FusionPlex® Heme v2

Part # SK0086

Description

The FusionPlex® Heme v2 panel is an optimized, balanced pool of gene-specific primers (GSPs) that is used in conjunction with FusionPlex® Reagents and Molecular Barcode (MBC) Adapters to produce targeted NGS libraries.

FusionPlex® Heme v2 contains **607** GSPs targeting **87** genes commonly mutated in hematological malignancies.

Contents

Description	Part Number	Storage Conditions
Archer® FusionPlex® Heme v2 GSP1 - 8 reactions	SA0073-8-1	
Archer® FusionPlex® Heme v2 GSP2 - 8 reactions	SA0073-8-2	-20°C ± 10°C
10X VCP Primer Mix	SA0126	

Recommended Reads and Multiplexing

The recommended sequencing depth for FusionPlex® Heme v2 libraries is **1,500,000** reads per sample.

Assay Targets

Gene	Accession	Exon	Assay Type	Description
ABL1	NM_005157	N/A	Mutation	Y253-E255, V299, T315-F317, M351-F359
ABL1	NM_005157	1, 2, 3, 4, 5	Fusion	5'
ABL1	NM_005157	N/A	Expression Imbalance	N/A
ABL2	NM_005158	2, 3, 4, 5, 6, 7, 8	Fusion	5'
ALK	NM_004304	N/A	Mutation	T1151-C1156, F1174, L1196-S1206, G1269
ALK	NM_004304	2, 4, 6, 10,1 6, 17, 18, 19, 20, 21, 22, 23	Fusion	5'
BCL11B	NM_138576	3, 4	Fusion	5'
BCL11B	NM_138576	2, 3	Fusion	3'
BCL2	NM_000633	N/A	Mutation	F104
BCL2	NM_000633	N/A	Expression	N/A
BCL2	NM_000633	3	Fusion	3'
BCL2	NM_000633	2	Fusion	5'
BCL3	NM_005178	N/A	Expression	N/A
BCL6	NM_001706	2,3	Fusion	5'

BCL6	NM_001706	N/A	Expression	N/A
BCR	NM_004327	1, 2, 3, 8, 12, 13, 14, 15, 16	Fusion	3'
BIRC3	NM_001165	N/A	Mutation	Q547
BIRC3	NM_001165	4, 5, 6, 7	Fusion	3'
CBFB	NM_022845	4, 5	Fusion	3'
CCND1	NM_053056	N/A	Expression	N/A
CCND1	NM_053056	5	Fusion	3'
CCND1	NM_053056	N/A	Mutation	E36, V42-C47
CCND2	NM_001759	N/A	Expression	N/A
CCND3	NM_001760	2	Fusion	5'
CCND3	NM_001760	N/A	Expression	N/A
CD274	NM_014143	N/A	Expression	N/A
CDK6	NM_001259	1, 2, 3, 4	Fusion	3'
CDKN2A	NM_000077	N/A	Expression	N/A
CEBPA	NM_004364	N/A	Mutation	P23-H24, Q83, K304-L317
CEBPA	NM_004364	N/A	Expression	N/A
CEBPD	NM_005195	N/A	Expression	N/A
CEBPE	NM_001805	N/A	Expression	N/A
CEBPG	NM_001806	N/A	Expression	N/A
CHD1	NM_001270	1, 2	Fusion	5'
CHIC2	NM_012110	1, 2, 3	Fusion	3'
CIITA	NM_000246	1, 2	Fusion	3'
CREBBP	NM_004380	N/A	Mutation	P1053, C1240, R1446, S1680-L1681
CREBBP	NM_004380	2, 3, 4, 5, 6	Fusion	5'
CRLF2	NM_022148	N/A	Mutation	F232
CRLF2	NM_022148	1	Fusion	5'
CRLF2	NM_022148	N/A	Expression	N/A
CSF1R	NM_005211	9, 10, 11, 12, 13, 14	Fusion	5'
CTLA4	NM_005214	N/A	Expression	N/A
DEK	NM_003472	2, 3	Fusion	3'
DUSP22	NM_020185	1, 2	Fusion	3'
EBF1	NM_024007	10, 11, 12, 13, 14, 15	Fusion	3'
EIF4A1	NM_001416	2, 3	Fusion	5'
EPOR	NM_000121	7, 8	Fusion	3'
ERG	NM_004449	7, 8, 9, 10, 11	Fusion	5'
ETV6	NM_001987	N/A	Mutation	Y104-R105
ETV6	NM_001987	1, 2, 3, 4, 5, 6	Fusion	3'
ETV6	NM_001987	2, 3, 4, 5, 6	Fusion	5'
FGFR1	NM_023110	12, 17	Fusion	3'
FGFR1	NM_023110	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 17	Fusion	5'
FOXP1	NM_032682	N/A	Expression	N/A
GLIS2	NM_032575	2, 3	Fusion	5'
ID4	NM_001546	N/A	Expression	N/A

