

VOLUME 1, 2014 - UPDATE

Drug Discovery Products & Services

Functional assays for better
decisions, faster.



Products and Services for Target Profiling and Liability Testing



Merck Millipore's Drug Discovery & Development products and services are dedicated to helping you advance those compounds that have the highest chance of being clinically effective and safe—as quickly as possible. Whether you're looking to outsource or bring the newest technologies in-house, optimize lead compounds or investigate cardiac safety effects, we can help you generate detailed information about your compounds early in the drug discovery cycle.

We offer many benefits you won't get anywhere else:

- Flexible access to all the major targets, enabling balanced, cross-target profiling.
- Functional assays provide more information, sensitivity, and biological relevance.
- Our robust, off-the-shelf cell lines and kits eliminate in-house assay development.
- FlexLabSM custom services expand your capacity and capabilities, cost-effectively.
- Early safety assessment across a range of targets.
- Convenient, integrated ordering and invoicing, standardized across the world.
- 1-week turnaround time for KinaseProfiler™ Service for full panels, custom panels and IC₅₀ studies. (See page 13)

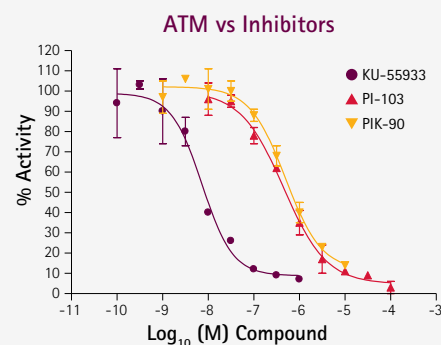
New In This Issue:

IonFlux™ High-Throughput Electrophysiology Platform

- Voltage and ligand-gated target screening
 - Enhanced fluidics with continuous perfusion
- (See page 11)

Ataxia telangiectasia mutated (ATM) enzyme

- Full length, active, pure enzyme
- Expressed in mammalian cell culture
- Compound activity screening services (See page 12)



Many new targets and assays:
Look for • symbol throughout

What's inside

Cells, Membrane Preps and
Selectivity Profiling Services for:

GPCRs	04
Ion Channels	09
Kinases & Phosphatases	12
HTRF® Lipid Kinase Assay Kits	15
Safety and Liability Screening	16
Ubiquitin	18
SignalProfiler™	19

HepaRG™ Cells	22
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Specialty Services:

FlexLab SM	23
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Cells, Membrane Preps and Selectivity Profiling Services

Merck Millipore has developed proprietary technologies to enhance the functional expression of GPCRs while enabling for a single functional readout, regardless of G protein-coupling status.

This technology is the foundation of our robust and reliable GPCR products and services.

GPCR Targets

GPCR Family	GPCR (Human unless noted)	GPCRProfiler® Service Panel (HTS600GPCR)	ChemiScreen™ Calcium-optimized Cell Lines	ChemiScreen™ Membrane Preparations	Ready-to-Assay™ Frozen Cells	ChemiBrite™ Stable Cell Lines	ChemiBrite™ Frozen Cells
Acetylcholine (muscarinic)	M1	✓	HTS044C	HTS044M	HTS044RTA		
Acetylcholine (muscarinic)	M2	✓	HTS115C	HTS115M	HTS115RTA		
Acetylcholine (muscarinic)	M3	✓	HTS116C	HTS116M	HTS116RTA		
Acetylcholine (muscarinic)	M4	✓	HTS117C		HTS117RTA		
Acetylcholine (muscarinic)	M5	✓	HTS075C	HTS075M	HTS075RTA		
Adenosine	A1	✓	HTS047C	HTS047M	HTS047RTA		
Adenosine	A2A	✓				HTS048L	
Adenosine	A2B	✓	HTS051C		HTS051RTA		
Adenosine	A3	✓	HTS052C	HTS052M	HTS052RTA		
Adrenergic	α1A	✓	HTS087C	HTS087M	HTS087RTA		
Adrenergic	α2A	✓	HTS096C	HTS096M	HTS096RTA		
Adrenergic	α1B	✓	HTS158C	HTS158M	HTS158RTA		
Adrenergic	α2B	✓		HTS157M		HTS157L	
Adrenergic	α2C	✓	HTS235C				
Adrenergic	α1D	✓	HTS216C	HTS216M	HTS216RTA		
Adrenergic	β1	✓	HTS104C	HTS104M	HTS104RTA		
Adrenergic	β2	✓	HTS073C	HTS073M	HTS073RTA		
Adrenergic	β3	✓	HTS159C	HTS159M	HTS159RTA		
α-Ketoglutarate	OXGR1/GPR99	✓	HTS191C		HTS191RTA		
Anaphylotoxin	C3aR	✓	HTS016C	HTS016M	HTS016RTA		
Anaphylotoxin	C5aR	✓	HTS017C	HTS017M	HTS017RTA		
Angiotensin	AT1	✓	HTS064C	HTS064M	HTS064RTA		
Angiotensin	AT2			HTS208M			
Apelin	APJ	✓	HTS068C	HTS068M	HTS068RTA		
Bile Acid	GPBA/GPR131/TGR5	✓				HTS238L	
Bombesin	BB1	✓	HTS123C	HTS123M	HTS123RTA		
Bombesin	BB2	✓	HTS084C	HTS084M	HTS084RTA		
Bombesin	BB3	✓	HTS160C	HTS160M	HTS160RTA		
Bradykinin	B2	✓	HTS041C	HTS041M	HTS041RTA		
Calcitonin	AMY1			HTS127M			
Calcitonin	CGPR1	✓	HTS172C	HTS172M	HTS172RTA		
Calcium sensor	CaS	✓	HTS137C		HTS137RTA		
Cannabinoid	CB1	✓	HTS019C	HTS019M	HTS019RTA		
Cannabinoid	CB2	✓	HTS020C	HTS020M/ HTS020M2	HTS020RTA		
Chemoattractant	ChemR23	✓	HTS071C	HTS071M	HTS071RTA		
Chemokine	CCR1	✓	HTS005C	HTS005M	HTS005RTA		
Chemokine	CCR10	✓	HTS014C	HTS014M	HTS014RTA		
Chemokine	CCR2B	✓	HTS007C	HTS007M	HTS007RTA		
Chemokine	CCR3	✓	HTS008C	HTS008M	HTS008RTA		
Chemokine	CCR4	✓	HTS009C	HTS009M			
Chemokine	CCR5, rhesus macaque	✓	HTS010C	HTS010M	HTS010RTA		

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GPCR Family	GPCR (Human unless noted)	GPCRProfile® Service Panel (HTS600GPCR)	ChemiScreen™ Calcium-optimized Cell Lines	ChemiScreen™ Membrane Preparations	Ready-to-Assay™ Frozen Cells	ChemiBrite™ Stable Cell Lines	ChemiBrite™ Frozen Cells
Chemokine	CCR6	✓	HTS011C	HTS011M	HTS011RTA		
Chemokine	CCR7	✓	HTS012C	HTS012M	HTS012RTA		
Chemokine	CCR8	✓	HTS013C	HTS013M	HTS013RTA		
Chemokine	CCR9	✓	HTS036C	HTS036M	HTS036RTA		
Chemokine	CX3CR1	✓	HTS015C	HTS015M	HTS015RTA		
Chemokine	CXCR1	✓	HTS001C	HTS001M	HTS001RTA		HTS001LT
Chemokine	CXCR2	✓	HTS002C	HTS002M	HTS002RTA		
Chemokine	CXCR3	✓	HTS003C	HTS003M	HTS003RTA	HTS003L	
Chemokine	CXCR4	✓	HTS004C	HTS004M	HTS004RTA		HTS004LT
Chemokine	CXCR5	✓	HTS055C	HTS055M	HTS055RTA		
Chemokine	CXCR6	✓	HTS054C	HTS054M	HTS054RTA		
Chemokine	CXCR7 / RDC1			HTS138M			
Chemokine	XCR1 / GPR5	✓	HTS053C		HTS053RTA		
Cholecystokinin	CCK1	✓	HTS184C	HTS184M	HTS184RTA		
Cholecystokinin	CCK2	✓	HTS083C	HTS083M	HTS083RTA		
CRF Receptor	CRF1	✓	HTS023C	HTS023M	HTS023RTA		
CRF Receptor	CRF2	✓	HTS024C	HTS024M	HTS024RTA		
Dopamine	D1	✓	HTS102C	HTS102M	HTS102RTA		HTS102LT
Dopamine	D2L	✓	HTS039C/ HTS039C2	HTS039M	HTS039RTA		HTS039LT
Dopamine	D3			HTS103M			
Dopamine	D4	✓	HTS223C	HTS223M	HTS223RTA		
Dopamine	D5	✓	HTS129C	HTS129M	HTS129RTA		
Endothelin	ETA	✓	HTS070C	HTS070M	HTS070RTA		
Endothelin	ETB	✓	HTS046C	HTS046M	HTS046RTA		
Free Fatty Acid	GPR40	✓				HTS038L	
Free Fatty Acid	GPR41	✓	HTS135C	HTS135M	HTS135RTA		
Free Fatty Acid	GPR43	✓	HTS063C	HTS063M	HTS063RTA		
Free Fatty Acid	GPR120	✓				HTS225L	
GABAB	GABAB1bβ	✓	HTS119C	HTS119M	HTS119RTA		
Galanin	GAL1	✓	HTS094C	HTS094M	HTS094RTA		
Galanin	GAL2	✓	HTS186C	HTS186M	HTS186RTA		
Ghrelin	Ghrelin / GHSR-1a	✓	HTS187C	HTS187M	HTS187RTA		
Glucagon	GIP	✓	HTS134C	HTS134M	HTS134RTA		HTS134LT
Glucagon	GLP-1	✓	HTS163C/ HTS163C2	HTS163M	HTS163RTA	HTS163L	HTS163LT
Glucagon	GLP-2	✓	HTS164C		HTS164RTA		
Glucagon	glucagon	✓	HTS112C	HTS112M	HTS112RTA		HTS112LT
Glucagon	secretin receptor	✓	HTS174C		HTS174RTA		
Glutamate (metabotropic)	mGlu1	✓	HTS145C		HTS145RTA		
Glutamate (metabotropic)	mGlu2	✓	HTS146C	HTS146M	HTS146RTA		
Glutamate (metabotropic)	mGlu6			HTS149M	HTS233RTA		
Glycoprotein hormone	LH	✓				HTS233L	HTS233LT ●





