

QIAseq Targeted DNA Panels

Human Breast Cancer

Cat. Nos. 333502 DHS-001Z-12 and 333505 DHS-001Z-96

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

The QIAseq Targeted DNA Human Breast Cancer Panel permits the sequencing of the whole coding region of 93 genes frequently mutated in breast cancer samples, covering 370,942 bases with 4,831 primers. Such frequently detected mutations are likely to be relevant or even important to breast cancer biology and may be used in translational research to classify samples with known phenotypes. Using the Catalogue of Somatic Mutations in Cancer (COSMIC), frequently mutated genes were collected for triple-negative breast cancers, ER-positive breast cancers, PR-positive breast cancers, and HER-positive breast cancers. Mutated genes were also collected for basal carcinomas, ductal carcinomas, ductolobular carcinomas, lobular carcinomas, luminal carcinomas, and other carcinomas. Using digital DNA sequencing, SNP/indels in a focused panel of genes relevant to breast cancer can be detected with this primer pool.

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

Shipping and storage

QIAseq Targeted DNA Panels (except Ligation Solution and QIAseq Beads) are shipped on dry ice and should be stored at -30 to -15°C in a constant-temperature freezer upon arrival. The QIAseq Beads and Ligation Solution are shipped on cold packs and should be stored at $2-8^{\circ}\text{C}$ except that the Ligation Solution should be removed immediately upon receipt and stored at -30 to -15°C in a constant-temperature freezer. The QIAseq Index kits are shipped on dry ice and should be stored at -30°C to -15°C upon arrival. When stored correctly, the QIAseq Index 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 Panel Catalog Number	333502	333505
Number of samples	12	96
One pool of region-specific primers	75 µl	600 µl
Fragmentation Buffer, 10x	40 µl	300 µl
Fragmentation Enzyme Mix	75 µl	600 µl
FERA Solution	15 µl	110 µl
FG Solution	170 µl	170 µl
Ligation Buffer, 5x	160 µl	1250 µl
DNA Ligase	75 µl	600 µl
Ligation Solution	125 µl	970 µl
Nuclease-free Water	1.5 ml	10 ml
TEPCR Buffer, 5x	60 µl	500 µl
UPCR Buffer, 5x	60 µl	500 µl
HotStarTaq® DNA Polymerase	30 µl	240 µl
One bottle containing QIAseq Beads	10 ml	55 ml

Gene Table

Gene Symbol	Gene Symbol	Gene Symbol	Gene Symbol
ABRAXAS1	ACVR1B	AKT1	APC
AR	ATM	ATR	AXIN2
BAP1	BARD1	BLM	BMPRIA
BRCA1	BRCA2	BRIPI	CASP8
CBFB	CCND1	CDH1	CDK4
CDK6	CDKN2A	CHEK2	C5MD1
CTNNB1	DIRAS3	EGFR	EP300
EPCAM	ERBB2	ERBB3	ERCC4
ESR1	EXOC2	EXT2	FANCC
FBXO32	FGFR1	FGFR2	GATA3
GEN1	HERC1	HOXB13	IRAK4
ITCH	KMT2C	KRAS	MAP2K4
MAP3K1	MDM2	MED12	MEN1
MLH1	MRE11	MSH2	MSH6
MUC16	MUTYH	MYC	NBN
NCOR1	NEK2	NF1	PALB2
PALLD	PBRM1	PCGF2	PIK3CA
PIK3R1	PMS1	PMS2	PPM1L
PTEN	PTGFR	RAD50	RAD51
RAD51C	RAD51D	RB1	RET
SEPTIN9	SMAD4	SMARCA4	STK11
SYNE1	TGFB1	TP53	TRAF5
VHL	WEE1	XRCC2	XRCC3
ZBED4			

Functional Groupings

Carcinomas

Adenoid Cystic Carcinomas: PIK3CA, PTEN.

Basal (Triple-Negative) Carcinomas: ATR, BLM, BRCA1, BRCA2, CASP8, CDH1, CDKN2A, CSMD1, EGFR, ERBB2, ERBB3, EXOC2, FGFR1, HERC1, ITCH, KMT2C, KRAS, MED12, MSH6, MUC16, NEK2, PALLD, PIK3CA, PIK3R1, PMS2, PTEN, PTGFR, RAD51C, RB1, SMARCA4, SYNE1, TP53, XRCC2.

