

# QIAseq Targeted DNA Panels

## Human Pharmacogenomics

Cat. Nos. 333502 DHS-I04Z-I2 and 333505 DHS-I04Z-96

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

The QIAseq Targeted DNA Human Pharmacogenomics Panel permits the sequencing of the whole coding regions of 31 genes critical for phase I and phase II drug metabolism as well as drug transport, covering 3,313 bases with 146 primers. These genes' haplotypes affect individuals' abilities to absorb, distribute, metabolize, and eliminate medications in ways that can lead to toxicity (ADMET). Phase I drug metabolism enzymes make compounds more hydrophilic and add functional groups necessary for the completion of Phase II drug metabolism. Phase II drug metabolism enzymes catalyze the conjugation of lipophilic compounds with hydrophilic functional groups or moieties to form water-soluble conjugates that can be cleared from cells and from the body via transport. Mutations in these genes impair the conversion of drugs to their active form and their proper clearance from the body thereby decreasing drug effectiveness and increasing the likelihood of side effects. This panel covers drug transporter genes such as ATP-binding cassette (ABC) transporters, organic anion and cation transporters, and peptide / proton transporters. Cytochrome P450 enzyme family members are the principle phase I drug metabolism genes covered by this panel. Phase II metabolism genes covered by the panel include glutathione S-transferases (GST), N-acetyltransferases, sulfotransferases, thiopurine S-methyltransferases, and UDP-glucuronosyltransferases. Using digital DNA sequencing, SNP/indels in key genes relevant to pharmacogenomics 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  $-15^{\circ}\text{C}$  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  $-15^{\circ}\text{C}$  in a constant-temperature freezer. The QIAseq Index kits are shipped on dry ice and should be stored at  $-30^{\circ}\text{C}$  to  $-15^{\circ}\text{C}$  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 $\mu$ l	600 $\mu$ l
Fragmentation Buffer, 10x	40 $\mu$ l	300 $\mu$ l
Fragmentation Enzyme Mix	75 $\mu$ l	600 $\mu$ l
FERA Solution	15 $\mu$ l	110 $\mu$ l
FG Solution	170 $\mu$ l	170 $\mu$ l
Ligation Buffer, 5x	160 $\mu$ l	1250 $\mu$ l
DNA Ligase	75 $\mu$ l	600 $\mu$ l
Ligation Solution	125 $\mu$ l	970 $\mu$ l
Nuclease-free Water	1.5 ml	10 ml
TEPCR Buffer, 5x	60 $\mu$ l	500 $\mu$ l
UPCR Buffer, 5x	60 $\mu$ l	500 $\mu$ l
HotStarTaq® DNA Polymerase	30 $\mu$ l	240 $\mu$ l
One bottle containing QIAseq Beads	10 ml	55 ml

## Gene Table

Gene Symbol	Gene Symbol	Gene Symbol	Gene Symbol
ABCB1	ABCC2	ABCG2	CYP1A1
CYP1A2	CYP2A6	CYP2B6	CYP2C19
CYP2C8	CYP2C9	CYP2D6	CYP2E1
CYP3A4	CYP3A5	DPYD	GSTM1
GSTP1	NAT1	NAT2	SLC15A2
SLC22A1	SLC22A2	SLC22A6	SLCO1B1
SLCO1B3	SLCO2B1	SULT1A1	TPMT
UGT1A1	UGT2B15	UGT2B7	

## Functional Groupings

**ATP-Binding Cassette (ABC) Transporters:** ABCB1, ABCC2, ABCG2.

**Organic Anion Transporters:** SLC22A6, SLCO1B1, SLCO1B3, SLCO2B1.

**Organic Cation Transporters:** SLC22A1, SLC22A2.

**Peptide / Proton Transporters:** SLC15A2.

**Cytochrome P450 Family Members:** CYP1A1, CYP1A2, CYP2A6, CYP2B6, CYP2C19, CYP2C8, CYP2C9, CYP2D6, CYP2E1, CYP3A4, CYP3A5.

**Dihydropyrimidine Dehydrogenases:** DPYD.

**Glutathione S-Transferases:** GSTP1.

**N-Acetyltransferases:** NAT1, NAT2.

**Sulfotransferases:** SULT1A1.

**Thiopurine S-Methyltransferases:** TPMT.

**UDP-Glucuronosyltransferases:** UGT1A1, UGT2B15, UGT2B7.

## 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
<b>QIAseq Unique Dual Indices</b>		
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

<b>Product</b>	<b>Contents</b>	<b>Cat. no.</b>
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
<b>QIAseq Combinatorial Dual Indices</b>		
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
<b>QIAseq Targeted DNA Indices for Ion Torrent platforms</b>		
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

<b>Product</b>	<b>Contents</b>	<b>Cat. no.</b>
<b>Related products</b>		
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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Sample to Insight