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Glycoprotein hormone	FSH	✓				HTS178L	HTS178LT ●
Glycoprotein hormone	TSH	✓	HTS133C		HTS133RTA		
GnRH	GnRH	✓	HTS027C	HTS027M	HTS027RTA		
Histamine	H1	✓	HTS050C	HTS050M	HTS050RTA		
Histamine	H2	✓	HTS086C	HTS086M	HTS086RTA		
Histamine	H3	✓	HTS029C		HTS029RTA		
KISS1-derived peptide	KISS1 / GPR54	✓	HTS032C		HTS032RTA		
Leukotriene	BLT1	✓	HTS042C	HTS042M	HTS042RTA		
Leukotriene	CysLT1	✓	HTS061C	HTS061M	HTS061RTA	HTS061L	
Leukotriene	CysLT2	✓	HTS088C		HTS088RTA		
Lysophospholipid	LPA1	✓	HTS089C	HTS089M	HTS089RTA		
Lysophospholipid	LPA2	✓	HTS207C				
Lysophospholipid	LPA3	✓	HTS130C		HTS130RTA		
Lysophospholipid	GPR92 / LPA5	✓	HTS209C		HTS209RTA		
Lysophospholipid	S1P1	✓	HTS176C	HTS176M	HTS176RTA		
Lysophospholipid	S1P2	✓	HTS078C	HTS078M	HTS078RTA		HTS078LT
Lysophospholipid	S1P3	✓	HTS097C	HTS097M	HTS097RTA		
Lysophospholipid	S1P4	✓	HTS192C		HTS192RTA		
Lysophospholipid	S1P5	✓	HTS193C	HTS193M	HTS193RTA		
Mas-related gene	MRGX1 / MRGPRX1	✓	HTS122C	HTS122M	HTS122RTA		
Mas-related gene	MrgD	✓	HTS206C	HTS206M	HTS206RTA		
Mas-related gene	MRGX2 / MGRPLX2	✓	HTS058C		HTS058RTA		
Melanin-concentrating hormone	MCHR1 / GPR24	✓	HTS025C	HTS025M	HTS025RTA		
Melanin-concentrating hormone	MCHR2	✓	HTS026C		HTS026RTA		
Melanocortin	MC1		HTS156C ●	HTS156M	HTS156RTA ●		
Melanocortin	MC2	✓	HTS021C		HTS021RTA		
Melanocortin	MC3			HTS022M			
Melanocortin	MC4	✓	HTS105C	HTS105M			
Melanocortin	MC5	✓	HTS155C	HTS155M	HTS155RTA		
Melatonin	MT1			HTS065M			
Melatonin	MT2			HTS106M			
Motilin	motilin receptor, MTLR	✓	HTS121C	HTS121M	HTS121RTA		
Neuromedin U	NMU1	✓	HTS062C	HTS062M	HTS062RTA		
Neuromedin U	NMU2	✓	HTS098C	HTS098M	HTS098RTA		
Neuropeptide B/W	NPBW1 / GPR7	✓	HTS180C	HTS180M	HTS180RTA		
Neuropeptide B/W	NPBW2 / GPR8			HTS181M			
Neuropeptide Y	Y2	✓	HTS066C	HTS066M	HTS066RTA		
Neuropeptide Y	Y4	✓	HTS204C	HTS204M	HTS204RTA		
Neurotensin	NTR1	✓	HTS034C	HTS034M	HTS034RTA		
N-formylpeptide	FPR1	✓	HTS018C	HTS018M	HTS018RTA		
N-formylpeptide	FPRL1	✓	HTS056C	HTS056M	HTS056RTA		
Nicotinic Acid	TTIP109A	✓	HTS201C	HTS201M	HTS201RTA		
Opioid	δ	✓	HTS100C	HTS100M	HTS100RTA		
Opioid	k	✓ +	HTS095C	HTS095M	HTS095RTA ●		

GPCR Targets

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Opioid	μ	✓	HTS101C	HTS101M	HTS101RTA		
Opioid	NOP/ORL1	✓	HTS040C	HTS040M	HTS040RTA		
Orexin	OX1	✓	HTS175C		HTS175RTA		
Orexin	OX2	✓	HTS045C		HTS045RTA		
Orphan	GPR39	✓	HTS217C		HTS217RTA		
Orphan	GPR119	✓				HTS198L	
Oxytocin	OT	✓	HTS090C	HTS090M	HTS090RTA		
P2Y / Purinergic (metabotropic)	P2Y1	✓	HTS049C		HTS049RTA	HTS049L	
P2Y / Purinergic (metabotropic)	P2Y2	✓	HTS210C		HTS210RTA	HTS210L	
P2Y / Purinergic (metabotropic)	P2Y4	✓	HTS211C		HTS211RTA	HTS211L	
P2Y / Purinergic (metabotropic)	P2Y11	✓	HTS213C			HTS213L	
P2Y / Purinergic (metabotropic)	P2Y12		HTS195C			HTS195L	
Peptide P518	GPR103/QRFP	✓	HTS189C	HTS189M	HTS189RTA		
Platelet Activating Factor	PAF	✓	HTS076C		HTS076RTA		
Prokineticin	PK1	✓	HTS074C	HTS074M	HTS074RTA		
Prokineticin	PK2	✓	HTS182C	HTS182M	HTS182RTA		
Prolactin-releasing peptide	PRP	✓	HTS057C	HTS057M	HTS057RTA		
Prostanoid	CRTH2			HTS031M			
Prostanoid	DP	✓	HTS091C	HTS091M	HTS091RTA	HTS091L	
Prostanoid	EP1	✓	HTS099C	HTS099M	HTS099RTA	HTS099L	HTS099LT
Prostanoid	EP2	✓	HTS185C	HTS185M	HTS185RTA	HTS185L	
Prostanoid	EP3	✓	HTS092C	HTS092M	HTS092RTA	HTS092L	HTS092LT
Prostanoid	EP4	✓	HTS142C	HTS142M	HTS142RTA	HTS142L	
Prostanoid	FP	✓	HTS093C		HTS093RTA		
Prostanoid	IP1	✓	HTS131C		HTS131RTA	HTS131L	
Prostanoid	TP	✓	HTS081C	HTS081M	HTS081RTA	HTS081L	
Protease-activated	PAR2			HTS037M			
Protease-activated	Thrombin and Tryp- sin- activated PARs	✓					
PTH receptor	PTH1	✓	HTS030C	HTS030M	HTS030RTA		
PTH receptor	PTH2	✓	HTS173C		HTS173RTA		
Serotonin	5-HT1A	✓	HTS107C	HTS107RTA			
Serotonin	5-HT1B			HTS108M			
Serotonin	5-HT2A	✓	HTS082C	HTS082M	HTS082RTA		
Serotonin	5-HT2B	✓	HTS109C		HTS109RTA		
Serotonin	5-HT2C	✓	HTS132C	HTS132M	HTS132RTA		
Serotonin	5-HT4		HTS110C	HTS110M	HTS110RTA		
Serotonin	5-HT5A			HTS141M			
Serotonin	5-HT6	✓	HTS111C	HTS111M	HTS111RTA		
Serotonin	5-HT7			HTS215M			
Somatostatin	sst1			HTS170M			

