

# QIAseq Targeted RNA Panels

## Human Stem Cell & Differentiation Markers

Cat. no. 333002 RHS-008Z-12

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

The Human Stem Cell & Differentiation Markers QIAseq targeted RNA panel profiles the expression of 293 genes involved in stem cell biology, pluripotency, lineage commitment and terminal differentiation. Embryonic stem cells (ESCs) and induced pluripotent stem cells (iPSCs) hold great potential in treating diseases and injuries. While iPSCs generated from adult somatic cells avoid ethical issues associated with ESC use, the two cell types have proven not to be functionally identical and developing these cells into safe therapeutic agents requires a better understanding of the control mechanisms for cell lineage commitment and differentiation. Mesenchymal stem cells (MSCs) are a third class of multipotent cells that may be a valuable resource for regenerative medicine as they are easily isolated and expanded in vitro. Protocols for cell isolation, induction and maintenance of pluripotency and subsequent differentiation into the myriad somatic cell types are constantly being refined, and several classes of genes must be analyzed simultaneously in order to properly characterize the resulting lines. This panel contains genes relevant to iPSC generation including iPSC reprogramming factors and markers of commonly used somatic cells. Also included are specific markers of ESCs and iPSCs and their early differentiation into germ layers, genes involved in maintaining pluripotency, markers of progenitor and multipotent cells including MSC-specific genes, as well as markers of 39 terminally differentiated cell types. Using digital RNA sequencing, the expression of a broad spectrum of genes involved in pluripotent and multipotent stem cell biology, lineage commitment, and terminal differentiation 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  $-20^{\circ}\text{C}$  and the contents of box 2 at  $4^{\circ}\text{C}$ . 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.



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Sample to Insight

## Panel Contents

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

## Gene table: QIAseq Targeted RNA Panels

Gene symbol	Gene symbol	Gene symbol	Gene symbol
ACAN	ACTA2	ACTC1	ADGRE1
ADIPOQ	AICDA	ALB	ALCAM
ALDH1A1	ALDH2	ALPL	ANPEP
ANXA5	APC	APOH	AQP1
AQP2	BDNF	BGLAP	BMP2
BMP4	BMP6	BMP7	BRIX1
C16orf13	CALCR	CASP3	CAV3
CCNA2	CCNE1	CCR5	CD34
CD3E	CD44	CD79A	CD9
CDC42	CDH1	CDH2	CDH5
CDK1	CHAT	CHD1	CHD7
CNOT3	COL10A1	COL1A1	COL2A1
COL9A1	COMP	CPA1	CSF2
CSF3	CTNNB1	CTSK	CXCR4
CYP27B1	DCN	DCX	DES
DLL4	DNMT3B	DPP4	DPPA2
DPPA3	DPPA4	DPPA5	EFNB2
EGF	EMX2	EN2	ENG
ENO1	EP300	ERBB2	ESRRB
ETV2	FABP4	FABP7	FBRSL1
FGF10	FGF2	FGF4	FGF5
FGFR1	FLII	FOXA1	FOXA2
FOXD3	FOXC1	FUT1	FUT4
FZD9	G6PC	GABRB3	GAD1
GAD2	GALC	GATA1	GATA2
GATA4	GATA6	GBX2	GCG

Gene symbol	Gene symbol	Gene symbol	Gene symbol
GDF15	GDF3	GDF5	GDF6
GDF7	GFAP	GHRL	GJA1
GJB2	GRB7	GSC	GTF3A
HAND1	HAND2	HAT1	HDAC1
HDAC2	HES5	HGF	HNF1A
HNF4A	HSPA9	IBSP	ICAM1
IFNG	IGF1	IGF2	IL10
IL1B	IL6	INS	ISL1
ITGA6	ITGAM	ITGAV	ITGAX
ITGB1	ITGB4	JAG1	KAT2A
KAT2B	KAT5	KAT7	KAT8
KDR	KIAA0586	KITLG	KLF4
KRT1	KRT10	KRT14	KRT15
KRT19	LEFTY1	LEFTY2	LIF
LIN28A	LYVE1	MAFA	MAFB
MAP2	MAP3K12	MAP3K2	MBP
MCAM	MEIS1	MESP1	MIOX
MIXL1	MMP2	MSLN	MYBL2
MYC	MYCN	MYH1	MYH11
MYH6	MYH7	MYL3	MYOD1
NANOG	NAT1	NCAM1	NEFH
NES	NEUROD1	NEUROG2	NGFR
NKX2-2	NKX2-5	NODAL	NOTCH1
NPHS2	NPPA	NR0B1	NR2F2
NR5A2	NR6A1	NRP1	NRP2
NT5E	NUDT6	NUMB	OLIG2
OTX2	PAF1	PARD6A	PAX6
PDE6B	PDGFRA	PDGFRB	PECAM1
PIGS	PMEL	PODXL	POU3F4
POU4F2	POU5F1	PPARG	PPIE
PPIL2	PPY	PRDM14	PROM1
PROX1	PTCRA	PTK2	PTPRC
RCVRN	REST	RFX1	RHOA
RIF1	RLBP1	RUNX1	RUNX2
RYR2	SALL4	SCN1A	SFTPB
SFTPC	SFTPD	SLC17A5	SLC17A6
SLC17A7	SLC2A2	SLC32A1	SMAD1
SMAD2	SMAD3	SMAD4	SMTN
SMURF1	SMURF2	SOX15	SOX17
SOX2	SOX3	SOX7	SOX9
SST	STAT3	SYCP3	T
TAGLN	TAL1	TAT	TBX3
TBX5	TCF3	TCL1A	TDGF1
TEK	TERT	TGFB1	TGFB3

<b>Gene symbol</b>	<b>Gene symbol</b>	<b>Gene symbol</b>	<b>Gene symbol</b>
TH	THAP11	THAP3	THY1
TNF	TP53	TRIM28	TUBB3
TYR	TYRP1	UMOD	UTF1
VCAM1	VEGFA	VIM	VWF
WNT3A	ZBTB22	ZFP42	ZFX
ZIC1	ZNF446	_GDC_CONTROL_06_	_GDC_CONTROL_07_
_GDC_CONTROL_14_	_GDC_CONTROL_21_	_GDC_CONTROL_24_	_GDC_CONTROL_32_



## 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.

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at [www.qiagen.com](http://www.qiagen.com) or can be requested from QIAGEN Technical Services or your local distributor.

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Sample to Insight