

QIAseq Targeted DNA Pro Panels

Human Myeloid Neoplasms Research

Cat. nos. 333651 PHS-003Z-12 and 333655 PHS-003Z-96

For ultrasensitive targeted next-generation sequencing (NGS) of DNA

The QIAseq Targeted DNA Pro Human Myeloid Neoplasms Research Panel permits the targeted next generation sequencing analysis of the whole coding region of 164 oncogenes and tumor suppressor genes relevant to myeloid neoplasms, covering 574,579 bases with 6,848 primers. The panel also targets actionable and interpretable cancer-related somatic variants relevant for classification of leukemia, lymphomas, myelodysplastic syndromes (MDS), myeloproliferative neoplasms (MPN), and other myeloid neoplasms. Targeted actionable and interpretable genes and variants were collected from 1) clinical practice guidelines recommended by multiple organizations, including the American College of Medical Genetics (ACMG), the American Society Of Hematology (ASH), the Association for Molecular Pathology (AMP), the American Society of Clinical Oncology (ASCO), the College of American Pathologists (CAP), the European Society for Medical Oncology (ESMO), and the National Comprehensive Cancer Network (NCCN); 2) the NIH NCBI ClinVar and Online Mendelian Inheritance in Man (OMIM) resources that compile variants with known associations to cancers cited by peer-reviewed publications, 3) clinical trial documents from resources such as Cancer.gov, ClinicalTrials.gov, and the UMIN Clinical Trials Registry; 4) requests and suggestions from QIAGEN KOLs and SMEs; and 5) other peer-reviewed publications. As a result, this primer pool gives researchers a comprehensive insight into myeloid neoplasm genomics with the detection of SNP/indels in a focused panel of relevant genes using digital DNA sequencing.

For further details, consult the *QIAseq Targeted DNA Pro Panels Handbook*.

Shipping and storage

The QIAseq Targeted DNA Pro Kits (except QIAseq Beads and QIAseq Bead Binding Buffer) are shipped on dry ice and should be stored at -30°C to -15°C in a constant-temperature freezer upon arrival. The QIAseq Beads and QIAseq Bead Binding Buffer are shipped on cold packs and should be stored at $2-8^{\circ}\text{C}$ upon arrival. The QIAseq Targeted DNA Pro Index Kits are shipped on dry ice and should be stored at -30°C to -15°C upon arrival. When stored correctly, the QIAseq Targeted DNA Pro Kits are good until the expiration date printed on the kit label.

Note: Open the package and store the products appropriately immediately upon receipt.



Panel Contents

QIAseq Targeted DNA Pro Catalog Number	333651	333655
No. of samples	12	96
One pool of region-specific primers	90 μ L	700 μ L
FFPE repair reagent	15 μ L	80 μ L
FFPE repair enzyme	17 μ L	120 μ L
FX Buffer, 10x	23 μ L	170 μ L
5X WGS FX Mix	42 μ L	330 μ L
FG Solution	170 μ L	170 μ L
UPH Ligation Buffer, 2.5x	288 μ L	1152 μ L
DNA Ligase	75 μ L	330 μ L
Ligation Cleanup Reagent	30 μ L	240 μ L
TEPCR Buffer, 5x	3 x 60 μ L	3 x 500 μ L
TEPCR modifier	30 μ L	230 μ L
TEPCR Cleanup Reagent	80 μ L	600 μ L
UPCR Buffer, 5x	500 μ L	4 x 500 μ L
QN Taq Polymerase	2 x 60 μ L	2 x 450 μ L
Nuclease-free water	1.5 mL	10 mL
One bottle containing QIAseq Bead Binding Buffer	10.2 mL	10.2 mL
One bottle containing QIAseq Beads	10 mL	10 mL

