

FusionPlex Lung

Description

The FusionPlex Lung is a balanced pool of gene-specific primer (GSP) oligonucleotides that is optimized for use with FusionPlex reagents and molecular barcode (MBC) adapters to produce targeted NGS libraries. This product insert should be used in conjunction with FusionPlex protocol for Illumina® (RA-DOC-047) or FusionPlex protocol for Ion Torrent[™] (RA-DOC-048).

FusionPlex Lung contains **163** GSPs targeting **14** genes commonly mutated in lung cancer.

Description	Part number	Storage
FusionPlex Lung GSP1, 8 reactions	SA0166081	
FusionPlex Lung GSP2, 8 reactions	SA0166082	-20°C ± 10°C
10X VCP Primer Mix	SA0126	

Recommended PCR cycling

	Step	Temperature (°C)	Time	Cycles
First PCR reaction	1	95	3 min	1
	2	95	30 sec	15
	3	65	5 min (100% ramp rate)	
	4	72	3 min	1
	5	4	Hold	1

Recommended PCR cycling (cont.)

	Step	Temperature (°C)	Time	Cycles
Second PCR reaction	1	95	3 min	1
	2	95	30 sec	20†
	3	65	5 min (100% ramp rate)	
	4	72	3 min	1
	5	4	Hold	1

†The number of PCR2 cycles may be decreased if you regularly experience library yields greater than 200 nM.

Recommended reads and multiplexing

FusionPlex Lung libraries should be sequenced to a minimum of **0.5M reads**. Starting read depth recommendations for standard profiling may be adjusted based on user needs.

Archer™ Analysis settings

Sequencing data should be processed using Archer Analysis (v7.0, or greater). The FusionPlex Lung requires selection of the **RNA Fusion** pipeline, found under the **RNA** Input Type (see the Archer Analysis User Guide for more details on setting up your analysis).

Processing of FusionPlex Lung libraries requires a one-time upload of the Panel GTF. Files can be obtained by contacting archer-tech@idtdna.com

Assay targets

Gene	Accession	Exon	Variant Type	Description*
<i>ALK</i>	NM_004304	22, 23, 25	Mutation	T1151-C1156, F1174, L1196-S1206, G1269
<i>ALK</i>	NM_004304	2, 4, 6, 10, 16, 17, 18, 19, 20, 21, 22, 23, 26	Fusion	5'
<i>BRAF</i>	NM_004333	15	Mutation	V600
<i>BRAF</i>	NM_004333	2, 7, 8, 9, 10, 11, 12, 15, 16	Fusion	5'
<i>BRAF</i>	NM_004333	1, 3, 7, 8, 10, 13	Fusion	3'

Gene	Accession	Exon	Variant Type	Description*
<i>EGFR</i>	NM_005228	18, 19, 20, 21	Mutation	E709-G719, E746-L760, V774-G796, L858-L861
<i>EGFR</i>	NM_005228	7, 8, 9, 16, 19, 20,	Fusion	5'
<i>EGFR</i>	NM_005228	8	Exon 2-7 Skipping (EGFRvIII)	5'
<i>EGFR</i>	NM_005228	1, 24, 25	Fusion	3'
<i>EGFR</i>	NM_005228	1	Exon 2-7 Skipping (EGFRvIII)	3'
<i>FGFR1</i>	NM_015850	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 17	Fusion	5'
<i>FGFR1</i>	NM_015850	12, 17	Fusion	3'
<i>FGFR2</i>	NM_000141	2, 5, 7, 8, 9, 10	Fusion	5'
<i>FGFR2</i>	NM_000141	16, 17	Fusion	3'
<i>FGFR3</i>	NM_000142	3, 5, 8, 9, 10	Fusion	5'
<i>FGFR3</i>	NM_000142	16, 17, 18	Fusion	3'
<i>KRAS</i>	NM_004985	2, 3	Mutation	G12-G13, Q61
<i>MET</i>	NM_000245	2, 4, 5, 6, 13, 14, 15, 16, 17, 21	Fusion	5'
<i>MET</i>	NM_000245	15	Exon 14 Skipping	5'
<i>MET</i>	NM_000245	2, 13	Fusion	3'
<i>MET</i>	NM_000245	13	Exon 14 Skipping	3'
<i>NRG1</i>	NM_013957	1, 8	Fusion	5'
<i>NRG1</i>	NM_004495	1, 2, 3, 4, 6	Fusion	5'
<i>NRG1</i>	NM_013962	1	Fusion	3'

Gene	Accession	Exon	Variant Type	Description*
<i>NTRK1</i>	NM_002529	2, 4, 6, 8, 10, 11, 12, 13	Fusion	5'
<i>NTRK2</i>	NM_006180	5, 7, 9, 11, 12, 13, 14, 15, 16, 17	Fusion	5'
<i>NTRK3</i>	NM_002530	4, 7, 10, 12, 13, 14, 15, 16	Fusion	5'
<i>NTRK3</i>	NM_001007156	15	Fusion	5'
<i>NTRK3</i>	NM_002530	13, 14, 15	Fusion	3'
<i>RET</i>	NM_020630	15,16	Mutation	A883, M918
<i>RET</i>	NM_020630	2, 4, 6, 8, 9, 10, 11, 12, 13, 14	Fusion	5'
<i>ROS1</i>	NM_002944	38	Mutation	G2032
<i>ROS1</i>	NM_002944	2, 4, 7, 31, 32, 33, 34, 35, 36, 37	Fusion	5'

*The mutations listed under the Description column are targeted by the assay design. Version 6.2 and earlier of Archer Analysis may not support RNA SNV/indel variant calling at exon junctions depending on the sequence context (SNVs ≤5bp, indels ≤30bp). *De Novo* RNA SNV/indel and Internal Tandem Duplication mutation detection are not supported on the Ion Torrent Sequencing System.

Limitations of use

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Safety data sheets pertaining to this product are available upon request.

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