VOTED 

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GPCR Targets

GPCR Family	GPCR (Human unless noted)	GPCRProfiler® Service Panel (HTS600GPCR)	ChemiScreen™ Calcium-optimized Cell Lines	ChemiScreen™ Membrane Preparations	Ready-to-Assay™ Frozen Cells	ChemiBrite™ Stable Cell Lines	ChemiBrite™ Frozen Cells
Somatostatin	sst2	✓	HTS028C	HTS028M	HTS028RTA		
Somatostatin	sst3	✓	HTS171C	HTS171M	HTS171RTA		
Somatostatin	sst4	✓	HTS125C	HTS125M	HTS125RTA		
Somatostatin	sst5	✓	HTS139C	HTS139M	HTS139RTA		
SPC/LPC /proton-sensor	GPR68/OGR1	✓	HTS153C		HTS153RTA		
Succinate	SUCNR1/GPR91	✓	HTS241C		HTS241RTA		
Tachykinin /neurokinin	NK1	✓	HTS080C	HTS080M	HTS080RTA		
Tachykinin /neurokinin	NK2	✓	HTS144C	HTS144M	HTS144RTA		
Tachykinin /neurokinin	NK3	✓	HTS190C		HTS190RTA		
TRH	TRH	✓	HTS126C		HTS126RTA		
Urotensin II	UT / GPR14	✓	HTS033C	HTS033M	HTS033RTA		
Vasopressin	V1A	✓	HTS059C	HTS059M	HTS059RTA		
Vasopressin	V1B	✓	HTS136C	HTS136M	HTS036RTA		
Vasopressin	V2	✓	HTS060C	HTS060M	HTS060RTA		
VIP/PACAP	PAC1 long isoform	✓	HTS114C	HTS114M	HTS114RTA		
VIP/PACAP	VPAC1	✓	HTS043C	HTS043M	HTS043RTA		
VIP/PACAP	VPAC2	✓	HTS079C	HTS079M	HTS079RTA		
CHEM1, parental			HTSCHEM-1	HTS000MC1	HTSCHEM-1RTA		
CHEM2, parental			HTSCHEM-2	HTS000MC2			
CHEM3, parental			HTSCHEM-3		HTSCHEM-3RTA		
CHEM4, parental			HTSCHEM-4				
CHEM5, parental			HTSCHEM-5				
CHEM9, parental			HTSCHEM-9				
CHEM10, parental			HTSCHEM-10				
HEK293, parental						HTSHEK-1L	
HEK293, parental						HTSHEK-2L	
HEK293, parental						HTSHEK-3L	
HEK293, parental						HTSHEK-4L	
HEK293, parental						HTSHEK-5L	
HEK293, parental						HTSHEK-6L	
HEK293T, parental							HTSHEKT-1LT
HEK293T, parental							HTSHEKT-2LT
HEK293T, parental							HTSHEKT-3LT
HEK293T, parental							HTSHEKT-4LT
CHO, parental				HTS000MC		HTSCHO-1L	
U2OS, parental						HTSU20S-1L	

Related Media & Supplements

GPCR Family	Cat. No.
CHEM3 100x Growth Supplement	HTSCHEM-3S

Merck Millipore offers a fully characterized panel of functional profiling assays which employ a variety of PreciSION® ion channel cell lines matched with the IonFlux™ HT, IonWorks® HT/Quattro™, PatchXpress®, and conventional manual electrophysiology platforms.

The cell lines were carefully selected for optimal performance on the IonWorks® instrument thus ensuring a high level of accuracy and precision in the assays.

Our PreciSION® ion channel cell lines can be provided as frozen Ready-to-Assay™ cells to existing license holders, for bulk orders or as a supply agreement.

Ion Channel Targets

Ion Channel	Manual Patch Clamp Service	PatchXpress® Service	IonWorks® Service	FLIPR® Service	NEW IonFlux™ Service	PreciSION® Stable Cell Lines	Ready-to-Assay™ Frozen Cells	CardiacProfiler™ Service on IonWorks® Platform (CYL9000)
Sodium								
hNav1.1	CYL6009MPC		CYL6009QU		○	CLY3009	CYL3009RTA	
hNav1.2	CYL6023MPC		CYL6023QU		○	CLY3032	CYL3023RTA	
hNav1.3	CYL6003MPC		CYL6003QU		○	CLY3003	CYL3003RTA	
hNav1.4	CYL6024MPC		CYL6024QU		○	CLY3024	CYL3024RTA	
hNav1.5	CYL6004MPC	CYL6004PX	CYL6004QU		○	CLY3004	CYL3004RTA	CYL9000
hNav1.6	CYL6010MPC		CYL6010QU		○	CYL3010		
hNav1.7	CYL6011MPC	CYL6011PX	CYL6011QU		○	CLY3011	CYL3011RTA	
hNav1.8/β1	CYL6025MPC	CYL6025PX			○	CYL3025		
rNav1.8	CYL6050MPC	CYL6050PX			○	CYL3050		
Potassium								
hERG-CHO			CYL5038QU			CYL3038	CYL3038RTA	CYL9000
hERG-HEK	CYL5039MPC	CYL5039PX				CYL3039 CYL4039 (MemPrep)		
hKCNQ1/hminK	CYL5007MPC	CYL5007PX ●	CYL5007QU			CYL3007	CYL3007RTA	CYL9000
hKir2.1	CYL5032MPC		CYL5032QU			CYL3032	CYL3032RTA	CYL9000
hKir6.2/SUR2A (KATP)		CYL6099PX				CYL3099		
hKv1.1	CYL6014MPC		CYL6014QU			CYL3014	CYL3014RTA	
hKv1.2	CYL6015MPC		CYL6015QU			CYL3015		
hKv1.3	CYL6016MPC		CYL6016QU			CYL3016	CYL3016RTA	
hKv1.4	CYL6017MPC		CYL6017QU			CYL3017		
hKv1.5	CYL5018MPC		CYL5018QU			CYL3018	CYL3018RTA	CYL9000
hKv1.6	CYL6019MPC		CYL6019QU			CYL3019		
hKv1.7	CYL6020MPC		CYL6020QU			CYL3020		
hKv1.8	CYL6021MPC		CYL6021QU			CYL3021		
hKv2.1	CYL6022MPC		CYL6022HT			CYL3022	CYL3022RTA	
hKv2.1/hKv9.2	CYL6067MPC					CYL3067		
hKv3.1	CYL6043MPC		CYL6043QU			CYL3043		
hKv3.2	CYL6044MPC		CYL6044QU			CYL3044		
hKv3.3	CYL6045MPC		CYL6045QU			CYL3045		
hKv4.2/hKChIP2	CYL6026MPC		CYL6026QU			CYL3026		
hKv4.3/hKChIP1	CYL6027MPC		CYL6027QU			CYL3027		
hKv4.3/hKChIP2	CYL5069MPC		CYL5069QU			CYL3069	CYL3069RTA	CYL9000
hKv7.2/hKv7.3			CYL6059QU ●			CYL3059		
hKv7.3/hKv7.5			CYL3060QU ●			CYL3060		
hKv7.4			CYL3092QU ●			CYL3092		
hKv7.4/hKv7.5			CYL3096QU ●			CYL3096		
hKv12.2			CYL6089QU			CYL3089		

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Ion Channel Targets

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Calcium								
hL-type Calcium	CYL5051MPC		CYL5051QU			Inquire		CYL9000
hN-type Calcium	CYL6054MPC		CYL6054QU			CYL3054		
hT-type Calcium	CYL6075MPC		CYL6075QU			CYL3075		
HCN								
hHCN1	CYL6040MPC	CYL6040PX ●	CYL6040HT			CYL3040		
hHCN2	CYL6041MPC	CYL6041PX	CYL6041HT			CYL3041		
hHCN3	CYL6042MPC		CYL6042QU			CYL3042		
hHCN4	CYL5012MPC	CYL5012PX	CYL5012HT			CYL3012	CYL3012RTA	CYL9000
Ligand Gated								
hASIC3		CYL8055PX				CYL3055		
hCFTR	CYL3088MPC ●					CYL3088		
hGABAA $\alpha 1/\beta 3/\gamma 2$		CYL8053PX	CYL8053QU ●		●	CYL3053	CYL8053RTA ●	
hGABAA $\alpha 2/\beta 3/\gamma 2$ -HEK		CYL8072PX	CYL8072QU ●		○	CYL3072		
hGABAA $\alpha 3/\beta 3/\gamma 2$		CYL8068PX	CYL8068QU ●		○	CYL3068		
hGABAA $\alpha 4/\beta 3/\gamma 2$ -HEK		CYL8085PX	CYL8085QU ●		○	CYL3085		
hGABAA $\alpha 5/\beta 3/\gamma 2$		CYL8073PX	CYL8073QU ●		○	CYL3073		
hGABAA $\alpha 6/\beta 3/\gamma 2$ -HEK		CYL8086PX	CYL8086QU ●		○	CYL3086		
hGluR6		CYL8049PX				CYL3049		
hGlyRA1		CYL8056PX				CYL3056		
hnAChR $\alpha 1/\beta 1/\delta/\epsilon$					○	CYL3052		
hnAChR $\alpha 3/\beta 4$					○	CYL3057		
hnAChR $\alpha 4/\beta 2$		CYL8106PX			○	CYL3106		
hnAChR $\alpha 4/\alpha 6/\beta 2$		CYL8107PX			○	CYL3107		
hnAChR $\alpha 7/\text{ric}3$					●	CYL3097		
TRP								
hTRPA1						CYL3066		
hTRPV1		CYL8063PX				CYL3063		
hTRPV3	CYL3065MPC ●	CYL3065PX ●		CYL8065FL		CYL3065		
hTRPV4		CYL3064PX				CYL3064		

NEW Services on IonFlux™ High-Throughput Electrophysiology Platform

Merck Millipore's cell lines are now paired with the high-fidelity recordings offered by the IonFlux™ HT platform. We offer flexible screening strategies on voltage and ligand-gated targets with enhanced fluidics, continuous perfusion and recording formats with a history of high-success rates. (See pages 9 & 10 for channel availability.)

