Product Insert

XCeloSeq® Fusion Research Kit

SEQ007

Product Description

The XCeloSeq Fusion Research Kit contains a pool of targeted RNA enrichment primers located in conserved fusion partners for identification of both known and unknown fusions from RNA. These primers are designed for use only with XCeloSeq Targeted RNA Core Reagents (GF031). Together they allow for the generation of high quality, high-complexity next-generation sequencing libraries that are suitable for use with Illumina® next-generation sequencing instruments.

Kit Contents

Component	Tube Colour	Cap Colour	Storage	Part Code
Fusion Research Kit – OUTER Pool	Transparent	**Orange**	-20°C	PC0049
Fusion Research Kit – INNER Pool	Transparent	**Black**	-20°C	PC0050

Kit Specifications and Recommendations

Gene Targets	74
Targeting Primers[%]	458
Recommended Input Quantity[*]	5-200 ng FFPE-derived total RNA
	5-100 ng high quality total RNA
Recommended Reads Per Sample[#]	3,500,000 (Dual index, 150 bp paired-end)
Hands on Time	2.0 hours
Total Protocol Time	7.25 hours

[%]An additional 8 QC primers are included

[*]Higher quantities within this range will improve maximum sensitivity. The product supports capture with down to 1.0 ng of RNA, however this is not recommended as it will lead to reduced sensitivity. Cell-free RNA and total cell-free nucleic acids may be used as alternative starting materials, however fusion detection sensitivity will be lower due to cell-free RNA concentrations typically being very low. When using this material maximising starting input quantity will help ensure the best possible results.

[#]When using cfRNA up to 10 times as much sequencing may be needed to ensure that enough RNA-derived reads are in the final sequencing data. Users are recommended to assess this on the sample-by-sample basis.

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Assay Targets

Gene	Accession	Exon(s)	Fusion Direction
ABL1	NM_005157.4	1, 2, 3, 4	5’
ABL2	NM_007314.4	4, 5, 6	5’
AKT1	NM_005163.2	2, 3, 5	5’
AKT2	NM_001626.6	5	5’
AKT3	NM_005465.7	1, 2, 3	5’
ALK	NM_004304.5	2, 4, 6, 10, 16 17, 18, 19 (and intron 19), 20, 21, 22, 23, 26	5’
ARHGAP26	NM_015071.6	2, 10, 11, 12	5’
AXL	NM_021913.5	19, 20	3’
BRAF	NM_004333.6	2, 7, 8, 9, 10, 11, 12, 15, 16	5’
		1, 3, 7, 8, 10, 13	3’
BRD3	NM_007371.4	9, 10, 11, 12	3’
BRD4	NM_058243.2	10, 11	3’
CRLF2	NM_022148.4	1	5’
CSF1R	NM_005211.3	11, 12, 13	5’
EGFR	NM_005228.5	7, 8 (Exon 2-7 Skipping), 9, 16, 19, 20	5’
		1 (Exon 2-7 Skipping), 24, 25	3’
EPOR	NM_000121.4	1, 2	5’
		7, 8	5’ (truncation)
ERBB2	NM_001005862.2	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18	5’
ERBB4	NM_005235.3	2, 3, 4	3’
ERG	NM_004449.4	2, 3, 4, 5, 6, 7, 8, 9, 10, 11	5’
ESR1	NM_001122742.1	1, 2, 3, 4, 5, 6	3’
ESRRA	NM_004451.5	2, 3	3’
ETV1	NM_004956.5	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13	5’
ETV4	NM_001986.4	2, 4, 5, 6, 7, 8, 9, 10	5’
ETV5	NM_004454.3	2, 3, 7, 8, 9	5’
ETV6	NM_001987.5	2, 3, 4, 5, 6, 7	5’
		1, 2, 3, 4, 5, 6	3’
EWSR1	NM_005243.4	4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14	3’
FGFR1	NM_015850.4	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 17	5’
		12, 17	3’
FGFR2	NM_000141.4	2, 5, 7, 8, 9, 10	5’
		16, 17	3’
FGFR3	NM_000142.4	3, 5, 8, 9, 10	5’
		16, 17 (and intron 17)	3’
FGR	NM_005248.3	2	5’