Ductal Carcinomas: AKT1, APC, ATM, ATR, BRCA1, BRCA2, CDH1, CDKN2A, CSMD1, EGFR, ERBB2, FANCC, FGFR2, GATA3, GEN1, HERC1, HOXB13, KMT2C, KRAS, MED12, MLH1, MRE11, MSH2, MUC16, NF1, PALB2, PALLD, PIK3CA, PIK3R1, PTEN, RAD51D, SMAD4, STK11, SYNE1, TP53.

Ductolobular Carcinomas: PIK3CA.

ER-Positive & PR-Positive Carcinomas: ACVR1B, AKT1, APC, CBF3, CDH1, ERBB3, EXT2, HERC1, KRAS, MLH1, MRE11, PIK3CA, PPM1L, PTEN, SEPTIN9, TP53.

HER-Positive Carcinomas: APC, AR, BMPR1A, CASP8, CDH1, CDK4, FBXO32, HERC1, IRAK4, ITCH, KMT2C, MLH1, MSH6, MUC16, NCOR1, NF1, PALB2, PIK3CA, PTGFR, RAD50, SMAD4, STK11, TP53, TRAF5.

Lobular Carcinomas: AKT1, ATR, CDH1, ERBB2, MSH2, NF1, PALB2, PIK3CA, RB1, TP53, VHL.

Luminal Carcinomas: APC, CDH1, CDKN2A, CSMD1, GATA3, KRAS, MAP2K4, NBN, PIK3CA, PTEN, TP53.

Other Carcinomas: ABRAXAS1, APC, AR, ATR, AXIN2, BARD1, BRIP1, CASP8, CDK6, CHEK2, CSMD1, CTNNB1, DIRAS3, ERCC4, FANCC, GEN1, HERC1, HOXB13, KRAS, MED12, MEN1, MRE11, MSH6, MUTYH, NBN, NF1, PALB2, PALLD, PMS1, PMS2, RAD50, RAD51, RAD51C, SMAD4, SMARCA4, STK11, SYNE1, TGFBI.

Other Carcinoma-Related Genes: BAP1, EP300, ESR1, MAP3K1, MDM2, MYC, PBRM1, PCGF2, WEE1, ZBED4.

Carcinomas *in situ*

Ductal & Lobular Carcinomas *in situ*: CDH1.

Ductal Carcinomas *in situ*: AKT1, CDH1, PIK3CA, TP53.

Lobular Carcinomas *in situ*: CDH1.

Hyperplasia

Atypical Ductal Hyperplasia: PIK3CA, PTEN.

Atypical Lobular Hyperplasia: CDH1.

Ductal Epithelial Hyperplasia-Hyperplasia of Usual Type: PIK3CA.

Other Breast Cancer Genes: CCND1, EPCAM, XRCC3.

Other Tumors

Fibrosis: PIK3CA.

Neoplasm: TP53.

Papilloma: AKT1.

Phyllodes Tumor: RET, TP53.

Ordering Information

Product	Contents	Cat. no.
QIAseq Targeted DNA Panel (12)	ALL reagents (except indexes) for targeted DNA sequencing; fixed panel for 12 samples; less than 200 genes	333502
QIAseq Targeted DNA Panel (96)	ALL reagents (except indexes) for targeted DNA sequencing; fixed panel for 96 samples; less than 200 genes	333505
QIAseq Targeted DNA HC Panel (12)	ALL reagents (except indexes) for targeted DNA sequencing; fixed panel for 12 samples; more than 200 genes	333512
QIAseq Targeted DNA HC Panel (96)	ALL reagents (except indexes) for targeted DNA sequencing; fixed panel for 96 samples; more than 200 genes	333515
QIAseq Targeted DNA Custom Panel (96)	ALL reagents (except indexes) for targeted DNA sequencing; Custom panel for 96 samples	333525
QIAseq Targeted DNA Extended Panel (96)	ALL reagents (except indexes) for targeted DNA sequencing; Extended panel for 96 samples	333545
QIAseq Targeted DNA Booster Panel (96)	Pool of primers used in combination with either cataloged or custom panels	333535
QIAseq Unique Dual Indices		
QIAseq 96-Unique Dual Index Set A (384)	Box containing unique molecularly indexed adapters and primers, enough for a total of 384 samples, for indexing up to 96 samples for targeted panel sequencing on Illumina platforms; Set A (of A and B) required for multiplexing 192 samples in one run	333725
QIAseq 96-Unique Dual Index Set B (384)	Box containing unique molecularly indexed adapters and primers, enough for a total of 384 samples, for indexing up to 96 samples for targeted panel sequencing on Illumina platforms; Set A (of A and B) required for multiplexing 192 samples in one run	333735
QIAseq 8-Unique Dual Index Set A (48)	Box containing unique molecularly-indexed adapters and primers, enough for a total of 48 samples, for indexing up to 8 samples for targeted panel sequencing on Illumina platforms; Set A (of A and B) required for multiplexing 16 samples in one run	333715