CardiacProfiler™ Service

The IonChannelProfiler™ Service is offered as a monthly profiling service that allows for the comprehensive functional assessment of drug candidates against hERG, hHCN4, hKCNQ1/hminK, hKir2.1, hKv1.5, hKv4.3/hKChIP2, hNav1.5, and Human L-type Calcium ion channels. Collectively, these cardiac ion channels play a critical role in the normal functioning of the human heart and were chosen to provide a more thorough assessment of the true cardiac liability of drug candidates.

Description	IonWorks® Service
Panel profiling service against hERG, hHCN4, hKCNQ1/hminK, hKir2.1, hKv1.5, hKv4.3/hKChIP2, hNav1.5, and Human L-type Calcium	CYL9000

PrecisION® Recombinant hERG Potassium Ion Channel Membrane Preparation

To compliment our functional assays, Merck Millipore provides membranes for hERG radioligand binding assays. These have been characterized using several different radioligands and provide comparable data found in published literature. While not providing a functional measure of hERG activity, the very high throughput of radioligand binding assays have made this a very useful approach for monitoring potential hERG liability at the earliest phase of drug discovery. Here, the primary aims are to raise flags which could trigger follow-up studies, such as electrophysiological screening.

Description	Species	Background Cell Type	Cell Line Catalog No.
hERG	human	HEK	CYL4039

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Kinase Targets

374 Kinase Products

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Enzyme	Catalogue No.	Kinase Profiler™ Service	Substrate
Abl, active	14-529	✓	12-493, 12-525, 12-539
Abl, active, mouse	14-459	✓	12-493, 12-525, 12-539
Abl (H396P), active	14-750	✓	12-493, 12-525, 12-539
Abl (M351T), active	14-757	✓	12-493, 12-525, 12-539
Abl (Q252H), active	14-751	✓	12-493, 12-525, 12-539
Abl (T315I), active	14-522	✓	12-493, 12-525, 12-539
Abl (Y253F), active	14-759	✓	12-493, 12-525, 12-539
ACK1, active	14-756	✓	
Akt1/PKBα (ΔPH), active	14-341		
Akt1/PKBα (ΔPH, S473D), active	14-453		
Akt1/PKBα, active	14-276	✓	
Akt1/PKBα, unactive	14-279		
Akt1/PKBα-GST, unactivated agarose conj.	14-241		
Akt2/PKBβ (ΔPH, S474D), active	14-339	✓	
Akt3/PKBγ (S472D), active	14-502	✓	
Akt3/PKBγ, unactive	14-416		
ALK, active	14-555	✓	
ALK2, active	○	○	
ALK4, active	14-614	✓	
AMPK (α1, β1, γ1), active	14-840	✓	12-355
AMPK (α2, β1, γ1), active	14-902	✓	12-355
Arg, active, human	14-521	✓	
Arg, active, mouse	14-460	✓	
ARK5, active	14-661	✓	
ASK1, active	14-606	✓	
ATM, active	14-933 ●	✓ ●	118500-10MG, ● 118502-2MG ●
Aurora A, active	14-511	✓	
Aurora B, active	14-835	✓	
Aurora C, active	14-911	✓	

Enzyme	Catalogue No.	Kinase Profiler™ Service	Substrate
Axl, active	14-512	✓	12-516
Blk, active, human	14-517	✓	
Blk, active, mouse	14-316	✓	
Bmx, active	14-499	✓	
B-Raf (V599E), active (aka V600E)	14-557	✓ +	
B-Raf (Δ1-415), active	14-530	✓ +	
Brk, active	14-613	✓	
BrSK1, active	14-675	✓	
BrSK2, active	14-655	✓	
BTk, active	14-552	✓	
BTK (E41K), active	14-773		
BTK (R28H), active	14-765	✓	
CaM Kinase I, active	14-663	✓	12-433, 12-451
CaM Kinase IIβ, active	14-718	✓	12-433, 12-451
CaM Kinase IIγ, active	14-719	✓	12-433, 12-451
CaM Kinase IIδ, active	14-723	✓	12-433, 12-451
CaM Kinase IV, active	14-547	✓	
CaM Kinase Iδ, active	14-731	✓	
CaMKK2, active	14-931 ●	○	
Casein Kinase 1, active, yeast	14-112	✓	12-423, 12-529
Casein Kinase 1γ1, active	14-711	✓	12-423, 12-529
Casein Kinase 1γ2, active	14-712	✓	12-423, 12-529
Casein Kinase 1γ3, active	14-713	✓	12-423, 12-529
Casein Kinase 1δ (aa 1-294), active	14-520	✓	12-423, 12-529
Casein Kinase 2, active	14-197	✓	12-330
Casein Kinase 2α, active	14-445		12-330
Casein Kinase 2α2, active	14-689	✓	12-330
cdk1/cyclin B, active	14-450	✓	
cdk2/cyclin A, active	14-448	✓	
cdk2/cyclin E, active	14-475	✓	
cdk3/cyclin E, active	14-487	✓	
cdk5/p25, active	14-516	✓	
cdk5/p35, active	14-477	✓	
cdk6/cyclin D3, active	14-519	✓	
cdk7/cyclin H/MAT1 (CAK complex), active	14-476	✓	12-526
cdk9/cyclin T1, active	14-685	✓	

Enzyme	Catalogue No.	Kinase Profiler™ Service	Substrate
CHK1, active	14-346	✓	12-373, 12-414
CHK2, active	14-347	✓	12-373, 12-414
CHK2 (I157T), active	14-741	✓	12-373, 12-414
CHK2 (R145W)	14-740	✓	12-373, 12-414
c-Jun (aa 1-169)-GST, soluble	14-195		
c-Kit (D816H), active	14-726	✓	
c-Kit (D816V), active	14-611	✓	
c-Kit (V560G), active	14-730	✓	
c-Kit (V654A), active	14-733	✓	
c-Kit, active	14-559	✓	
CLK1, active	14-920 +	✓ +	
CLK2, active	14-774	✓	
CLK3, active	14-724	✓	
CLK4, active	14-917 +	✓ +	
Cot1, active	14-703		
Crk (aa 120-225)-GST, mouse	14-468		
CSK, active	14-458	✓	
C-TAK1 (cdc25C associated protein kinase)	14-375		
DAPK1, active	14-692	✓	
DAPK2, active	14-657	✓	
DCAMKL2, active	14-716	✓	
DDR2, active	14-579	✓	
DMPK, active	14-649	✓	
DRAK1, active	14-668	✓	
DYRK1A, active	14-435		
DYRK2, active	14-669	✓	
eEF-2K, active	14-654	✓	12-550
EGFR, active	14-531	✓	
EGFR (L858R), active	14-626	✓	
EGFR (L861Q), active	14-627	✓	
EGFR (T790M), active	14-725	✓	
EGFR (T790M, L858R), active	14-721	✓	
EphA1, active	14-653	✓	
EphA2, active	14-560	✓	
EphA3, active	14-644	✓	
EphA4, active	14-574	✓	
EphA5, active	14-639	✓	
EphA7, active	14-672	✓	
EphA8, active	14-673	✓	
EphB1, active	14-674	✓	

● New Release ✓ Service Available + Recently Added ○ Coming Soon

Kinase Targets

Enzyme	Catalogue No.	Kinase Profiler™ Service	Substrate
EphB2, active	14-553	✓	
EphB3, active	14-561	✓	
EphB4, active	14-554	✓	
ErbB2/HER2, active	14-939 ○	○	
ErbB4/HER4, active	14-569	✓	
FAK, active	14-720	✓	
Fer, active	14-605	✓	
FES/FPS, active	14-473	✓	
FGFR1, active	14-582	✓	
FGFR1 (V561M), active	14-734	✓	
FGFR2, active	14-617	✓	
FGFR2 (N549H), active	14-742	✓	
FGFR3, active	14-464	✓	
FGFR4, active	14-583	✓	
Fgr, active	14-568	✓	
Flt-1, active	14-923	✓	
Flt-3 (D835Y), active	14-610	✓	
Flt-3, active	14-500	✓	
Flt-4, active	14-681	✓	
Fms, active	14-551	✓	
Fms (Y969C), active	14-820	✓	
Fyn, active	14-441	✓	
Fyn, partially purified	14-107		
GCK, active	14-743	✓	
GCN2, active	14-934 ●	✓ ●	
GRK1, active	14-935 ●	✓ ●	
GRK5, active	14-714	✓	
GRK6, active	14-715	✓	
GRK7, active	14-752	✓	
GSK3α, active	14-492	✓	12-533
GSK3β, active	14-306	✓	12-533
GSK3β, active, rat	14-538		12-533
Haspin, active	14-744	✓	
Hck, activated	14-843	✓	
Hck, active	14-577	✓	
HIPK1, active	14-679	✓	
HIPK2, active	14-623	✓	
HIPK3, active	14-680	✓	
IGF-1R, activated	14-802	✓	12-527
IGF-1R, active	14-465	✓	12-527
IKKα, active	14-461	✓	12-459
IKKβ, active	14-485	✓	12-460
IKKε, active	14-926 +	✓ +	
Insulin Receptor, activated	14-803	✓	
Insulin Receptor, active	14-466	✓	
IRAK1, active	14-684	✓	