Gene Table

Gene Symbol	Gene Symbol	Gene Symbol	Gene Symbol
ABL1	ABL2	ANKRD26	ARHGAP26
ARID1A	ARID1B	ASXL1	ATM
ATRX	B2M	BARD1	BCL10
BCL2	BCL6	BCOR	BCORL1
BCR	BIRC3	BRAF	BRCA1
BRCA2	BRIPI	BTB	CALR
CARD11	CASP10	CBFB	CBL
CBLB	CBLC	CCND1	CCND2
CCR4	CD38	CD79A	CD79B
CDC25C	CDKN1B	CDKN2A	CDKN2B
CEBPA	CHEK1	CHEK2	CREBBP
CRLF2	CSF3R	CUX1	CXCR4
DCK	DDX41	DHX15	DKC1
DNMT3A	DNMT3B	EBF1	EGFR
ELANE	EP300	ERBB2	ETNK1
ETV6	EZH2	FANCL	FBXW7
FGFR3	FLT3	FOXO1	GATA1
GATA2	GATA3	GNAI3	GNA5
GNB1	H1-4	HRA5	IDH1
IDH2	IKZF1	IKZF2	IKZF3
IL7R	INO80	JAK1	JAK2
JAK3	KDM6A	KIT	KLF2
KMT2A	KMT2D	KRAS	LUC7L2
MAP2K1	MEF2B	MET	MPL
MTOR	MYC	MYD88	NF1
NOTCH1	NOTCH2	NPM1	NRAS
NUMA1	NUP214	PALB2	PAX5
PDGFRA	PDGFRB	PHF6	PICALM
PIGA	PIK3CA	PIM1	PLCG2
PPM1D	PRPF8	PTEN	PTPN11
RAD21	RAD51B	RAD51C	RAD51D
RAD54B	RAD54L	RARA	RB1
RBBP6	RET	RHOA	RP514
RUNX1	SAMD9	SAMD9L	SETBP1
SETD2	SF3B1	SH2B3	SLC29A1
SMC1A	SMC3	SOC51	SRP72
SRSF2	STAG2	STAT3	STAT5B
STAT6	TERC	TERT	TET1
TET2	TNFAIP3	TNFRSF14	TP53
TPSAB1	U2AF2	WT1	XPO1
ZAP70	ZEB2	ZRSR2	

Functional Groupings

Leukemia:

Acute Lymphoblastic Leukemia (ALL): ABL1, ABL2, BIRC3, BRAF, BTK, CDKN2A, CDKN2B, CREBBP, CRLF2, EBF1, EP300, ETV6, FBXW7, FLT3, GATA3, HRAS, IKZF1, IL7R, JAK1, JAK2, JAK3, KDM6A, KMT2A, KRAS, MYC, NOTCH1, NRAS, PAX5, PDGFRB, PLCG2, PTEN, PTPN11, RUNX1, SF3B1, SH2B3, TP53.

Acute Myeloid Leukemia (AML): ANKRD26, ASXL1, ATRX, BRCA1, BRCA2, CBFB, CBLB, CBLC, CCND2, CDC25C, CEBPA, CUX1, DCK, DDX41, DHX15, DNMT3A, ELANE, ETV6, FLT3, GATA1, GATA2, GNAS, HRAS, IDH1, IDH2, IKZF1, IKZF2, IKZF3, JAK2, KDM6A, KIT, KMT2A, KRAS, LUC7L2, MTOR, NPM1, NRAS, NUP214, PDGFRA, PICALM, PRPF8, PTPN11, RB1, RBBP6, RPS14, RUNX1, SF3B1, SLC29A1, SMC1A, TERT, TET1, TET2, TP53, U2AF2, WT1, ZEB2.

Acute Promyelocytic Leukemia (APML; APL): CEBPA, NPM1, NUMA1, RARA, RUNX1.

Atypical Chronic Myeloid Leukemia (aCML): ASXL1, CBL, CEBPA, EZH2, FLT3, JAK2, KRAS, NPM1, NRAS, RUNX1, SETBP1, SRSF2, TET2.

Chronic Lymphocytic Leukemia (CLL): ATRX, BCL2, BIRC3, BRAF, CBLB, CCND2, CD38, CUX1, GNAS, GNB1, LUC7L2, MYD88, NOTCH1, NRAS, PTPN11, SF3B1, TP53, U2AF2, XPO1, ZAP70.

Chronic Myeloid Leukemia (CML): ABL1, ASXL1, BCOR, BCR, BRAF, CBL, CREBBP, DNMT3A, DNMT3B, EZH2, IDH1, IDH2, IKZF1, JAK2, KRAS, NPM1, NRAS, RUNX1, TET1, TET2, TP53, WT1.

Chronic Myelomonocytic Leukemia (CMML): ASXL1, BCOR, BCORL1, CBL, CEBPA, DNMT3A, EZH2, FLT3, IDH1, IDH2, JAK2, KIT, KRAS, MPL, NF1, NPM1, NRAS, PHF6, PTPN11, RUNX1, SETBP1, SF3B1, SRSF2, STAG2, TET2, TP53, ZRSR2.

Hairy Cell Leukemia: BRAF, CDKN1B, MAP2K1, TP53.

Juvenile Myelomonocytic Leukemia: ARHGAP26, CBL, KRAS, NRAS, PTPN11.

Lymphomas:

Acute Lymphocytic Lymphomas: BIRC3, BTK, CDKN2A, CDKN2B, MYC, NOTCH1, PLCG2, SF3B1, TP53.

B Cell Lymphomas: BCL6, BRAF, CD79A, CHEK2, EZH2, MAP2K1, MYD88, STAT6, TNFRSF14, TP53.

Burkitt Lymphomas: CBLB, GNA13, H1-4, MTOR, MYC.

