

## VariantPlex® Myeloid

**Part # SK0123**

### Description

The VariantPlex Myeloid panel is an optimized balance of gene-specific primer (GSP) oligonucleotides that is used in conjunction with VariantPlex HGC Reagents for Illumina® (SK0115) and Molecular Barcode (MBC) Adapters to produce targeted NGS libraries of 75 genes frequently mutated in myeloid malignancies.

### Contents

Description	Part Number	Storage Conditions
VariantPlex® Myeloid GSP1 - 8 reactions	SA5031081	-20°C ± 10°C
VariantPlex® Myeloid GSP2 - 8 reactions	SA5031082	
PreSeq DNA QC Assay Standard - 32 µL	SA0597	
PreSeq DNA QC Assay 10X Primer Mix - 120 µL	SA0598	

### Required Reagent volumes:

Protocol Reference	Protocol Step	Reagent	Required volume (per reaction)
A	Ligation Step 2 Elution	5mM NaOH	<b>32µL</b>
B	First PCR	VariantPlex® Myeloid GSP1 (SA5031081)	<b>8µL</b>
C	First PCR	10mM Tris-HCl pH 8.0	<b>34µL</b>
D	First PCR	Purified PCR1 eluate	<b>32µL</b>
E	Second PCR	VariantPlex® Myeloid GSP2 (SA5031082)	<b>8µL</b>

### Recommended PCR Cycling:

	Step	Temperature (°C)	Time	Cycles
<b>First PCR Reaction</b>	1	95	3 minutes	1
	2	95	30 seconds	16
	3	62	5 min (100% ramp rate)	
	4	72	3 minutes	1
	5	4	Hold	1
<b>Second PCR Reaction</b>	1	95	3 minutes	1
	2	95	30 seconds	20*
	3	65	5 min (100% ramp rate)	
	4	72	3 minutes	1
	5	4	Hold	1

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

## Recommended Reads and Multiplexing

VariantPlex Myeloid libraries produced should be sequenced to a minimum of **4M** reads per sample. Based on end-user experience, fewer reads may be sufficient for libraries prepared using limited input masses. For more information, visit our frequently asked questions resource page at: [www.archerdx.com/faqs](http://www.archerdx.com/faqs)

## Assay Targets

Gene	Accession	Target Exon
ABL1	NM_005157	4,5,6,7,8,9,10
ANKRD26	NM_014915	1 (c.-113-c.-134)
ASXL1	NM_015338.5	1,2,3,4,5,6,7,8,9,10,11,12,13
ASXL1	NM_001164603.1	5
ATRX	NM_000489	8,9,10,11,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32
BCOR	NM_017745	2,3,4,5,6,7,9,10,11,12,13,14,15
BCOR	NM_001123385	8
BCORL1	NM_021946	1,2,3,4,5,6,7,8,9,10,11,12
BRAF	NM_004333	3,10,11,12,13,15
BTK	NM_000061	15
CALR	NM_004343	8,9
CBL	NM_005188	2,3,4,5,7,8,9,16
CBLB	NM_170662	3,9,10
CBLC	NM_012116	9,10
CCND2	NM_001759	5
CDKN2A	NM_058197	1
CDKN2A	NM_058195	1
CDKN2A	NM_000077	2,3
CDKN2A	NM_001195132	3
CEBPA	NM_004364	1
CSF3R	NM_156039	17
CSF3R	NM_172313	10,18
CSF3R	NM_000760	14,15,16
CUX1	NM_001202543	15,16,17,18,19,20,21,22,23,24
CUX1	NM_001913	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23
CUX1	NM_181552	1
CXCR4	NM_003467	1,2
DCK	NM_000788	2,3
DDX41	NM_016222	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17

DHX15	NM_001358	3
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
ETNK1	NM_018638	3
ETV6	NM_001987	1,2,3,4,5,6,7,8
EZH2	NM_004456	2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20
FBXW7	NM_018315	1,2,3,4,5,6,7,8,9,10,11
FLT3	NM_004119	8,9,10,11,12,13,14,15,16,17,19,20,21
GATA1	NM_002049	2
GATA2	NM_032638	2,3,4,5,6
GNAS	NM_000516	8,9,10,11
HRAS	NM_005343	2,3,4
IDH1	NM_005896	3,4
IDH2	NM_002168	4,6
IKZF1	NM_001220769	5
IKZF1	NM_001220767	2,3,4,5,7
IKZF1	NM_001220771	4
IKZF1	NM_001291845	4
IKZF1	NM_001291847	5
JAK2	NM_004972	12,13,14,15,16,19,20,21,22,23,24,25
JAK3	NM_000215	3,11,13,15,18,19
KDM6A	NM_021140	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
KDM6A	NM_001291415	14
KIT	NM_000222	1,2,5,8,9,10,11,12,13,14,15,17,18
KMT2A	NM_005933	1,2,3,4,5,6,7,8,9,10,11,12,13,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36
KMT2A	NM_001197104	14
KRAS	NM_004985	2,3,4
LUC7L2	NM_016019	1,2,3,4,5,6,7,8,9,10
LUC7L2	NM_001244585	2
MAP2K1	NM_002755	2,3
MPL	NM_005373	10,12
MYC	NM_002467	1,2,3
MYD88	NM_002468	4,5
MYD88	NM_001172567	3

