Product Insert

VARIANT*Plex*™ Lymphoma panel

VARIANT*Plex* Lymphoma

Description

The VARIANT*Plex* Lymphoma panel is a balanced pool of gene-specific primer (GSP) oligonucleotides that is optimized for use with VARIANT*Plex* reagents and molecular barcode (MBC) adapters to produce targeted NGS libraries. This product insert should be used in conjunction with VARIANT*Plex* HS/HGC protocol for Illumina® (RA-DOC-056) or VARIANT*Plex*-LAC protocol for Illumina® (RA-DOC-470).

VARIANTPlex Lymphoma contains **1787** GSPs targeting **51** genes commonly mutated in T- and B- cell lymphomas.

Description	Part number	Storage
VARIANT*Plex* Lymphoma GSP1, 8 reactions	SA24343081	–20°C ± 10°C
VARIANT*Plex* Lymphoma GSP2, 8 reactions	SA24343082	

Required reagent volumes

Protocol reference	Protocol step	Reagent	HS/HGC Protocol RA-DOC-056 Volume per reaction (µL)	LAC Protocol RA-DOC-470 Volume per reaction (µL)
A	Ligation Step 2 Elution	5mM NaOH	32	32
B	First PCR	VARIANT*Plex* Lymphoma GSP1	8	8
C	First PCR	10mM Tris-HCl pH 8.0	34	30
D	First PCR	Purified PCR1 eluate	32	28
E	Second PCR	VARIANT*Plex* Lymphoma GSP2	8	8

Recommended PCR cycling

	Step	Temperature (°C)	Time	Cycles
First PCR reaction	**1**	95	3 min	1
	2	95	30 sec	15
	3	60	10 sec	
	4	63	5 min (100% ramp rate)	
	5	72	3 min	1
	6	4	Hold	1
Second PCR reaction	**1**	95	3 min	1
	2	95	30 sec	20†
	3	60	10 sec	
	4	65	5 min (100% ramp rate)	
	5	72	3 min	1
	6	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

VARIANT*Plex* Lymphoma libraries should be sequenced to a minimum of **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 (v7.3 or greater). The VARIANT*Plex* Lymphoma panel requires selection of the ***SNV/Indel, Structural Variation***, **and Copy Number Variation** pipelines, found under the ***DNA*** Input Type (see the software user manual for further details on setting up analyses). Selection of the DNA Target Coverage pipeline is optional.

Processing of VARIANT*Plex* Lymphoma libraries requires a one-time upload of the Custom Panel GTF. When performing DNA Target Coverage analysis, users must also select a Region of Interest BED file. Users may optionally add a Targeted Mutations VCF file for targeted SNV/Indel detection. Files can be obtained by contacting archer-tech@idtdna.com

Assay targets

Gene	Accession	Exon
ARID1A	NM_006015	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20
ATM	NM_000051	1,2,3,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30, 31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56, 57,58,59,60,61,62,63
ATM	NM_001351835	4
B2M	NM_004048	1,2,3
BCL2	NM_000633	3
BCL2	NM_000657	2
BIRC3	NM_001165	2,3,4,5,6,7,8,9
BRAF	NM_004333	15
BTK	NM_000061	15
CARD11	NM_032415	2,3,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25
CCND1	NM_053056	1,2,3,4,5
CD28	NM_006139	4
CD28	NM_006139	1,2,3,4
CD79A	NM_001783	1,2,3,4,5
CD79B	NM_000626	1,2,3,4,5,6
CDKN2A	NM_000077	2,3
CDKN2A	NM_001195132	3
CDKN2A	NM_058195	1
CDKN2A	NM_058197	1

Gene	Accession	Exon
CDKN2B	NM_004936	2
CDKN2B	NM_078487	1
CREBBP	NM_004380	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31
CXCR4	NM_001008540	1
CXCR4	NM_001348056	2
CXCR4	NM_003467	1
DNMT3A	NM_001320893	1
DNMT3A	NM_022552	2,3,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23
DNMT3A	NM_153759	1,2
DNMT3A	NM_175630	4
EP300	NM_001429	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31
EZH2	NM_004456	2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20
FOXO1	NM_002015	1,2
ID3	NM_002167	1,2
IDH2	NM_002168	4
JAK1	NM_002227	14,17,20,25
JAK3	NM_000215	3,10,11,12,13,14,15,16,17,18,19
KLF2	NM_016270	1,2,3
KMT2D	NM_003482	2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55
MEF2B	NM_001145785	8
MEF2B	NM_005919	4,5,6,7,8,9,10
MYC	NM_002467	1,2,3
MYD88	NM_001172567	3

Gene	Accession	Exon
MYD88	NM_002468	4,5
NFKBIE	NM_004556	1,2,3,4,5,6
NOTCH1	NM_017617	34, c.*370 to c.*380
NOTCH2	NM_024408	34
NRAS	NM_002524	2,3,4,5
PIM1	NM_001243186	1
PIM1	NM_002648	2,3,4,5,6
PLCG1	NM_002660	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32
PLCG2	NM_002661	2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33
PTEN	NM_000314	1,2,3,4,5,6,7,8,9
PTEN	NM_001304717	1,2
PTPRD	NM_001171025	18
PTPRD	NM_002839	12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46
PTPRD	NM_130392	18
PTPRD	NM_130393	12
RHOA	NM_001664	2,3
SF3B1	NM_012433	13,14,15,16,17,18,19,20,21
SOCS1	NM_003745	2
STAT3	NM_003150	19,20
STAT3	NM_139276	21
STAT5B	NM_012448	14,15,16,17
STAT6	NM_003153	8,9,10,11,12,13,14
TCF3	NM_001136139	18

Gene	Accession	Exon
TCF3	NM_003200	2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19
TET2	NM_001127208	4,5,6,7,8,9,10,11
TET2	NM_017628	3
TNFAIP3	NM_006290	2,3,4,5,6,7,8,9
TNFRSF14	NM_003820	1,2,3,4,5,6,7,8
TP53	NM_000546	1,2,3,4,5,6,7,8,9,10
TP53	NM_001126113	10
TP53	NM_001126114	10
TRAF2	NM_021138	2,3,4,5,6,7,8,9,10,11
XPO1	NM_003400	15,16,18

Genes targeted for CNV

ARID1A	*CD28*	*DNMT3A*	*KLF2*	*PIM1*	*SOCS1*	*TRAF2*
ATM	*CD79A*	*EP300*	*KMT2D*	*PLCG1*	*STAT6*	
B2M	*CD79B*	*EZH2*	*MEF2B*	*PLCG2*	*TCF3*	
BCL2	*CDKN2A*	*FOXO1*	*MYC*	*PTEN*	*TET2*	
BIRC3	*CDKN2B*	*ID3*	*MYD88*	*PTPRD*	*TNFAIP3*	
CARD11	*CREBBP*	*JAK1*	*NFKBIE*	*RHOA*	*TNFRSF14*	
CCND1	*CXCR4*	*JAK3*	*NRAS*	*SF3B1*	*TP53*	

Please contact archer-tech@idtdna.com to inquire about enabling additional genes for CNV detection.

SNPs and sites targeted for sample tracking

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

SNPs may be used in combination to uniquely tag and track samples over time. Contact archer-tech@idtdna.com for further details.

Limitations of use

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.

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

Revision History

Document Number	Date	Description of change
RA-DOC-066/REV01	July 2024	Initial release.
RA-DOC-066/REV02	October 2024	Updated panel specification information to include PTEN and NRAS gene targets