purchaser is solely responsible for all decisions regarding the use of these products and any associated regulatory or legal obligations.

© 2022 Integrated DNA Technologies, Inc. All rights reserved. Unless otherwise agreed to in writing, IDT does not intend these products to be used in clinical applications and does not warrant their fitness or suitability for any clinical diagnostic use. Purchaser is solely responsible for all decisions regarding the use of these products and any associated regulatory or legal obligations. TruSeq is a registered trademark of Illumina, Inc., used with permission. For specific trademark and licensing information, see www.idtdna.com/trademarks.

Doc ID: RUO22-0700_001 04/22