

## **XCeloSeq® UDI Sets 2-01 to 2-12 for Illumina®**

**IDX2-01 to IDX2-12**

**For use with XCeloSeq Total cfDNA library preparation kits.**

### **Product Description**

The XCeloSeq Unique Dual Indexing (UDI) Sets allow for library preparation of multiple samples each with a combination of unique i5 and i7 indexes. This allows for sample multiplexing of up to 96 samples per run when using Illumina next-generation sequencing platforms.

All index oligos undergo rigorous quality control procedures including generation and sequencing of indexed libraries to ensure high quality performance with all compatible XCeloSeq Library Preparation Kits.

<b>Product Name</b>	<b>Product Code</b>
XCeloSeq UDI Set 2-01 for Illumina	IDX2-01
XCeloSeq UDI Set 2-02 for Illumina	IDX2-02
XCeloSeq UDI Set 2-03 for Illumina	IDX2-03
XCeloSeq UDI Set 2-04 for Illumina	IDX2-04
XCeloSeq UDI Set 2-05 for Illumina	IDX2-05
XCeloSeq UDI Set 2-06 for Illumina	IDX2-06
XCeloSeq UDI Set 2-07 for Illumina	IDX2-07
XCeloSeq UDI Set 2-08 for Illumina	IDX2-08
XCeloSeq UDI Set 2-09 for Illumina	IDX2-09
XCeloSeq UDI Set 2-10 for Illumina	IDX2-10
XCeloSeq UDI Set 2-11 for Illumina	IDX2-11
XCeloSeq UDI Set 2-12 for Illumina	IDX2-12

### **Compatibility with XCeloSeq Total cfDNA library preparation kits**

This document contains information specific to use of these UDI sets with XCeloSeq Total cfDNA library preparation kits, which include:

<b>Product Name</b>	<b>Product Code</b>
XCeloSeq cfDNA Library Preparation Kit	SEQ001
XCeloSeq Methyl-cfDNA Library Preparation Kit	SEQ004

The details in this document are only applicable when using XCeloSeq Total cfDNA library preparation kits. For multiplexing support with other XCeloSeq products, please consult the relevant instructions for use document for your product, available at [www.genefirst.com/documents](http://www.genefirst.com/documents).

## Multiplexing and Sample Requirements

When purchasing UDI Sets for use in combination with any of the XCeloSeq Total cfDNA library preparation Kits, please refer to the tables below to determine how many UDI Sets are required for different levels of multiplexing and for different total numbers of samples. Up to 96 samples can be multiplexed together when purchasing all 12 Sets. Each UDI combination contains enough for 8 samples, for a total of 64 samples for every UDI Set.

When determining how many UDI Sets are required to allow for different levels of sample multiplexing, please refer to the table below.

Number of Samples to be Multiplexed in a Single Sequencing Run	Unique UDI Sets Required	Suggested Combinations of UDI Sets
1 to 8	1	2-01 only
9 to 16	2	2-01 and 2-02
17 to 24	3	2-01 to 2-03
25 to 32	4	2-01 to 2-04
33 to 40	5	2-01 to 2-05
41 to 48	6	2-01 to 2-06
49 to 56	7	2-01 to 2-07
57 to 64	8	2-01 to 2-08
65 to 72	9	2-01 to 2-09
73 to 80	10	2-01 to 2-10
81 to 88	11	2-01 to 2-11
89 to 96	12	2-01 to 2-12

When determining UDI Set requirements for processing a fixed number of samples, please refer to the table below as an example. (Note: Please do still consider multiplexing requirements using the previous table).

Total Number of Samples to Be Processed	Total Number of UDI Kits Required
1 to 64	1
65 to 128	2
129 to 192	3
193 to 256	4
257 to 320	5
321 to 384	6
385 to 448	7
449 to 512	8
513 to 576	9
577 to 640	10
641 to 704	11
705 to 768	12

## Index Sequences

Please visit [www.genefirst.com/documents](http://www.genefirst.com/documents) for pre-populated sample sheets which can be used as a template for preparing samples for sequencing.

Illumina instruments read indexes in either a “forward” or “reverse complement” orientation.

**Forward orientation** index instruments include:

- HiSeq 2000/2500 (pair-end flow cell)
- HiSeq 3000/4000 (single-read flow cell)
- MiniSeq with rapid reagent kits
- MiSeq
- NovaSeq 6000 with v1.0 reagents kits.

**Reverse complement orientation** index instruments include:

- iSeq 100
- MiniSeq with standard reagent kits
- NextSeq Systems
- NovaSeq 6000 with v1.5 reagent kits
- HiSeq 2000/5000 (single-read flow cell)
- HiSeq 3000/4000 (paired-end flow cell)

Please see Illumina Document “Indexed Sequencing Overview Guide” (#15057455), and “Guidelines for reverse complementing i5 sequences for demultiplexing” ([Illumina Knowledge Article #1800](#)) for additional help.