Enzyme	Catalogue No.	Kinase Profiler™ Service	Substrate
IRAK4, active	14-599	✓	
IRE1	14-930 ●	✓ ●	
IRR, active	14-645	✓	
Itk, active	14-660	✓	
JAK1	14-918 +	✓ +	
JAK2, active	14-640	✓	
JAK2, immune complex agarose	14-134		
JAK3, active	14-629	✓	12-547
JNK1α1/SAPK1c, active	14-327	✓	
JNK1α1/SAPK1c, unactive	14-328		
JNK2α2/SAPK1a, active	14-329	✓	
JNK2α2/SAPK1a, unactive	14-330		
JNK3/SAPK1b (K55R), inactive	14-239		12-528
JNK3/SAPK1b, active	14-501	✓	12-528
JNK3/SAPK1b, unactive	14-523		12-528
KDR, active	14-630	✓	
Lck, activated	14-842	✓	
Lck, active	14-442	✓	
Lck, unactive	14-708		
LIM Kinase 1, active	14-656	✓	
LIM Kinase 1, active, mouse	14-457		
LIM Kinase 1, unactive	14-659		
LKB1/STRADα/MO25α, active	14-596	✓	
LOK, active	14-686	✓	
LRRK2	14-919 +	✓ +	
Lyn, active	14-510	✓	
Lyn, active, mouse	14-315	✓	
Lyn (p56), partially purified	14-105		
MAP Kinase 1/Erk1, active	14-439	✓	
MAP Kinase 1/Erk1, unactive	14-515		
MAP Kinase 1/Erk1 agarose, unactive	14-121		
MAP Kinase 2/Erk2, active	14-550	✓	
MAP Kinase 2/Erk2, active, mouse	14-173	✓	
MAP Kinase 2/Erk2, unactive	14-536		
MAP Kinase 2/Erk2, unactive, mouse	14-198		

Enzyme	Catalogue No.	Kinase Profiler™ Service	Substrate
MAPKAP Kinase 2, active	14-337	✓	
MAPKAP Kinase 2, unactive	14-349		
MAP Kinase 2/Erk 2 (K52R), inactive	14-696		
MAPKAP Kinase 3, active	14-585	✓	
MAPKAP Kinase 3, unactive	14-586		
MARK1, active	14-651	✓	
MEK1, active	14-429	✓	
MEK1, unactive	14-420		
MEK1 (K97R), inactive	14-737		
MEK2, active	14-528		
MEK2, unactive	14-532		
MEK2, unactive	14-541		
MEK2 (K101M), inactive	14-709		
MELK, active	14-909	✓	
Mer, active	14-728	✓	
Met, active	14-526	✓	
Met (D1246H), active	14-915	✓	
Met (D1246N), active	14-818	✓	
Met (M1268T), active	14-817	✓	
Met (Y1248C), active	14-805	✓	
Met (Y1248D), active	14-816	✓	
Met (Y1248H), active	14-804	✓	
MINK, active	14-615	✓	
MKK4/SKK1, active, mouse	14-377	✓	
MKK4/SKK1, unactive, mouse	14-378		
MKK6/SKK3 (S599D, T603D), active	14-537		
MKK6/SKK3, active	14-303	✓	
MKK6/SKK3, unactive	14-304		
MKK7β1, active	14-543	✓	
MKK7β1, unactive	14-542		
MLCK, active	14-638	✓	
MLK1, active	14-690	✓	
Mnk2, active	14-664	✓	
MRCRα, active	14-691	✓	
MRCRβ, active	14-643	✓	
MSK1, active	14-548	✓	12-331, 12-385
MSK2, active	14-616	✓	
MSK2, unactive	14-625		
MSSK1, active	14-665	✓	
MST1, active	14-624	✓	
MST2, active	14-524	✓	
MST3, active	14-695	✓	
MST4, active	14-928 ●	✓ ●	

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Kinase Targets

Enzyme	Catalogue No.	Kinase Profiler™ Service	Substrate
mTOR		✓	12-645
mTOR (1362-end) / FKBP12	14-784		12-645
mTOR (1362-end), active	14-770		12-645
mTOR / FKBP12		✓	12-645
MuSK, active	14-634	✓	
NEK2, active	14-545	✓	
NEK3, active	14-694	✓	
NEK6, active	14-578	✓	
NEK7, active	14-565	✓	12-544
NEK9	14-936 ●	✓ ●	
NEK11, active	14-700	✓	
NLK, active	14-676	✓	
p38α/SAPK2a, active	14-251	✓	
p38α/SAPK2a, unactive	14-252		
p38α/SAPK2a (6His-tag), active	14-587		
p38α/SAPK2a (6His-tag), unactive	14-588		
p38α/SAPK2a (T106M), active	14-687	✓	
p38β2/SAPK2b2, active	14-253	✓	
p38γ/SAPK3, active	14-246	✓	
p38δ/SAPK4, active	14-249	✓	
p70 S6 Kinase (T412E), active	14-486	✓	12-420
PAK2, active	14-481	✓	
PAK1, active	14-927 +	✓ +	

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Enzyme	Catalogue No.	Kinase Profiler™ Service	Substrate
PAK3, active	14-683		
PAK4, active	14-584	✓	
PAK5, active	14-699	✓	
PAK6, active	14-633	✓	
PAR-1Ba, active	14-544	✓	
PASK, active	14-701	✓	
PDGFRα, active	14-467	✓	
PDGFRα (550-end, V561D), active human	14-735	✓	
PDGFRα (D842V), active	14-729	✓	
PDGFRβ, active	14-463	✓	
PDK1, active	14-452	✓	12-401
PEK, active	14-916	✓	
PhKγ2, active	14-698	✓	
Pl3 Kinase (p110α (E542K)/p85α), active, human	14-782	✓	
Pl3 Kinase (p110α (E542K)/p85α), mouse	14-791	✓	
Pl3 Kinase (p110α (E545K)/p85α), active, human	14-783	✓	
Pl3 Kinase (p110α (E545K)/p85α), mouse	14-781	✓	
Pl3 Kinase (p110α (H1047R)/p85α), active, mouse	14-787	✓	
Pl3 Kinase (p110α (H1047R)/p85α), human	14-792	✓	
Pl3 Kinase (p110α/p65α), active, human	14-790	✓	
Pl3 Kinase (p110α/p65α), active, mouse	14-786	✓	
Pl3 Kinase (p110α/p85α), active, human	14-602	✓	
Pl3 Kinase (p110α/p85α), active, mouse	14-785	✓	
Pl3 Kinase (p110β/p85α), active, mouse	14-794	✓	
Pl3 Kinase (p110β/p85α), active, human	14-603	✓	
Pl3 Kinase (p110β/p85α), active, mouse	14-788	✓	
Pl3 Kinase (p110δ/p85α), active, mouse	14-789	✓	
Pl3 Kinase (p110δ/p85α), active, human	14-604	✓	
Pl3 Kinase (p120γ), human	14-558	✓	
Pl3 Kinase C2α, active	14-906	✓	

Enzyme	Catalogue No.	Kinase Profiler™ Service	Substrate
Pl3 Kinase C2β, active	14-907	✓	
Pl3 Kinase C2γ, active	14-910	✓	
Pl4KIIIα, active	14-908	✓	
Pim-1, active	14-573	✓	
Pim-2, active	14-607	✓	12-542
Pim-3, active	14-738	✓	
PIP4K2α, active	14-901	✓	
PIP5K1α, active	14-844	✓	
PIP5K1γ, active	14-845	✓	
PKA, catalytic subunit, recombinant	14-440	✓	12-151, 12-152, 12-394
PKC, active	14-115		12-121, 12-123, 12-411, 12-536
PKCα, active	14-484	✓	
PKCβI, active	14-503	✓	
PKCβII, active	14-496	✓	
PKCγ, active	14-483	✓	
PKCδ, active	14-504	✓	
PKCε, active	14-518	✓	
PKCζ, active	14-525	✓	
PKCη, active	14-497	✓	
PKCθ, active	14-444	✓	
PKCι, active	14-505	✓	
PKCμ, active	14-508	✓	
PKD2, active	14-506	✓	
PKG1α, active	14-688	✓	
PKG1β, active	14-650	✓	
PKR agarose, active	14-423		
Plk1, active	14-777	✓	
Plk3, active	14-572	✓	
PRAK, active	14-334	✓	12-363
PRAK, unactive	14-335		12-363
PRK2, active	14-549	✓	
PRKX, active	14-677	✓	
PTK5, active	14-693	✓	
Pyk2, active	14-567	✓	
Raf-1 (truncated), active	14-352	✓	
Ret (V804L), active	14-758	✓	
Ret (V804M), active	14-760	✓	
Ret, active	14-570	✓	
RIPK2, active	14-612	✓	
ROKα/ROCK-II, active	14-451	✓	
ROKα/ROCK-II, active, rat	14-338	✓	
ROKβ/ROCK-I, active	14-601	✓	
Ron, active	14-581	✓	
Ros, active	14-527	✓	