Product	Contents	Cat. no.
QIAseq 8-Unique Dual Index Set B (48)	Box containing unique molecularly-indexed adapters and primers, enough for a total of 48 samples, for indexing up to 8 samples for targeted panel sequencing on Illumina platforms; Set A (of A and B) required for multiplexing 16 samples in one run	333716
QIAseq Combinatorial Dual Indices		
QIAseq 12-Index I (48)	Box containing molecularly indexed adapters and primers, enough for a total of 48 samples, for indexing up to 12 samples for targeted panel sequencing on Illumina platforms	333714
QIAseq 96-Index I Set A (384)	Box containing molecularly indexed adapters and primers, enough for a total of 384 samples, for indexing up to 96 samples for targeted panel sequencing on Illumina platforms; one of 4 sets required for multiplexing 384 samples	333727
QIAseq 96-Index I Set B (384)	Box containing molecularly indexed adapters and primers, enough for a total of 384 samples, for indexing up to 96 samples for targeted panel sequencing on Illumina platforms; 2 of 4 sets required for multiplexing 384 samples	333737
QIAseq 96-Index I Set C (384)	Box containing molecularly indexed adapters and primers, enough for a total of 384 samples, for indexing up to 96 samples for targeted panel sequencing on Illumina platforms; 3 of 4 sets required for multiplexing 384 samples	333747
QIAseq 96-Index I Set D (384)	Box containing molecularly indexed adapters and primers, enough for a total of 384 samples, for indexing up to 96 samples for targeted panel sequencing on Illumina platforms; 4 of 4 sets required for multiplexing 384 samples	333757
QIAseq Targeted DNA Indices for Ion Torrent platforms		
QIAseq 12-Index L (48)	Box containing molecularly-indexed adapters and primers, enough for a total of 48 samples – for indexing up to 12 samples for targeted panel sequencing on Ion Torrent platforms	333764
QIAseq 96-Index L (384)	Box containing molecularly-indexed adapters and primers in arrays, enough for a total of 384 samples – for indexing up to 96 samples for targeted panel sequencing on Ion Torrent platforms	333777

Product	Contents	Cat. no.
Related products		
QIAseq Library Quant Array Kit	Reagents for quantification of libraries prepared for Illumina or Ion Torrent platforms; array format	333304
QIAseq Library Quant Assay Kit	Reagents for quantification of libraries prepared for Illumina or Ion Torrent platforms; assay format	333314
QIAseq DNA QuantiMIZE Array Kit	qPCR arrays for optimizing amount of input DNA and PCR cycling conditions for targeted enrichment of FFPE DNA	333404
QIAseq DNA QuantiMIZE Assay Kit	qPCR assays for optimizing amount of input DNA and PCR cycling conditions for targeted enrichment of FFPE DNA	333414
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 Tissue Kit	For 50 DNA preps: 50 QIAamp MinElute Columns, Proteinase K, Buffers, Collection Tubes (2 ml)	56404
QIAamp DNA FFPE Advanced Kit	For 50 preps: QIAamp UCP MinElute Columns, collection tubes, Deparaffinization Solution, Proteinase K, RNase A, RNase-free water and buffers	56604
QIAamp DNA FFPE UNG Kit	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 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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