The table below provides more details on all unique dual index sequence combinations.

	UDI Pair Name	Expected i7 Index Sequence	Expected i5 Index Sequence	
			Forward Orientation	Reverse Complement Orientation
UDI Set 2-01	2-01-001	TTACCGAC	GTCTACAG	CTGTAGAC
	2-01-002	AGTGACCT	TGCTACGA	TCGTAGCA
	2-01-003	TCGGATTC	GTCGTTGT	ACAACGAC
	2-01-004	CAAGGTAC	ATCCAAGC	GCTTGGAT
	2-01-005	TCCTCATG	CGCATTCA	TGAATGCG
IDX2-01	2-01-006	GTCAGTCA	ATGACACG	CGTGTCAT
	2-01-007	CGAATACG	AACTACGG	CCGTAGTT
	2-01-008	TCTAGGAG	GAGGCTTA	TAAGCCTC
UDI Set 2-02	2-02-009	CGCAACTA	GACTTCGT	ACGAAGTC
	2-02-010	CGTATCTC	AGACTCAC	GTGAGTCT
	2-02-011	GTACACCT	TCTGCTTC	GAAGCAGA
	2-02-012	CGGCATTA	GAGGACTT	AAGTCCTC
	2-02-013	TCGTCTGA	TCCTCGAT	ATCGAGGA
IDX2-02	2-02-014	AAGACACC	AAGCAGGA	TCCTGCTT
	2-02-015	CCAGTTGA	TTCTAGGC	GCCTAGAA
	2-02-016	AGACCTTG	GCGTAACT	AGTTACGC

	UDI Pair Name	Expected i7 Index Sequence	Expected i5 Index Sequence	
			Forward Orientation	Reverse Complement Orientation
UDI Set 2-03	2-03-017	AGGATAGC	GTGATCCA	TGGATCAC
	2-03-018	CCTTCCAT	GTGCAGTT	AACTGCAC
	2-03-019	GTCCTTGA	GACCGTAA	TTACGGTC
	2-03-020	TGCGTAAC	TGATCGTC	GACGATCA
	2-03-021	CACAGACT	GTTCAAGG	CCTTGAAC
IDX2-03	2-03-022	TTACGTGC	CCATTCGT	ACGAATGG
	2-03-023	CCAAGGTT	AGTATGCC	GGCATACT
	2-03-024	CACGCAAT	AGAGCACT	AGTGCTCT
UDI Set 2-04	2-04-025	TTCCAGGT	TGTGCATG	CATGCACA
	2-04-026	TCATCTCC	ATAGACGG	CCGTCTAT
	2-04-027	GAGAGTAC	CATTCCAC	GTGGAATG
	2-04-028	GTCGTTAC	TCCATGTC	GACATGGA
	2-04-029	GGAGGAAT	CATGTGAC	GTCACATG
IDX2-04	2-04-030	AGGAACAC	AGGAGATC	GATCTCCT
	2-04-031	CAGTGCTT	GTCAGTTG	CAACTGAC
	2-04-032	CTTGCTAG	CCAACGAA	TTCGTTGG
UDI Set 2-05	2-05-033	TGGAAGCA	CTCATTGG	CCAATGAG
	2-05-034	AGCTAAGC	CCTCAGAA	TTCTGAGG
	2-05-035	GAACGGTT	GGATTGAG	CTCAATCC
	2-05-036	AGCCTATC	CACCTTGT	ACAAGGTG
	2-05-037	TACGGTCT	TATGACGG	CCGTCATA
IDX2-05	2-05-038	CCAGTATC	CTACCGTT	AACGGTAG
	2-05-039	TCTACGCA	GGTTACAC	GTGTAACC
	2-05-040	GTAACCGA	CTGTCCAT	ATGGACAG
UDI Set 2-06	2-06-041	GACGTCAT	AGGCACTT	AAGTGCCT
	2-06-042	CTTACAGC	CGTCATAC	GTATGACG
	2-06-043	TCCATTGC	GTCGATCA	TGATCGAC
	2-06-044	AGCGAGAT	GTACGTCA	TGACGTAC
	2-06-045	CAATAGCC	CGACGATT	AATCGTCC
IDX2-06	2-06-046	GGAATGTC	ACATCCTC	GAGGATGT
	2-06-047	CTGTACCA	CTGTAGCT	AGCTACAG
	2-06-048	TGGTGAAG	TATAGCCT	AGGCTATA
UDI Set 2-07	2-07-049	AAGACCGT	ATCACTAT	ATAGTGAT
	2-07-050	CAGGTTCA	GCTTGCGC	GCGCAAGC
	2-07-051	GCAATTCC	AGTATCTT	AAGATACT
	2-07-052	GAATCCGT	GACGCTCC	GGAGCGTC
	2-07-053	GGTTGAAC	ACTGCCAT	ATGGCAGT
IDX2-07	2-07-054	TACCTGCA	TGCATTGC	GCAATGCA
	2-07-055	GTCGATTG	ATTGGAAC	GTTCCAAT
	2-07-056	TATGGCAC	GCACAGGT	ACCTGTGC