Enzyme	Catalogue No.	Kinase Profiler™ Service	Substrate
Rse, active	14-535	✓	
Rsk1/MAPKAP Kinase 1a, active	14-509	✓	12-124
Rsk1/MAPKAP Kinase 1a, active, rat	14-479	✓	
Rsk2/MAPKAP Kinase 1b, active	14-480	✓	12-243
Rsk3, active	14-462	✓	
Rsk4, active	14-702	✓	
SGK1 (Δ1-59, S422D), active	14-331	✓	
SGK1 (Δ1-59, S422D), inactive	14-332		
SGK2, active	14-635	✓	
SGK2, inactive	14-636		
SGK3, active	14-647	✓	
SGK3, inactive	14-648		
SIK, active	14-652	✓	
Snk, active		✓	
SNRK, active	14-932	○	
Src, active	14-326	✓	12-543
Src (1-530), active	14-746	✓	
Src (p60c-src)	14-117		
Src (T341M), active	14-748	✓	
SRPK1, active	14-564	✓	12-532
SRPK2, active	14-666	✓	
STK25, active	14-929	✓	
STK33, active	14-671	✓	
Syk, active	14-314	✓	
TAK1-TAB1 fusion, active	14-600	✓	
TAO1, active	14-749	✓	
TAO2, active	14-736	✓	
TAO3, active	14-745	✓	
TBK1, active	14-628	✓	
Tec, activated	14-801	✓	
TGFBR1, active	14-912	✓	
Tie2, active	14-540	✓	
Tie2 (R849W), active	14-763	✓	
Tie2 (Y1108F)	14-766		
Tie2 (Y897S)	14-764	✓	
TLK1, active		○	
TLK2, active	14-739	✓	
TrkA, active	14-571	✓	
TrkB, active	14-507	✓	
TrkC, active	14-922	✓	
TSSK1, active	14-670	✓	
TSSK2, active	14-632	✓	
Txx, active	14-761	✓	
TYK2, active	14-924	✓	

Enzyme	Catalogue No.	Kinase Profiler™ Service	Substrate
ULK2, active	14-772	✓	
ULK3, active	14-755	✓	
VRK2, active	14-732	✓	
Wee1, active	14-925	✓	
WNK2, active	14-678	✓	
WNK3, active	14-658	✓	
Yes, active	14-478	✓	
ZAP-70, active	14-404	✓	
ZIPK, active	14-608	✓	12-545

Phosphatase Targets

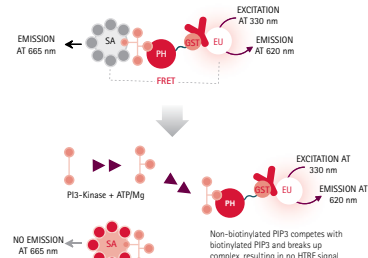
Enzyme	Catalogue No.	Phosphatase Profiler™ Service
Calcineurin/PP2B, active	14-390	
Calcineurin/PP2B, active	14-446	
CD45	14-618	✓
cdc25A, active	14-369	
cdc25B, active	14-370	
DUSP22	14-641	✓
HePTP	14-593	✓
Lambda Protein Phosphatase	14-405	
Lambda Protein Phosphatase, GST	14-598	
LMPTP-A	14-619	✓
LMPTP-B	14-620	✓
MKP-1/CL100, active	14-391	
MKP5, active	14-779	✓
PP1, purified	14-110	
PP1α	14-595	✓
PP2A, purified	14-111	✓
PP5, active	14-778	✓
PTEN, active	14-488	
PTP-1B	14-358	
PTP-1B	14-621	✓
PTP-1B, active, agarose conj.	14-109	
PTPβ	14-350	✓
PTPMEG-1	14-642	✓
PTPMEG-2	14-592	✓
PTPN22	14-768	✓
RPTPμ, active	14-780	✓
SHP-1/SHPTP-1	14-113	✓
SHP-1	14-591	✓
SHP-2	14-622	✓
TCPTP	14-646	✓
TMDP	14-767	✓
VHR	14-594	✓
YopH, active	14-590	✓

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Assay Kit	Wells	Catalogue No.
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	1,920	33-017
	10,000	33-036
	50,000	33-037
HTRF® PI3 Kinase 3-Step assay, Class I	384	33-040
	1,940	33-041
	10,000	33-047
HTRF® PI3 Kinase assay, Class II	384	33-038
	1,920	33-039
HTRF® PIP4 Kinase assay	384	33-054
	1,920	33-055
HTRF® PIP5 Kinase assay	384	33-125
	1,920	33-126

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The Safety & Liability Screening Panel provides a liability-focused functional assay panel of 125 GPCR, kinase, ion channel and phosphatase targets.

Target Class	Family	Target Name	Species	Assay Format
GPCR	Acetylcholine (muscarinic)	M1	Hu	Ca ²⁺
GPCR	Acetylcholine (muscarinic)	M2	Hu	Ca ²⁺
GPCR	Acetylcholine (muscarinic)	M3	Hu	Ca ²⁺
GPCR	Adenosine	A1	Hu	Ca ²⁺
GPCR	Adenosine	A3	Hu	Ca ²⁺
GPCR	Adrenergic	α1A	Hu	Ca ²⁺
GPCR	Adrenergic	α1D	Hu	Ca ²⁺
GPCR	Adrenergic	α2A	Hu	Ca ²⁺
GPCR	Adrenergic	β1	Hu	Ca ²⁺
GPCR	Adrenergic	β2	Hu	Ca ²⁺
GPCR	Anaphylotoxin	C5aR	Hu	Ca ²⁺
GPCR	Angiotensin	AT1	Hu	Ca ²⁺
GPCR	Bombesin	BB2	Hu	Ca ²⁺
GPCR	Bradykinin	B2	Hu	Ca ²⁺
GPCR	Calcitonin	CGPR1	Hu	Ca ²⁺
GPCR	Cannabinoid	CB1	Hu	Ca ²⁺
GPCR	Cannabinoid	CB2	Hu	Ca ²⁺
GPCR	Chemokine	CCR1	Hu	Ca ²⁺
GPCR	Chemokine	CCR2B	Hu	Ca ²⁺
GPCR	Chemokine	CX3CR1	Hu	Ca ²⁺
GPCR	Chemokine	CXCR1	Hu	Ca ²⁺
GPCR	Cholecystokinin	CCK2	Hu	Ca ²⁺
GPCR	CRF Receptor	CRF1	Hu	Ca ²⁺
GPCR	Dopamine	D1	Hu	Ca ²⁺
GPCR	Dopamine	D2L	Hu	Ca ²⁺
GPCR	Dopamine	D5	Hu	Ca ²⁺
GPCR	Endothelin	ETA	Hu	Ca ²⁺
GPCR	Endothelin	ETB	Hu	Ca ²⁺
GPCR	Galanin	GAL1	Hu	Ca ²⁺
GPCR	Glycoprotein hormone	TSH	Hu	Ca ²⁺
GPCR	GnRH	GnRH / LHRH	Hu	Ca ²⁺
GPCR	Histamine	H1	Hu	Ca ²⁺
GPCR	Histamine	H2	Hu	Ca ²⁺
GPCR	Histamine	H3	Hu	Ca ²⁺
GPCR	Leukotriene	BLT1	Hu	Ca ²⁺
GPCR	Leukotriene	CysLT1	Hu	Ca ²⁺

Assay Formats:

Ca²⁺: Cellular calcium flux

E-PHYS: Cellular electrophysiology

ENZ-F: Enzymatic, fluorescent

ENZ-R: Enzymatic, radiometric

Target Class	Family	Target Name	Species	Assay Format
GPCR	Lysophospholipid	LPA1	Hu	Ca ²⁺
GPCR	Lysophospholipid	LPA3	Hu	Ca ²⁺
GPCR	Lysophospholipid	S1P3	Hu	Ca ²⁺
GPCR	Melanocortin	MC5	Hu	Ca ²⁺
GPCR	Motilin	Motilin receptor, MTLR	Hu	Ca ²⁺
GPCR	Neuromedin U	NMU1	Hu	Ca ²⁺
GPCR	Neuropeptide Y	Y2	Hu	Ca ²⁺
GPCR	Neurotensin	NTR1	Hu	Ca ²⁺
GPCR	N-formylpeptide	FPR1	Hu	Ca ²⁺
GPCR	Nicotinic Acid	GPR109A	Hu	Ca ²⁺
GPCR	Opioid	δ	Hu	Ca ²⁺
GPCR	Opioid	κ	Hu	Ca ²⁺
GPCR	Opioid	μ	Hu	Ca ²⁺
GPCR	Orexin	OX1	Hu	Ca ²⁺
GPCR	Oxytocin	OT	Hu	Ca ²⁺
GPCR	P2Y / Purinergic (metabotropic)	P2Y1	Hu	Ca ²⁺
GPCR	Platelet Activating Factor	PAF	Hu	Ca ²⁺
GPCR	Prokineticin	PK1	Hu	Ca ²⁺
GPCR	Prolactin-releasing peptide	PRP	Hu	Ca ²⁺
GPCR	Prostanoid	DP	Hu	Ca ²⁺
GPCR	Prostanoid	EP2	Hu	Ca ²⁺
GPCR	Prostanoid	EP3	Hu	Ca ²⁺
GPCR	Prostanoid	FP	Hu	Ca ²⁺
GPCR	Prostanoid	IP1	Hu	Ca ²⁺
GPCR	Prostanoid	TP	Hu	Ca ²⁺
GPCR	Protease-activated	PAR4	Hu	Ca ²⁺
GPCR	PTH receptor	PTH1	Hu	Ca ²⁺
GPCR	Serotonin	5-HT1A	Hu	Ca ²⁺
GPCR	Serotonin	5-HT2A	Hu	Ca ²⁺
GPCR	Serotonin	5-HT2B	Hu	Ca ²⁺
GPCR	Serotonin	5-HT2C	Hu	Ca ²⁺
GPCR	Somatostatin	SST4	Hu	Ca ²⁺
GPCR	Tachykinin /neurokinin	NK1	Hu	Ca ²⁺
GPCR	Tachykinin /neurokinin	NK3	Hu	Ca ²⁺
GPCR	Urotensin II	UT / GPR14	Hu	Ca ²⁺

Target Class	Family	Target Name	Species	Assay Format
GPCR	Vasopressin	V1A	Hu	Ca ²⁺
GPCR	Vasopressin	V2	Hu	Ca ²⁺
GPCR	VIP/PACAP	PAC1 long isoform	Hu	Ca ²⁺
GPCR	VIP/PACAP	VPAC1	Hu	Ca ²⁺
GPCR	VIP/PACAP	VPAC2	Hu	Ca ²⁺
Ion Channel	Sodium	Nav1.5	Hu	E-PHYS
Ion Channel	Potassium	hKv4.3/ hKChIP2	Hu	E-PHYS
Ion Channel	Calcium	L-type Calcium (Cav1.2)	Hu	E-PHYS
Ion Channel	Potassium	hKv1.5	Hu	E-PHYS
Ion Channel	Potassium	hKCNQ1/ hminK	Hu	E-PHYS
Ion Channel	Potassium	hERG	Hu	E-PHYS
Ion Channel	HCN	hHCN4	Hu	E-PHYS
Ion Channel	Potassium	hKir2.1	Hu	E-PHYS
Phosphatase	Tyrosine	PTP1B	Hu	ENZ-F
Phosphatase	Tyrosine	TCPTP	Hu	ENZ-F
Kinase	AGC	PKA	Hu	ENZ-R
Kinase	AGC	PKBβ	Hu	ENZ-R
Kinase	AGC	PKCm	Hu	ENZ-R
Kinase	AGC	PKCz	Hu	ENZ-R
Kinase	AGC	PKCα	Hu	ENZ-R
Kinase	AGC	PKCβI	Hu	ENZ-R
Kinase	AGC	PKCβII	Hu	ENZ-R

Target Class	Family	Target Name	Species	Assay Format
Kinase	AGC	PKCγ	Hu	ENZ-R
Kinase	AGC	PKCδ	Hu	ENZ-R
Kinase	AGC	PKCε	Hu	ENZ-R
Kinase	AGC	PKCη	Hu	ENZ-R
Kinase	AGC	PKCθ	Hu	ENZ-R
Kinase	AGC	PKCι	Hu	ENZ-R
Kinase	AGC	PKG1β	Hu	ENZ-R
Kinase	AGC	PKG1α	Hu	ENZ-R
Kinase	AGC	ROCK-II	Hu	ENZ-R
Kinase	CAMK	AMPK	rat	ENZ-R
Kinase	CAMK	CaMKII β	Hu	ENZ-R
Kinase	CAMK	CaMKII γ	Hu	ENZ-R
Kinase	CAMK	CaMKII δ	Hu	ENZ-R
Kinase	CAMK	LKB1	Hu	ENZ-R
Kinase	CMGC	CDK1/cyclinB	Hu	ENZ-R
Kinase	CMGC	CDK2/cyclinA	Hu	ENZ-R
Kinase	CMGC	CDK2/cyclinE	Hu	ENZ-R
Kinase	CMGC	CDK3/cyclinE	Hu	ENZ-R
Kinase	CMGC	CDK5/p25	Hu	ENZ-R
Kinase	CMGC	CDK5/p35	Hu	ENZ-R
Kinase	CMGC	CDK7/cyclinH/ MAT1	Hu	ENZ-R
Kinase	CMGC	CDK9/cyclinT1	Hu	ENZ-R
Kinase	CMGC	GSK3b	Hu	ENZ-R
Kinase	CMGC	MAPK1	Hu	ENZ-R
Kinase	CMGC	MAPK2	Hu	ENZ-R
Kinase	CMGC	p70 S6 Kinase	Hu	ENZ-R
Kinase	CMGC	SAPK2a	Hu	ENZ-R
Kinase	Misc	PhKγ2	Hu	ENZ-R
Kinase	TK	Abl	Hu	ENZ-R
Kinase	TK	Flt3	Hu	ENZ-R
Kinase	TK	IR	Hu	ENZ-R
Kinase	TK	Lyn	Hu	ENZ-R

Assay Formats:Ca²⁺: Cellular calcium flux

E-PHYS: Cellular electrophysiology

ENZ-F: Enzymatic, fluorescent

ENZ-R: Enzymatic, radiometric



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Ube1	(23-021)	UbcH4	(23-025)	c-Cbl	(23-041)	Src	(23-042)
Ube1	(23-021)	UbcH4	(23-025)	c-Cbl	(23-041)	Kit	(23-043)
Ube1	(23-021)	UbcH4	(23-025)	MDM2/CK1δ	(23-032)	p53	(23-034)
Ube1	(23-021)	UbcH5c	(23-035)	MDM2/CK1δ	(23-032)	p53	(23-034)
Ube1	(23-021)	UbcH4	(23-025)	MDM2	(23-033)	(auto-ubiquitination)	
Ube1	(23-021)	UbcH5c	(23-035)	MDM2	(23-033)	(auto-ubiquitination)	
Ube1	(23-021)	UbcH3	(23-022)	Skp1-Cul1-F-box, Skp2/Cks1 complex	(23-023)	p27 complex	(23-024)
Ube1	(23-021)	UbcH3	(23-022)	Skp1-Cul1-F-box, Fbw7 complex	(23-030)	Cyclin E1	(23-031)
Ube1	(23-021)	UbcH5a	(23-029)	Skp1-Cul1-F-box, Fbw7 complex	(23-030)	Cyclin E1	(23-031)
Ube1	(23-021)	UbcH3	(23-022)	Skp1-Cul1-F-box, βTrCP1 complex	(23-026)	IκBα	(23-028)
Ube1	(23-021)	UbcH4	(23-025)	Skp1-Cul1-F-box, βTrCP1 complex	(23-026)	IκBα	(23-028)
Ube1	(23-021)	UbcH3	(23-022)	Skp1-Cul1-F-box, βTrCP1 complex	(23-026)	β-catenin	(23-027)
Ube1	(23-021)	UbcH4	(23-025)	Skp1-Cul1-F-box, βTrCP1 complex	(23-026)	β-catenin	(23-027)
Ube1	(23-021)	UbcH4	(23-025)	VHL complex	(23-044)	HIF-1α	(23-045)
Ube1	(23-021)	UbcH5a	(23-029)	VHL complex	(23-044)	HIF-1α	(23-045)
Ube1	(23-021)	UbcH5c	(23-035)	VHL complex	(23-044)	HIF-1α	(23-045)
Ube1	(23-021)	UbcH7	(23-047)	Parkin, Myc-tagged	(23-046)	auto-ubiquitination	
Ube1	(23-021)	UbcH7	(23-047)	Parkin	(23-048)	p38/JTV-1	(23-049)
Ube1	(23-021)	UbcH13/Uev1A	(23-051)	CHIP	(23-050)	p53	(23-034)
Ube1	(23-021)	UbcH13/Uev1A	(23-051)	CHIP	(23-050)	Hsp70	(23-052)
Ube1	(23-021)	UbcH13/Uev1A	(23-051)	CHIP, Myc-tagged	(23-053)	auto-ubiquitination	
Ube1	(23-021)	UbcH5c +	(23-035)	MuRF1 +	(23-054)	Cardiac Troponin I	(23-055)
Ube1	(23-021)	UbcH6, active +	(23-036)	Parkin (Myc-tagged) +	(23-046)	(auto-ubiquitination)	
Ube1	(23-021)	UbcH6, active +	(23-036)	Parkin +	(23-048)	p38/JTV-1	(23-049)
Ube1	(23-021)	UbcH4	(23-025)	XIAP ●	(23-056)	Smac/DIABLO ●	(23-057)
Ube1	(23-021)	UbcH5c	(23-035)	Smurf1 ●	(23-058)	Smad7 ●	(23-039)
Ube1	(23-021)	UbcH5a	(23-029)	TRAF6 ○	(23-059)	IKKγ ○	(23-060)

