

## TaqMan® Human Protein Kinase Array

This array is part of a collection of TaqMan® Gene Signature Arrays that enable analysis of hundreds of TaqMan® Gene Expression Assays on a micro fluidic card with minimal effort.

Protein kinases are one of the largest families of genes in eukaryotes. They belong to one superfamily containing a eukaryotic protein kinase catalytic domain. The ability of kinases to reversibly phosphorylate and regulate protein function has been a subject of intense investigation. Kinases are responsible for most of the signal transduction in eukaryotic cells, affecting cellular processes including metabolism, angiogenesis, hemopoiesis, apoptosis, transcription and differentiation. Protein kinases are also involved in functioning of the nervous and immune systems, in physiologic responses and in development. Imbalances in signal transduction due to accumulation of mutations or genetic alterations have been shown to result in malignant transformation. Tyrosine protein kinases have been linked to cancer, resulting in the development of more than ten specific protein tyrosine kinase inhibitors.

There are 519 protein kinases in the human genome, which have been classified into groups, families and subfamilies (Manning, G. et al, 2002). The TaqMan Human Protein Kinase Array contains assays for 68 human kinases. Fifty-three of

these kinases are from receptor protein-tyrosine kinase (RPTK) families: EGFR, InsulinR, PDGFR, VEGFR, FGFR, CCK, NGFR, HGFR, EphA, AXL, TIE, RYK, DDR, RET, ROS, LTK, ROR and MUSK. The remaining 15 kinases are Ser/Thr kinases from the kinase families: CAMKL, IRAK, Lmr, RIPK and STKR.

We have also selected assays for 26 non-kinase genes in the Human Protein Kinase Array. These genes are involved in signal transduction and mediate protein-protein interaction, transcriptional regulation, neural development and cell adhesion.

### References:

- Manning, G., Whyte, D.B., Martinez, R., Hunter, T., and Sudarsanam, S. 2002. The Protein Kinase Complement of the Human Genome. *Science* 298:1912–34.
- Blume-Jensen, P. and Hunter, T. 2001. Oncogenic kinase signalling. *Nature* 411:355–365.
- Trueb, B., Zhuang, L., Taeschler, S., and Wiedemann, M. September 5, 2003. Characterization of FGFR1, a novel fibroblast growth factor (FGF) receptor preferentially expressed in skeletal tissues. *J Biol Chem.* 278(36):33857–65. Epub 2003 Jun 17.

Gene Signature Array Name	# of Targets/Controls	Format	Pack Size	Part Number
Human Protein Kinase Array	94/2	Format 96a	4 arrays/pack	4367784

