

# QIAseq Targeted DNA Panels

## Human Mitochondria

**Cat. Nos. 333502 DHS-I05Z-I2 and 333505 DHS-I06Z-96**

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

The QIAseq Targeted DNA Human Mitochondria Panel permits next generation sequencing analysis of the entire 16,570-base human mitochondrial genome with 222 primers for cancer research purposes. Both coding and noncoding somatic mitochondrial DNA mutations are routinely detected in tumor samples. Their specific roles in cancer are not clear and even controversial. The same variants occur as frequently in the general population, and mitochondrial DNA mutations accumulate with age anyway due to more oxidative stress insults and inefficient repair mechanisms. However, associative and functional studies have implicated these variants in oncogenesis and metastasis. Based on these functional studies and the genes mutated, defects in normal mitochondrial function such as metabolism and apoptosis have been proposed as the oncogenic and metastatic molecular mechanisms. The appearance of other variants in the general population also suggests that they may improve cancer cell fitness in other environments during metastasis. Specific variants may also appear, disappear, and reappear during tumor progression. Maternally inherited mitochondrial genome mutations also seem to predispose individuals to cancer. At the very least, the clonal nature and high copy number of mitochondrial genomes offer their mutations as another potential source of new cancer detection biomarkers. The true value of mitochondrial DNA mutations to cancer warrants further research into their prevalence and association with cancer phenotypes. Using digital DNA sequencing, SNP/indels across the entire mitochondrial genome 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 $\mu\text{l}$	600 $\mu\text{l}$
Fragmentation Buffer, 10x	40 $\mu\text{l}$	300 $\mu\text{l}$
Fragmentation Enzyme Mix	75 $\mu\text{l}$	600 $\mu\text{l}$
FERA Solution	15 $\mu\text{l}$	110 $\mu\text{l}$
FG Solution	170 $\mu\text{l}$	170 $\mu\text{l}$
Ligation Buffer, 5x	160 $\mu\text{l}$	1250 $\mu\text{l}$
DNA Ligase	75 $\mu\text{l}$	600 $\mu\text{l}$
Ligation Solution	125 $\mu\text{l}$	970 $\mu\text{l}$
Nuclease-free Water	1.5 ml	10 ml
TEPCR Buffer, 5x	60 $\mu\text{l}$	500 $\mu\text{l}$
UPCR Buffer, 5x	60 $\mu\text{l}$	500 $\mu\text{l}$
HotStarTaq® DNA Polymerase	30 $\mu\text{l}$	240 $\mu\text{l}$
One bottle containing QIAseq Beads	10 ml	55 ml

Gene Table

Gene Symbol	Gene Symbol	Gene Symbol	Gene Symbol
MT-ATP6	MT-ATP8	MT-CO1	MT-CO2
MT-CO3	MT-CYB	MT-ND1	MT-ND2
MT-ND3	MT-ND4	MT-ND4L	MT-ND5
MT-ND6	MT-RNR1	MT-RNR2	MT-TA
MT-TC	MT-TD	MT-TE	MT-TF
MT-TG	MT-TH	MT-TI	MT-TK
MT-TL1	MT-TL2	MT-TM	MT-TN
MT-TP	MT-TQ	MT-TR	MT-TS1
MT-TS2	MT-TT	MT-TV	MT-TW
MT-TY			

Functional Groupings

- ATP Synthase (Complex V): MT-ATP6, MT-ATP8.
- Cytochrome C Oxidase (Complex IV): MT-CO1, MT-CO2, MT-CO3.
- Coenzyme Q - Cytochrome C Reductase / Cytochrome B (Complex III): MT-CYB.
- NADH dehydrogenase (Complex I): MT-ND1, MT-ND2, MT-ND3, MT-ND4, MT-ND4L, MT-ND5, MT-ND6.
- Ribosomal RNA: MT-RNR1, MT-RNR2.
- Transfer RNAs (tRNAs): MT-TA, MT-TC, MT-TD, MT-TE, MT-TF, MT-TG, MT-TH, MT-TI, MT-TK, MT-TL1, MT-TL2, MT-TM, MT-TN, MT-TP, MT-TQ, MT-TR, MT-TS1, MT-TS2, MT-TT, MT-TV, MT-TW, MT-TY.

## 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
<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

Product	Contents	Cat. no.
<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**