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Gene	Accession	Exon(s)	Fusion Direction
IL2RB	NM_000878.5	2	5’
INSR	NM_000208.4	12, 13, 14, 15, 16, 17, 18, 19	5’
		20, 21, 22	3’
JAK1	NM_002227.4	9, 11, 16, 17, 19	5’
		9, 11, 16, 17, 19	3’
JAK2	NM_004972.3	6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20	5’
		9, 10, 11, 12	3’
JAK3	NM_000215.3	9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19	5’
KIT	NM_000222.2	11	5’
MAML2	NM_032427.4	2, 3	5’
MAST1	NM_014975.3	7, 8, 9, 18, 19, 20, 21	5’
MAST2	NM_015112.3	2, 3, 5, 6	5’
MET	NM_000245.4	2, 4, 5, 6, 13, 14, 15 (exon 14 skipping event), 16, 17, 21	5’
		2, 13 (exon 14 skipping event)	3’
MSMB	NM_002443.4	2, 3, 4	3’
MUSK	NM_005592.4	7, 8, 9, 11, 12, 13, 14	5’
MYB	NM_001130173.2	7, 8, 9, 11, 12, 13, 14, 15, 16	3’
MYC	NM_002467.6	1, 2, 3	5’
		1, 2, 3	3’
NOTCH1	NM_017617.4	26, 27, 29	5’
		2, 4, 29, 30, 31	3’
NOTCH2	NM_024408.4	26, 27, 28	5’
		5, 6, 7	3’
NRG1	NM_004495.4	1, 2, 3, 4, 6	5’
	NM_013957.5	1, 8	5’
	NM_013962.2	1	3’
NTRK1	NM_002529.3	2, 4, 6, 8, 10, 11, 12, 13	5’
NTRK2	NM_006180.4	5, 7, 9, 11, 12, 13, 14, 15, 16, 17	5’
NTRK3	NM_002530.4	4, 7, 10, 12, 13, 14, 15, 16	5’
		13, 14, 15	3’
	NM_001007156.2	15	5’
NUMBL	NM_004756.5	3	5’
NUTM1	NM_175741.2	3	5’
PDGFRA	NM_006206.6	10, 11, 12, 13, 14	5’
		7 (exon 8 deletion)	3’
PDGFRB	NM_002609.4	8, 9, 10, 11, 12, 13, 14	5’
PIK3CA	NM_006218.4	2	5’
PKN1	NM_002741.5	10, 11, 12, 13	5’
PPARG	NM_015869.4	1, 2, 3, 4	5’
PRKCA	NM_002737.3	4, 5, 6	5’

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PRKCB	NM_002738.7	3	5’
PTK2B	NM_173174.3	6, 7, 8	5’
RAF1	NM_002880.3	4, 5, 6, 7, 9, 10, 11, 12	5’
		4, 5, 6, 7, 9	3’
RARA	NM_000964.4	2, 3, 4	5’
		3	3’
RELA	NM_021975.4	3, 4	5’
RET	NM_020975.6	2, 4, 6, 8, 9, 10, 11, 12, 13, 14	5’
ROS1	NM_002944.2	2, 4, 7, 31, 32, 33, 34, 35, 36, 37	5’
RSPO2	NM_178565.5	1, 2	5’
RSPO3	NM_032784.5	2	5’
SYK	NM_003177.7	5	5’
TERT	NM_198253.3	2	5’
TFE3	NM_006521.6	2, 3, 4, 5, 6, 7, 8	5’
		2, 3, 4, 5, 6	3’
TFEB	NM_007162.2	1, 2	5’
THADA	NM_022065.4	24, 25, 26, 27, 28, 29, 30	3’
TMPRSS2	NM_005656.4	1	3’
	NM_001135099.1	1, 2, 3, 4, 5, 6	3’
TSLP	NM_033035.5	1	5’
TYK2	NM_003331.5	16, 18	5’

Additional Information

Please refer to “XCeloSeq Targeted RNA Enrichment Protocol with UDIs” for instructions for use.

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.

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