

QIAseq Targeted RNA Panels

Mouse Molecular Toxicology Transcriptome

Cat. no. 333002 RMM-006Z

For gene expression profiling by RNA sequencing with laboratory-verified primer sets

The Mouse Molecular Toxicology Transcriptome QIAseq Targeted RNA Panel profiles the expression of 370 key genes in at least 13 different biological pathways activated in response to toxic drugs. Profiling the expression of these genes in human cell lines (such as hepatocytes) or organs (especially livers) of mice or rats treated with candidate drugs can help indicate which toxicological responses have been induced. Understanding these mechanisms can then guide chemical modifications to avoid the observed toxic responses rather than completely dismissing a drug class otherwise effective at preventing or treating the target disease phenotype. The toxic response pathways represented in this panel can be independent or interrelated. For example, inhibition of β -oxidation leads to steatosis, and uncoupling mitochondrial energy metabolism leads to apoptosis and necrosis. Drugs affecting reactive oxygen species metabolism or cellular redox status cause oxidative stress and induce antioxidant responses. These and other reactive drugs also directly damage DNA or inhibit its repair, thereby activating DNA damage signaling and DNA repair pathways. More extreme conditions of prolonged exposure or excess damage to DNA, cells or tissues may induce apoptosis and necrosis. Interference with protein synthesis causes endoplasmic reticulum stress and activates the unfolded protein response, resulting in up-regulation of heat shock protein and chaperone gene expression. Increased expression of the cytochrome P450 and other phase I drug metabolism enzymes occurs when drugs inhibit or overwhelm their chemical modification activities. More severe and complex phenomena result when drugs inhibit fatty acid and lipid metabolism (β -oxidation) including the lipid storage disorders of steatosis, cholestasis and phospholipidosis. Toxic responses to drugs in immune system cells bring about immunotoxicity and immunosuppression. Using digital RNA sequencing, the expression of 370 genes with established roles in molecular toxicology response pathways can be analyzed with this primer pool.

For further details, consult the *QIAseq Targeted RNA Panel Handbook*.

Panel is enough for 12 samples.

Shipping and storage

QIAseq Targeted RNA Panels are shipped in two boxes: box 1 of 2 is shipped on dry ice and box 2

of 2 is shipped on blue ice. For long-term storage, keep the contents of box 1 at -20°C and the contents of box 2 at 4°C . If stored under these conditions, the panels are stable for 8 months after receipt.

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



Panel Contents

Contents	Volume
RNase-free water	1000 μ l
Control P2	12 μ l
Buffer GE	24 μ l
RE3 Reverse Transcriptase Mix	24 μ l
5x Buffer BC3	48 μ l
QIaseq RNA 5x Buffer	300 μ l
HotStarTaq DNA Polymerase (6U / μ l)	60 μ l
RS2 Primer (10 μ M)	20 μ l
BC Primer Mix	80 μ l
LA Primer Mix	80 μ l
QIaseq Beads	4 ml

Gene table: QIaseq Targeted RNA Panels

Gene symbol	Gene symbol	Gene symbol	Gene symbol
9430015G10Rik	Aass	Abcb1a	Abcb1b
Abcb4	Abcc1	Abcc2	Abcc3
Abl1	Acaa1a	Acaa2	Acaca
Acad11	Acad9	Acadl	Acadm
Acads	Acadsb	Acadvl	Acat1
Acat2	Acly	Aco1	Aco2
Acot12	Acot2	Acot3	Acot6
Acot7	Acot8	Acot9	Acox1
Acox2	Acox3	Adh1	Adk
Ahr	Ahsg	Akt1	Alb
Aldh1a1	Aldh2	Amfr	Apaf1
Apex1	Apoe	Apof	Aqp4
Asah1	Asns	Atf4	Atf6
Atm	Atp6v1g2	Atp8b1	Bad
Bak1	Bax	Bcl2	Bcl2l1
Bcl2l11	Bid	Birc3	Bmf
Brca1	Brca2	C3	C9
Casp1	Casp2	Casp3	Casp7
Casp8	Casp9	Cat	Cd19
Cd36	Cd4	Cd40	Cd40lg
Cd44	Cd80	Cd86	Cd8a
Cdkn1a	Ces2c	Cflar	Chek1
Chek2	Commd4	Comt	Cox6b1
Cox7a2	Cox8a	Cpt1a	Cpt1b
Cpt2	Crat	Crot	Cryaa
Cryab	Cs	Csf2	Ctsb