Human Protein Kinase Array

A	ACVR1	ACVR1B	ACVR1C	ACVR2A	ACVR2B	ACVRL1	AMHR2	BMPR1B	BMPR2	IRAK1	18S	LMTK2	LRDD	LRRC17	LRRC2	LRRC28	BHLHB8	PASK	PPIL5	RIPK2	RSU1	SLIT1	SLIT2	SLIT3	1
B	SLITRK6	TGFBF1	TGFBF2	ALK	AXL	CSF1R	DDR1	DDR2	EGFR	EPHA1	EPHA2	EPHA3	EPHA4	EPHA5	EPHA7	EPHA8	EPHB1	EPHB2	EPHB3	EPHB4	EPHB6	ERBB2	ERBB3	ERBB4	
C	FGFR1	FGFR2	FGFR3	FGFR4	FGFRL1	FLT3	FLT4	GFRA1	GFRA2	GFRA3	GFRA4	IGF1R	INSR	INSRR	KDR	KIT	LTBP1	LTBP4	LTK	MERTK	MET	MST1R	MUSK	NTRK1	2
D	NTRK2	NTRK3	PDGFRA	PDGFRB	PLXNA1	PLXNA2	PLXNA3	PLXNA4A	PLXNB1	PLXNB2	PLXNB3	PLXNC1	PLXND1	PTK7	RET	ROR1	NULL	ROS1	RYK	STYK1	TEK	TIE1	TYRO3	GAPDH	
E	ACVR1	ACVR1B	ACVR1C	ACVR2A	ACVR2B	ACVRL1	AMHR2	BMPR1B	BMPR2	IRAK1	18S	LMTK2	LRDD	LRRC17	LRRC2	LRRC28	BHLHB8	PASK	PPIL5	RIPK2	RSU1	SLIT1	SLIT2	SLIT3	3
F	SLITRK6	TGFBF1	TGFBF2	ALK	AXL	CSF1R	DDR1	DDR2	EGFR	EPHA1	EPHA2	EPHA3	EPHA4	EPHA5	EPHA7	EPHA8	EPHB1	EPHB2	EPHB3	EPHB4	EPHB6	ERBB2	ERBB3	ERBB4	
G	FGFR1	FGFR2	FGFR3	FGFR4	FGFRL1	FLT3	FLT4	GFRA1	GFRA2	GFRA3	GFRA4	IGF1R	INSR	INSRR	KDR	KIT	LTBP1	LTBP4	LTK	MERTK	MET	MST1R	MUSK	NTRK1	4
H	NTRK2	NTRK3	PDGFRA	PDGFRB	PLXNA1	PLXNA2	PLXNA3	PLXNA4A	PLXNB1	PLXNB2	PLXNB3	PLXNC1	PLXND1	PTK7	RET	ROR1	NULL	ROS1	RYK	STYK1	TEK	TIE1	TYRO3	GAPDH	
I	ACVR1	ACVR1B	ACVR1C	ACVR2A	ACVR2B	ACVRL1	AMHR2	BMPR1B	BMPR2	IRAK1	18S	LMTK2	LRDD	LRRC17	LRRC2	LRRC28	BHLHB8	PASK	PPIL5	RIPK2	RSU1	SLIT1	SLIT2	SLIT3	5
J	SLITRK6	TGFBF1	TGFBF2	ALK	AXL	CSF1R	DDR1	DDR2	EGFR	EPHA1	EPHA2	EPHA3	EPHA4	EPHA5	EPHA7	EPHA8	EPHB1	EPHB2	EPHB3	EPHB4	EPHB6	ERBB2	ERBB3	ERBB4	
K	FGFR1	FGFR2	FGFR3	FGFR4	FGFRL1	FLT3	FLT4	GFRA1	GFRA2	GFRA3	GFRA4	IGF1R	INSR	INSRR	KDR	KIT	LTBP1	LTBP4	LTK	MERTK	MET	MST1R	MUSK	NTRK1	6
L	NTRK2	NTRK3	PDGFRA	PDGFRB	PLXNA1	PLXNA2	PLXNA3	PLXNA4A	PLXNB1	PLXNB2	PLXNB3	PLXNC1	PLXND1	PTK7	RET	ROR1	NULL	ROS1	RYK	STYK1	TEK	TIE1	TYRO3	GAPDH	
M	ACVR1	ACVR1B	ACVR1C	ACVR2A	ACVR2B	ACVRL1	AMHR2	BMPR1B	BMPR2	IRAK1	18S	LMTK2	LRDD	LRRC17	LRRC2	LRRC28	BHLHB8	PASK	PPIL5	RIPK2	RSU1	SLIT1	SLIT2	SLIT3	7
N	SLITRK6	TGFBF1	TGFBF2	ALK	AXL	CSF1R	DDR1	DDR2	EGFR	EPHA1	EPHA2	EPHA3	EPHA4	EPHA5	EPHA7	EPHA8	EPHB1	EPHB2	EPHB3	EPHB4	EPHB6	ERBB2	ERBB3	ERBB4	
O	FGFR1	FGFR2	FGFR3	FGFR4	FGFRL1	FLT3	FLT4	GFRA1	GFRA2	GFRA3	GFRA4	IGF1R	INSR	INSRR	KDR	KIT	LTBP1	LTBP4	LTK	MERTK	MET	MST1R	MUSK	NTRK1	8
P	NTRK2	NTRK3	PDGFRA	PDGFRB	PLXNA1	PLXNA2	PLXNA3	PLXNA4A	PLXNB1	PLXNB2	PLXNB3	PLXNC1	PLXND1	PTK7	RET	ROR1	NULL	ROS1	RYK	STYK1	TEK	TIE1	TYRO3	GAPDH	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Port

More arrays will be available soon! Register to receive new Gene Signature Array product announcements, or suggest an array at [taqmanarray.appliedbiosystems.com](http://taqmanarray.appliedbiosystems.com)

For Research Use Only. Not for use in diagnostic procedures.

Practice of the patented 5' Nuclease Process requires a license from Applied Biosystems. The purchase of TaqMan® Human Protein Kinase Array includes an immunity from suit under patents specified in the product insert to use only the amount purchased for the purchaser's own internal research when used with the separate purchase of an Authorized 5' Nuclease Core Kit. No other patent rights are conveyed expressly, by implication, or by estoppel. For further information on purchasing licenses contact the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster City, California 94404, USA.

The TaqMan® Array is covered by U.S. Patents Nos. 6,514,750, 6,942,837, 7,211,443, and 7,235,406. Micro Fluidic Card developed in collaboration with 3M Company.

© Copyright 2008. Applied Biosystems. All rights reserved. Applied Biosystems, and AB (Design) are registered trademarks of Applied Biosystems or its subsidiaries in the US and/or certain other countries. TaqMan is a registered trademark of Roche Molecular Systems, Inc.

Printed in the USA, 03/2008 Publication 127MI53-02



**Headquarters**  
 850 Lincoln Centre Drive | Foster City, CA 94404 USA  
 Phone 650.638.5800 | Toll Free 800.345.5224  
[www.appliedbiosystems.com](http://www.appliedbiosystems.com)

**International Sales**  
 For our office locations please call the division headquarters or refer to our Web site at  
[www.appliedbiosystems.com/about/offices.cfm](http://www.appliedbiosystems.com/about/offices.cfm)