	UDI Pair Name	Expected i7 Index Sequence	Expected i5 Index Sequence	
			Forward Orientation	Reverse Complement Orientation
UDI Set 2-08	2-08-057	CTCGAACA	CGAGATAT	ATATCTCG
	2-08-058	CAACTCCA	TAGAGCGC	GCGCTCTA
	2-08-059	GTCATCGT	AACCTGTT	AACAGGTT
	2-08-060	GGACATCA	GGTTCACC	GGTGAACC
	2-08-061	TTGCGAGA	CATTGTTG	CAACAATG
IDX2-08	2-08-062	GAACGAAG	TTCACCA	TGGTGGAA
	2-08-063	CTCAGAAG	CGCTGCAT	ATGCAGCG
	2-08-064	CATGAGCA	TCTCATGA	TCATGAGA
UDI Set 2-09	2-09-065	GACGAACT	ACGCCGCA	TGCGGCGT
	2-09-066	AGACGCTA	GTATTATG	CATAATAC
	2-09-067	ATAACGCC	GATAGATC	GATCTATC
	2-09-068	GAATCACC	AGCGAGCT	AGCTCGCT
	2-09-069	GGCAAGTT	CAGTGACT	AGTCACTG
IDX2-09	2-09-070	GATCTTGC	TGACCTTA	TAAGGTCA
	2-09-071	CAATGCGA	CTAGGCAA	TTGCCTAG
	2-09-072	GGTGTACA	TCGAATGG	CCATTCTGA
UDI Set 2-10	2-10-073	TAGGAGCT	CTTAGTGT	ACACTAAG
	2-10-074	CGAATTGC	TCCGACAC	GTGTCGGA
	2-10-075	GTCCTAAG	ATATTACC	GGTAATAT
	2-10-076	CTTAGGAC	GCGCCTGT	ACAGGCGC
	2-10-077	TCCACGTT	ACTCTATG	CATAGAGT
IDX2-10	2-10-078	CAACACAG	GTCTCGCA	TGCGAGAC
	2-10-079	GCCTTAAC	AAGACGTC	GACGTCTT
	2-10-080	GTAAGGTG	GTCGTAAG	CTTACGAC
UDI Set 2-11	2-11-081	AGCTACCA	ACCGGACA	TGTCCGGT
	2-11-082	CTTCACTG	GTTAAGGT	ACCTTAAC
	2-11-083	CCGCTTAA	AACCGATG	CATCGGTT
	2-11-084	GATAGGCA	GTGTATAA	TTATACAC
	2-11-085	TACTCCAG	CCAAGTCC	GGACTTGG
IDX2-11	2-11-086	GGAAGAGA	TTGGAAGT	ACTTCCAA
	2-11-087	GCGTTAGA	CATGGTAT	ATACCATG
	2-11-088	ATCTGACC	TGACAAGC	GCTTGTC A
UDI Set 2-12	2-12-089	AACCAGAG	CTAGCTTG	CAAGCTAG
	2-12-090	GTACCACA	TCGATCAC	GTGATCGA
	2-12-091	GGTATAGG	CCTGAACT	AGTTCAGG
	2-12-092	CGAGAGAA	GGCCTTGA	TCAAGGCC
	2-12-093	CAGCATAC	AGTAGAGA	TCTCTACT
IDX2-12	2-12-094	CTCGACTT	GACGAGAG	CTCTCGTC
	2-12-095	CTTCGGTT	AGACTTGG	CCAAGTCT
	2-12-096	CCACAACA	GAGTCCAA	TTGGACTC

## Additional Information

When using XCellSeq UDI Sets 2-01 to 2-12 for Illumina, please refer to the relevant instructions for use (IFU) document your XCellSeq Total cfDNA library preparation kit.

For support with greater levels of multiplexing or for any other enquiries, please contact us at [sales@genefirst.com](mailto:sales@genefirst.com)

## Limitations of Use

### For Research Use Only (RUO).

This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals. SDS sheets relevant to this product are available upon request.

## Customer Contact Information

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