Gene symbol	Gene symbol	Gene symbol	Gene symbol
Ctse	Cyc1	Cyld	Cyp1a1
Cyp1a2	Cyp2d22	Cyp2e1	Cyp3a11
Cyp4a14	Cyp7a1	Cyp7b1	Ddit3
Defb1	Derl1	Dhcr24	Dlat
Dld	Dlst	Dnaja1	Dnaja2
Dnaja3	Dnajb1	Dnajb6	Dnajc3
Dnajc5	Dnajc6	Dnm1	Dpysl4
Duox1	Duox2	Echs1	Edem1
Edem3	Ehhadh	Eif2ak3	Eif5b
Eno1	Ep300	Ephx1	Epx
Erccl	Erccl2	Erccl3	Erccl5
Erccl6	Ernl2	Ero1l	Ero1lb
Esd	Esr1	F2	Fabp1
Fadd	Fas	Fasl	Fasn
Fbrsl1	Fbxo6	Fh1	Fmo2
Fmo3	Fmo4	Fmo5	Foxl1
Gadd45a	Galnt5	Gcdh	Gpd1
Gpt	Gpx1	Gpx2	Gpx3
Gpx4	Gpx5	Gpx6	Gpx7
Grb2	Gsta3	Gstm4	H2-Eb1
Haoa	Hadha	Hadhb	Herpud1
Hpn	Hpx	Hrg	Hsf1
Hsf2	Hsp90aa1	Hsp90ab1	Hspa1a
Hspa1l	Hspa2	Hspa4	Hspa5
Hspa8	Hspa9	Hspb1	Hspb2
Hspb6	Hspb7	Hspb8	Hspbap1
Hspd1	Hspe1	Hsph1	Htra2
Htra4	Icam1	ldh1	ldh2
ldh3a	ldh3b	ldh3g	lfng
ll10	ll13	ll1a	ll1b
ll2	ll2ra	ll4	ll5
ll6	Inhbe	Irf6	ltgax
Jag1	Jph3	Kcnil1	Khk
Klf1	Lig4	Lmna	Lpl
Lss	Ly6d	Lyz2	Mag
Manba	Maoa	Maob	Map3k2
Mapk8	Mbtpl1	Mbtpl2	Mcl1
Mdh1	Mdh1b	Mdh2	Mdm2
Metap2	Mgmt	Mki67	Mlh1
Mlx	Mpo	Mrps18b	Msh2
Msmo1	Mtllp	Nfkb1	Nploc4
Nqo1	Nr0b2	Nr1h4	Nr5a2
Nucb1	Nudt1	Nudt13	Nudt15
Nup210	Ogdhl	Olfr1404	Os9