IKZF1	NM_006060	1, 2, 3	Exon Skipping	3'
IKZF1	NM_006060	7, 8	Exon Skipping	5'
IKZF2	NM_016260	3, 4	Fusion	3'
IKZF3	NM_012481	2, 3, 4, 5, 6, 7	Fusion	3'
IKZF3	NM_012481	N/A	Mutation	L162
IRF4	NM_002460	N/A	Expression	N/A
IRF8	NM_002163	N/A	Expression	N/A
JAK2	NM_004972	N/A	Mutation	F537-F547, V617-C618, L681-R683, L855, V863, A880, V911, M929-R938, I960, R980-E985, D994
JAK2	NM_004972	6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 19, 20	Fusion	5'
JAK2	NM_004972	9, 10, 11, 12	Fusion	3'
KAT6A	NM_006766	13, 14, 15, 16	Fusion	3'
KLF2	NM_016270	2, 3	Fusion	5'
KMT2A	NM_005933	2, 3	Fusion	5'
KMT2A	NM_005933	4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35	Fusion	3'
MALT1	NM_006785	9	Fusion	3'
MECOM	NM_004991	N/A	Expression	N/A
MECOM	NM_004991	1, 2, 3, 4	Fusion	5'
MKL1	NM_020831	4, 5, 6	Fusion	5'
MLF1	NM_022443	2, 3, 4	Fusion	5'
MLLT10	NM_004641	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18	Fusion	5'
MLLT10	NM_004641	7, 8, 9, 10	Fusion	3'
MLLT4	NM_001040000	2	Fusion	5'
MUC1	NM_002456	N/A	Expression	N/A
MYC	NM_002467	N/A	Expression	N/A
MYC	NM_002467	1, 2	Fusion	5'
MYH11	NM_002474	N/A	Expression Imbalance	N/A
MYH11	NM_002474	7, 8, 9, 10, 11, 14, 15, 16	Fusion	5'
NF1	NM_000267	14	Fusion	3'
NF1	NM_000267	36	Fusion	5'
NFKB2	NM_002502	14, 15, 16, 17, 18, 19, 20, 21	Fusion	3'