Diffuse Large B Cell Lymphomas: B2M, BCL2, CBLB, GNA13, H1-4, KMT2D, MTOR, PIM1, PRPF8, SOCS1, TNFAIP3.

Follicular Lymphomas: ARID1A, BCL10, BCL2, CARD11, CREBBP, EP300, EZH2, FOXO1, KMT2D, MEF2B.

Mantle Cell Lymphomas: ATM, CCND1.

Marginal Zone Lymphomas: KLF2, MYD88, NOTCH2, TNFAIP3, TP53.

Mucosa-Associated Lymphoid Tissue (MALT) Lymphomas: BCL10, TNFAIP3.

Non-Hodgkin Lymphomas: BRAF, CASP10, NRAS, PIK3CA, RAD54B, RAD54L, TP53.

Primary Cutaneous Lymphomas: CD79B, MYD88.

Small Lymphocytic Lymphomas: ATRX, BCL2, CBLB, CCND2, CUX1, GNAS, LUC7L2, U2AF2, XPO1.

T Cell Lymphomas: ARID1B, ATM, CBLB, CCR4, DNMT3A, IDH1, IDH2, INO80, JAK1, JAK3, RHOA, SETD2, STAT3, STAT5B, TET2.

Myelodysplastic Syndromes (MDS) & Myeloproliferative Neoplasms (MPN):

Myelodysplastic Syndromes (MDS): ANKRD26, ASXL1, ATRX, BCOR, BCORL1, CALR, CBL, CEBPA, CSF3R, CUX1, DDX41, DKC1, DNMT3A, ETNK1, ETV6, EZH2, FLT3, GATA2, GNAS, GNB1, IDH1, IDH2, JAK2, JAK3, KIT, KRAS, MPL, NF1, NPM1, NRAS, PHF6, PIGA, PPM1D, PTPN11, RAD21, RUNX1, SAMD9, SAMD9L, SETBP1, SF3B1, SMC3, SRP72, SRSF2, STAG2, STAT3, TERC, TERT, TET2, TP53, WT1, ZRSR2.

Myeloproliferative Neoplasms (NPM): ASXL1, BCOR, CALR, CBL, CSF3R, DNMT3A, ETV6, EZH2, IDH1, IDH2, JAK2, KIT, MPL, NOTCH1, NRAS, PDGFRA, RUNX1, SETBP1, SF3B1, SH2B3, SRSF2, STAT3, STAT5B, TET2, TP53, ZRSR2.

Other Myeloid Neoplasms:

Essential Thrombocythemia: ASXL1, CBL, IDH2, JAK2, MPL, SF3B1, TET2, TP53.

Multiple Myeloma: ATM, BARD1, BRAF, BRCA1, BRCA2, BRIP1, CHEK1, CHEK2, CXCR4, EGFR, ERBB2, FANCL, FGFR3, IDH1, IDH2, KIT, KRAS, MET, NRAS, PALB2, PDGFRA, RAD51B, RAD51C, RAD51D, RET, TP53.

Plasma Cell Myeloma: HRAS, MTOR, RB1, SLC29A1.

Polycythemia Vera: ASXL1, DNMT3A, EZH2, IDH1, JAK2, NRAS, TET2, TP53.

Primary Myelofibrosis: ASXL1, CBL, DNMT3A, EZH2, IDH1, IDH2, JAK2, MPL, NF1, NRAS, SETBP1, SF3B1, SRSF2, TET2, TP53.

Systemic Mastocytosis: ASXL1, CBL, DNMT3A, ETV6, EZH2, IDH2, JAK2, KIT, KRAS, NPM1, NRAS, RUNX1, SETBP1, SF3B1, SRSF2, TET2, TP53.

Waldenstrom Macroglobulinemia: CXCR4, MYD88.

Ordering Information

Product	Contents	Cat. no.
QIAseq Targeted DNA Pro (12)	All reagents (except indexes) for targeted DNA sequencing; fixed panel for 12 samples; less than 200 genes	333651
QIAseq Targeted DNA Pro (96)	All reagents (except indexes) for targeted DNA sequencing; fixed panel for 96 samples; less than 200 genes	333655
QIAseq Targeted DNA Pro HC (12)	All reagents (except indexes) for targeted DNA sequencing; fixed panel for 12 samples; more than 200 genes	333661
QIAseq Targeted DNA Pro HC (96)	All reagents (except indexes) for targeted DNA sequencing; fixed panel for 96 samples; more than 200 genes	333665
QIAseq Targeted DNA Pro Custom (96)	All reagents (except indexes) for targeted DNA sequencing; custom panel for 96 samples	333675
QIAseq Targeted DNA Pro Booster (96)	Pool of primers used in combination with either catalogued or custom panels	333685