Gene symbol	Gene symbol	Gene symbol	Gene symbol
Parp1	Parp2	Pcca	Pcna
Pdyn	Pfdn5	Pnpla3	Pon1
Por	Pou3f3	Ppara	Pparg
Ppie	Ppil2	Ppp1r15b	Prdx1
Prdx6	Prkdc	Ptgs2	Ptprc
Pvr	Rab25	Rad51	Rdx
Retn	Rfx1	S100a7a	S100a8
Scd1	Sdha	Sdhb	Sdhc
Sdhd	Sec62	Sel1l	Serp1
Serpina3k	Serpina3n	Slc10a1	Slc2a3
Slc51a	Slc51b	Slco1a4	Smpd1
Sod1	Spata2	Srebf1	Stbd1
Sucla2	Suclg1	Suclg2	Sycp2
Syt1	Syvn1	Tagln	Tcp1
Tff3	Tgfb1	Thap3	Timm10b
Tmem57	Tnf	Tnfaip8l1	Tnfrsf10b
Tnfrsf1a	Tnfsf10	Tpo	Trim10
Trp53	Txnip	Txn14b	Txnrd2
Ube2g2	Ubqln2	Ubxn4	Ucp1
Ucp2	Ucp3	Ugt1a1	Ugt2a1
Ugt2b1	Uox	Vcp	Vimp
Wipi1	Xbp1	Xiap	Xpa
Xpc	Xrcc1	Xrcc5	Zbtb22
Zfp446	_GDC_CONTROL_MUS_01_	_GDC_CONTROL_MUS_02_	_GDC_CONTROL_MUS_03_
_GDC_CONTROL_MUS_08_	_GDC_CONTROL_MUS_09_		

Ordering Information

Product	Contents	Cat. no.
QIAseq Targeted RNA Panel (12)	Kit containing reagents for first strand synthesis, molecular barcoding, gene-specific amplification and QIAseq Beads for targeted RNA sequencing; fixed panel for 12 samples	333002
QIAseq Targeted RNA Panel (96)	Kit containing reagents for first strand synthesis, molecular barcoding, gene-specific amplification and QIAseq Beads for targeted RNA sequencing; fixed panel for 96 samples	333005
QIAseq Targeted RNA Extended Panel (12)	Kit containing reagents for first strand synthesis, molecular barcoding, gene-specific amplification and QIAseq Beads for targeted RNA sequencing; extended panel for 12 samples	333012
QIAseq Targeted RNA Extended Panel (96)	Kit containing reagents for first strand synthesis, molecular barcoding, gene-specific amplification and QIAseq Beads for targeted RNA sequencing; extended panel for 96 samples	333015
QIAseq Targeted RNA Custom Panel (12)	Kit containing reagents for first strand synthesis, molecular barcoding, gene-specific amplification and QIAseq Beads for targeted RNA sequencing; custom panel for 12 samples	333022
QIAseq Targeted RNA Custom Panel (96)	Kit containing reagents for first strand synthesis, molecular barcoding, gene-specific amplification and QIAseq Beads for targeted RNA sequencing; extended panel for 96 samples	333025
QIAseq Targeted RNA Custom Panel (384)	Kit containing reagents for first strand synthesis, molecular barcoding, gene-specific amplification and QIAseq Beads for targeted RNA sequencing; extended panel for 384 samples	333027
QIAseq Targeted RNA 12-index I (48)	Box containing oligos, enough for a total of 48 samples (for indexing up to 12 samples per run) and Custom Sequencing Primer for targeted RNA sequencing on Illumina platforms	333114
QIAseq Targeted RNA 96-index I (384)	Box containing oligos, enough for a total of 384 samples (for indexing up to 96 samples per run) and Custom Sequencing Primer for targeted RNA sequencing on Illumina platforms	333117
QIAseq Targeted RNA 96-index HT I (384)	Box containing oligos in arrays, enough for a total of 384 samples (for indexing up to 96 samples per	333127

Product	Contents	Cat. no.
	run) and Custom Sequencing Primer for targeted RNA sequencing on Illumina platforms	
QIAseq Targeted RNA 12-index L (48)	Box containing oligos, enough for a total of 48 samples (for indexing up to 12 samples per run) for targeted RNA sequencing on Ion Torrent platforms	333214
QIAseq Targeted RNA 96-index HT L (384)	Box containing oligos, enough for a total of 384 samples (for indexing up to 96 samples per run) for targeted RNA sequencing on Ion Torrent platforms	333217

QIAseq Targeted RNA 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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