Gene	Transcript	Exons	Type	Region
NOTCH1	NM_017617	N/A	Mutation	L1574, V1578, L1585, F1592-L1593, R1598-L1600, L1678-I1680, P2514-E2515, P2525
NOTCH1	NM_017617	24, 25, 26, 27, 28, 29	Fusion	5'
NOTCH1	NM_017617	24	Fusion	3'
NOTCH1	NM_017617	34	Exon Skipping	N/A
NTRK3	NM_002530	N/A	Expression Imbalance	N/A
NTRK3	NM_002530	13, 14, 15	Fusion	5'
NTRK3	NM_001007156	15	Fusion	5'
NUP214	NM_005085	17, 18, 19	Fusion	5'
NUP98	NM_016320	8, 9, 10, 11, 12, 13, 14, 15, 16, 17	Fusion	3'
NUP98	NM_016320	12, 13	Fusion	5'
P2RY8	NM_178129	1	Fusion	3'
PAG1	NM_018440	2	Fusion	5'
PAX5	NM_016734	N/A	Mutation	P80
PAX5	NM_016734	1, 4, 5, 6, 7, 8	Fusion	3'
PAX5	NM_016734	6, 7, 8	Fusion	5'
PDCD1	NM_005018	N/A	Expression	N/A
PDCD1LG2	NM_025239	N/A	Expression	N/A
PDCD1LG2	NM_025239	1, 2, 3	Fusion	5'
PDCD1LG2	NM_025239	5, 6	Fusion	3'
PDGFRA	NM_006206	N/A	Mutation	T674
PDGFRA	NM_006206	9, 10, 11, 12, 13, 14	Fusion	5'
PDGFRB	NM_002609	8, 9, 10, 11, 12, 13, 14	Fusion	5'
PICALM	NM_007166	16, 17, 18, 19	Fusion	3'
PML	NM_002675	N/A	Mutation	C212-S220
PML	NM_002675	2	Fusion	5'
PML	NM_002675	2, 3, 4, 5, 6, 7	Fusion	3'
PRDM16	NM_022114	1, 2, 3, 4	Fusion	5'
PTK2B	NM_173176	2, 3, 4, 5, 6, 7, 8	Fusion	5'
RARA	NM_000964	N/A	Mutation	E197, R272, T283-M284, L290-M297, R394, Q411
RARA	NM_000964	N/A	Expression Imbalance	N/A
RARA	NM_000964	2, 3, 4, 5	Fusion	5'
RBM15	NM_022768	1	Fusion	3'
ROS1	NM_002944	N/A	Expression Imbalance	N/A
ROS1	NM_002944	31, 32, 33, 34, 35, 36	Fusion	5'
RUNX1	NM_001754	5, 6, 7, 8, 9	Fusion	5'
RUNX1	NM_001754	2, 3, 4, 5, 6, 7, 8	Fusion	3'
RUNX1	NM_001754	N/A	Expression	N/A

			Imbalance	
RUNX1T1	NM_001198679	N/A	Expression Imbalance	N/A
RUNX1T1	NM_001198679	2,3	Fusion	5'
SEMA6A	NM_020796	1,2	Fusion	3'
SETD2	NM_014159	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	Fusion	3'
STIL	NM_003035	1, 2	Fusion	3'
TAL1	NM_003189	N/A	Expression	N/A
TAL1	NM_003189	2, 4	Fusion	5'
TAL1	NM_001290404	2, 3	Fusion	5'
TCF3	NM_003200	11, 12, 13, 14, 15, 16, 17, 18	Fusion	3'
TFG	NM_006070	2, 3, 4	Fusion	3'
TP63	NM_003722	3, 4, 5	Fusion	5'
TYK2	NM_003331	16, 18	Fusion	5'
TYK2	NM_003331	N/A	Mutation	W327
ZCCHC7	NM_032226	1, 2	Fusion	3'
ZCCHC7	NM_032226	2, 3, 4	Fusion	5'

Note: Fusions involving BCR and TCR loci, including IGH, IGL and IGK, are targeted for expression and may not be explicitly called as a fusion because these often do not result in chimeric transcripts. For the "Expression" assay type, unique molecules originating from probes across these genes can be counted and normalized to target control genes to enable relative expression level detection. Results are visualized in Archer Analysis.

SNPs targeted for sample tracking

rs1058083	rs1523537	rs4606077	rs6524626	rs9951171
rs10773760	rs1821380	rs560681	rs6530357	chrX 4429309
rs10776839	rs214955	rs576261	rs6811238	chrX 11314433
rs1109037	rs221956	rs5940270	rs722847	chrY 6738552
rs12393891	rs321198	rs5953060	rs740598	chrY 19490214
rs13182883	rs430046	rs5971553	rs8078417	
rs1498553	rs4530059	rs6444724	rs987640	

Note: SNPs may be used in combination to uniquely tag and track samples over time. Contact tech@archerdx.com for further details.

Archer Analysis Settings

Sequencing data should be processed using **Archer Analysis** (v5.0 or greater). The FusionPlex® Heme v2 panel requires selection of the **RNA Fusion** pipeline, found under the RNA Analysis Type in Archer Analysis. The **RNA SNP/InDel** pipeline may optionally be chosen as well (see the software user manual for further details on setting up analyses).

Limitations of Use

For Research Use Only. Not for use in diagnostic procedures. Not intended to be used for treatment of human or animal disease.

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

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