NF1	NM_000267	1,2,3,4,5,6,7,8,9,10,11,12,13,14,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57
NF1	NM_001128147	15
NF1	NM_001042492	31
NOTCH1	NM_017617	26,27,28,34,c.*370 to c.*380
NPM1	NM_002520	11
NRAS	NM_002524	2,3,4,5
PDGFRA	NM_006206	12,14,15,18
PHF6	NM_032335	2,3,4,5,6,7,8
PHF6	NM_001015877	10
PHF6	NM_032458	9
PPM1D	NM_003620	6
PTEN	NM_000314	1,2,3,4,5,6,7,8,9
PTPN11	NM_002834	3,4,7,8,12,13
PTPN11	NM_080601	11
RAD21	NM_006265	2,3,4,5,6,7,8,9,10,11,12,13,14
RBBP6	NM_006910	p.1444,p.1451,p.1569,p.1654,p.1673
RUNX1	NM_001754	2,3,5,6,7,8,9
RUNX1	NM_001122607	1,5
SETBP1	NM_015559	4 (p.799-p.950)
SF3B1	NM_012433	13,14,15,16,17,18,19,20,21
SH2B3	NM_005475	2,3,4,5,6,7,8
SLC29A1	NM_001078175	4,13
SMC1A	NM_006306	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
SMC1A	NM_001281463	2
SMC3	NM_005445	10,13,19,23,25,28
SRSF2	NM_003016	1,2
STAG2	NM_006603	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
STAG2	NM_001042749	32
STAT3	NM_003150	20
STAT3	NM_139276	21
TET2	NM_001127208	4,5,6,7,8,9,10,11
TET2	NM_017628	3
TP53	NM_000546	1,2,3,4,5,6,7,8,9,10,11
TP53	NM_001276696	10
TP53	NM_001276695	10

U2AF1	NM_006758	2,6,7
U2AF1	NM_001025204	6
U2AF2	NM_007279	1,2,3,4,5,6,7,8,9,10,11,12
WT1	NM_000378	1,2,3,4,5,6,7,9
WT1	NM_001198552	8
XPO1	NM_003400	15,16,18
ZRSR2	NM_005089	1,2,3,4,5,6,7,8,9,10,11

## Genes targeted for CNV detection:

ASXL1	FLT3	CDC25C	TET2
BCOR	IKZF1	U2AF1	TP53
CBL	KDM6A	RPS14	U2AF1
CUX1	LUC7L2	MYC	WT1
ETV6	NF1	RAD21	ZRSR2
EZH2	CDKN2A	RUNX1	

## SNPs 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	

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

## Archer Analysis Settings

Sequencing data produced by this method must be converted to de-multiplexed FASTQ's, and then processed using [Archer Analysis](#) (v5.1 or greater). This provides all secondary analysis (read trimming/cleaning, de-duplication, error correction, alignment, and mutation calling), as well as some tertiary analysis (e.g., annotations and protein effect predictions). Analysis will produce detailed mutation reporting via graphical user interface, as well as raw text and BAM outputs.

The VariantPlex Myeloid libraries supports the following DNA Analysis Types: **DNA Copy Number Variation, DNA SNP/InDel, and DNA Structural Variation** in Archer Analysis (see the software user manual for further details on setting up analyses).

The Archer Analysis software is available as a separate download, which can be requested via a webform on the product webpage: [Archer Analysis](#). VariantPlex Myeloid libraries also require a one-

time upload of a Target Region file (a text file, in GTF format, which directs the software on how to analyze data from the panel) which can be obtained by contacting [tech@archerdx.com](mailto:tech@archerdx.com).

## Limitations of Use

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

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

© 2017 ArcherDX, Inc. All rights reserved. Reveal ctDNA™, VariantPlex®, PreSeq®, Archer® and FusionPlex® are trademarks of ArcherDX, Inc. Illumina®, NextSeq® and MiSeq® are registered trademarks of Illumina, Inc. Agencourt®, AMPure® and FormaPure® are registered trademarks of Agencourt Biosciences Corporation, a Beckman Coulter company. SYBR®, Life Technologies™, DynaMag™, Thermo Scientific™, Qubit™ and Maxima™ are registered trademarks of Thermo Fisher Scientific, Inc. KAPA Biosystems® is a registered trademark of KAPA Biosystems, Inc. RNase Away™ is a registered trademark of Molecular Bio-Products, Inc. BioRad®, iTaq™, and SsoAdvanced™ are registered trademarks of Bio-Rad Laboratories, Inc. Qiagen® and QuantiTect® are registered trademarks of Qiagen, Inc.

### ArcherDX, Inc.

2477 55th Street, Suite 202

Boulder, CO 80301

303-357-9001

<http://www.archerdx.com>