QIAseq Targeted DNA Pro Unique Dual Indices

QIAseq Targeted DNA Pro UDI Set A (96)	Box containing unique molecularly indexed adapters and primers, enough for a total of 96 samples, for indexing up to 96 samples for targeted panel sequencing on Illumina platforms; Set A (of A, B, C, D, E, F, G, and H) required for multiplexing 768 samples in one run	333455
QIAseq Targeted DNA Pro UDI Set B (96)	Box containing unique molecularly indexed adapters and primers, enough for a total of 96 samples, for indexing up to 96 samples for targeted panel sequencing on Illumina platforms; Set B (of A, B, C, D, E, F, G, and H) required for multiplexing 768 samples in one run	333465
QIAseq Targeted DNA Pro UDI Set C (96)	Box containing unique molecularly indexed adapters and primers, enough for a total of 96 samples, for indexing up to 96 samples for targeted panel sequencing on Illumina platforms; Set C (of A, B, C, D, E, F, G, and H) required for multiplexing 768 samples in one run	333475

Product	Contents	Cat. no.
QIAseq Targeted DNA Pro UDI Set D (96)	Box containing unique molecularly indexed adapters and primers, enough for a total of 96 samples, for indexing up to 96 samples for targeted panel sequencing on Illumina platforms; Set D (of A, B, C, D, E, F, G, and H) required for multiplexing 768 samples in one run	333485
QIAseq Targeted DNA Pro UDI Set E (96)	Box containing unique molecularly indexed adapters and primers, enough for a total of 96 samples, for indexing up to 96 samples for targeted panel sequencing on Illumina platforms; Set E (of A, B, C, D, E, F, G, and H) required for multiplexing 768 samples in one run	334015
QIAseq Targeted DNA Pro UDI Set F (96)	Box containing unique molecularly indexed adapters and primers, enough for a total of 96 samples, for indexing up to 96 samples for targeted panel sequencing on Illumina platforms; Set F (of A, B, C, D, E, F, G, and H) required for multiplexing 768 samples in one run	334025
QIAseq Targeted DNA Pro UDI Set G (96)	Box containing unique molecularly indexed adapters and primers, enough for a total of 96 samples, for indexing up to 96 samples for targeted panel sequencing on Illumina platforms; Set G (of A, B, C, D, E, F, G, and H) required for multiplexing 768 samples in one run	334035
QIAseq Targeted DNA Pro UDI Set H (96)	Box containing unique molecularly indexed adapters and primers, enough for a total of 96 samples, for indexing up to 96 samples for targeted panel sequencing on Illumina platforms; Set H (of A, B, C, D, E, F, G, and H) required for multiplexing 768 samples in one run	334045
QIAseq Targeted DNA Pro UDI (12)	Box containing unique molecularly-indexed adapters and primers, enough for a total of 12 samples, for indexing up to 12 samples for targeted panel sequencing on Illumina platforms	333441
QIAseq Targeted DNA Pro Indices for Ion Torrent platforms		
QIAseq Targeted DNA Pro Index L (12)	Box containing molecularly-indexed adapters and primers, enough for a total of 12 samples – for indexing up to 12 samples for targeted panel sequencing on Ion Torrent platforms	333491

Product	Contents	Cat. no.
QIAseq Targeted DNA Pro Index L (24)	Box containing molecularly-indexed adapters and primers, enough for a total of 24 samples – for indexing up to 24 samples for targeted panel sequencing on Ion Torrent platforms	333492
Related products		
QIAseq Library Quant Assay Kit	Reagents for quantification of libraries prepared for Illumina or Ion Torrent platforms; assay format	333314
QIAseq Universal Normalizer Kit (96)	For 96 reactions: Reagents for the normalization of libraries using indexed library amplification primers.	180615
QIAseq Universal Normalizer Kit (24)	For 24 reactions: Reagents for the normalization of libraries using indexed library amplification primers.	180613
QIAamp DNA Mini Kit (50)	For 50 DNA preps: 50 QIAamp Mini Spin Columns, QIAGEN Proteinase K, Collection Tubes (2 mL), reagents and buffers	51304
QIAamp Circulating Nucleic Acid Kit (50)	For 50 DNA preps: QIAamp Mini Columns, Tube Extenders (20 mL), QIAGEN Proteinase K, Carrier RNA, Buffers, VacConnectors, and Collection Tubes (1.5 mL and 2 mL)	55114
QIAamp DNA FFPE Advanced UNG Kit (50)	For 50 preps: Uracil-N-glycosylase, QIAamp UCP MinElute columns, collection tubes, Deparaffinization Solution, Proteinase K, RNase A, RNase-free water and buffers	56704

QIAseq Targeted DNA Pro Panels are intended for molecular biology applications. These products are not intended for the diagnosis, prevention or treatment of a disease.

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Sample to Insight