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Type	Pathway or Bioanalyte	Related Kit	BioAnalyte(s)
Multiplex	Akt - 2 Plex +	14-618MAG	Total Akt Phospho Akt (Ser473)
Multiplex	Akt/mTOR Phospho - 11 Plex	48-611MAG	Phospho Akt/PKB (Ser473) Phospho GSK3α (Ser21) Phospho GSK3β (Ser9) Phospho IGF1R (Tyr1135/Tyr1136) Phospho IR (Tyr1162/1163) Phospho IRS (Ser312) Phospho mTOR (Ser2448) Phospho p70 S6 Kinase (Thr412) Phospho PTEN (Ser380) Phospho RPS6 (Ser235/Ser236) Phospho TSC2 (Ser939)
Multiplex	Akt/mTOR Total - 11 Plex	48-612MAG	Total Akt/PKB Total GSK3α Total GSK3β Total IGF1R Total IR Total IRS Total mTOR Total p70 S6 Kinase Total PTEN Total RPS6 Total TSC2
Multiplex	Angiogenesis RTK Phospho - 10 Plex +	48-674MAG	Phospho c-Kit (pan Tyr) Phospho Flt3 (pan Tyr) Phospho M-CSFR (pan Tyr) Phospho PDGFRα (pan Tyr) Phospho PDGFRβ (pan Tyr) Phospho Tie1 (pan Tyr) Phospho Tie2 (pan Tyr) Phospho VEGF R1 (pan Tyr) Phospho VEGF R2 (pan Tyr) Phospho VEGF R3 (pan Tyr)

Type	Pathway or Bioanalyte	Related Kit	BioAnalyte(s)
Multiplex	Angiogenesis RTK Total - 10 Plex +	48-673MAG	Total c-Kit Total Flt3 Total M-CSFR Total PDGFRα Total PDGFRβ Total Tie1 Total Tie2 Total VEGF R1 Total VEGF R2 Total VEGF R3
Multiplex	DNA Damage/Genotoxicity ●	48-621MAG	Total ATR Phospho Chk1 (Ser345) Phospho Chk2 (Thr68) Phospho H2A.X (Ser139) Total MDM2 Phospho p53 (Ser15) Total p21
Multiplex	Early Apoptosis - 7 Plex +	48-669MAG	Phospho Akt (Ser473) Phospho BAD (Ser112) Phospho Bcl-2 (Ser70) Total Active Caspase 8 Total Active Caspase 9 Phospho JNK (Thr183/Tyr185) Phospho p53 (Ser46)
Multiplex	EGFR Profiler - 8 Plex	48-613MAG	Total EGFR Phospho EGFR (Thr654) Phospho EGFR (Thr669) Phospho EGFR (Tyr845) Phospho EGFR (Tyr1045) Phospho EGFR (Ser1047) Phospho EGFR (Tyr1068) Phospho EGFR (Tyr1086)
Multiplex	Erk / MAPK 1/2 - 2 Plex +	48-619MAG	Total Erk Phospho Erk (Thr185/Tyr187)
Multiplex	Heat Shock Protein - 5 Plex	48-615MAG	Total HSP27 Phospho HSP27 (Ser78/Ser82) Total HSP60 Total HSP70 Total HSP90α

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Type	Pathway or Bioanalyte	Related Kit	BioAnalyte(s)
Multiplex	Late Apoptosis - 3 plex	48-670MAG	Total Active Caspase 3 Total Active Cleaved PARP Total GAPDH
Multiplex	MAPK/SAPK - 10 plex	48-660MAG	Phospho ATF2 (Thr69/71) Phospho c-Jun (Ser73) Phospho ERK 1/2 (Thr185/Tyr187) Phospho Hsp27 (Ser78) Phospho JNK/SAPK1 (Thr183/Tyr185) Phospho MEK1 (Ser222) Phospho MSK1 (Ser212) Phospho p38/SAPK (Thr180/Tyr182) Phospho p53 (Ser15) Phospho STAT1 (Tyr701) Phospho cMet/HGFR (Tyr) Phospho EGFR (Tyr) Phospho ErbB2/HER2 (Tyr) Phospho ErbB3 (Tyr) Phospho ErbB4 (Tyr) Phospho IGF1R (Tyr) Phospho IR (Tyr)
Multiplex	Mitogenesis RTK Phospho - 7 Plex	48-672MAG	Total cMet/HGFR Total EGFR Total ErbB2/HER2 Total ErbB3 Total ErbB4 Total IGF1R Total IR
Multiplex	Mitogenesis RTK Total - 7 Plex	48-671MAG	Phospho Akt (pS473) Phospho CREB (pS133) Phospho ERK (pT185/pY187) Phospho JNK (pT183/pY185) Phospho NFκB (pS536) Phospho STAT3 (pS727) Phospho STAT5A/B (pY694/699) Phospho p38 (pT180/pY182) Phospho p70 S6K (pT412)
Multiplex	Multi-Pathway - 9 Plex +	48-680MAG	Total TNFRI Phospho FADD (Ser194) Phospho IKKα/b (Ser177/Ser181) Phospho NF-κB (Ser536) Phospho IκB (Ser32) Total c-Myc

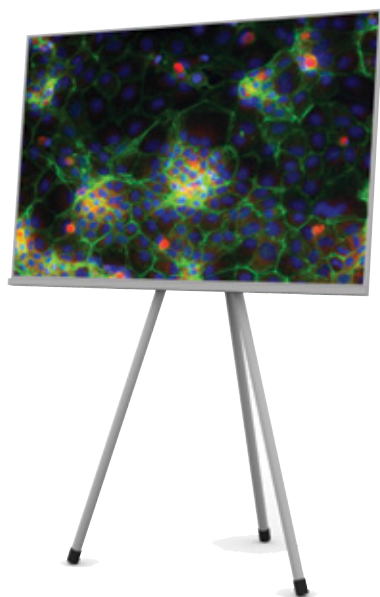
Type	Pathway or Bioanalyte	Related Kit	BioAnalyte(s)
Multiplex	Src Family Kinase - 7 Plex	48-650MAG	Phospho Blk (Tyr389) Phospho Fgr (Tyr412) Phospho Fyn (Tyr420) Phospho Hck (Tyr411) Phospho Lck (Tyr394) Phospho Src (Tyr419) Phospho Yes (Tyr421)
Multiplex	STAT - 5 Plex	48-610MAG	Phospho STAT1 (Tyr701) Phospho STAT2 (Tyr690) Phospho STAT5A/B (Tyr694/699) Phospho STAT6 (Tyr641)
Multiplex	T Cell Receptor - 7 plex	48-690MAG	Phospho CD3ε (Tyr) Phospho CREB (Ser133) Phospho ERK 1/2 (Thr185/Tyr187) Phospho Lat (Tyr) Phospho Lck (Tyr) Phospho Syk (Tyr) Phospho ZAP-70 (Tyr)
Multiplex	TGFβ - 6 Plex	48-614MAG	Phospho Akt (Ser473) Phospho Erk (Thr185/Tyr187) Phospho SMAD2 (Ser465/467) Phospho SMAD3 (Ser423/425) Total SMAD4 Total TGFβRII
Singleplex - phospho	Phospho Akt/PKB (Ser473)	46-601/46-677	
Singleplex - phospho	Phospho Akt/PKB (Thr308)	46-645	
Singleplex - phospho	Phospho ATF2 (Thr69/71)	46-658/46-676	
Singleplex - phospho	Phospho Bad (Ser112)	46-694	
Singleplex - phospho	Phospho c-Jun (Ser73)	46-622	
Singleplex - phospho	Phospho c-Kit (Tyr)	46-619	
Singleplex - phospho	Phospho c-Met/HGFR (Tyr)	46-651	
Singleplex - phospho	Phospho CREB (Ser133)	46-631	
Singleplex - phospho	Phospho EGFR (Tyr)	46-603	
Singleplex - phospho	Phospho ErbB2/Her2 (Tyr)	46-649	
Singleplex - phospho	Phospho ERK 1/2 (Thr185/Tyr187)	46-602	
Singleplex - phospho	Phospho GSK3b (Ser9)	46-690	
Singleplex - phospho	Phospho Histone H2A.X (Ser139)	46-692	
Singleplex - phospho	Phospho HSP27 (Ser78)	46-607	
Singleplex - phospho	Phospho IGF1R (Tyr)	46-647	
Singleplex - phospho	Phospho IκBa (Ser32)	46-643	
Singleplex - phospho	Phospho IR (Tyr1162/1163)	46-688	
Singleplex - phospho	Phospho IRS1 (Tyr)	46-627	

Cell-Based Profiling: SignalProfiler™ Service

Type	Pathway or Bioanalyte	Related Kit
Singleplex - phospho	Phospho JNK/SAPK1 (Thr183/Tyr185)	46-613
Singleplex - phospho	Phospho Lck (Tyr)	46-616
Singleplex - phospho	Phospho Lck (Tyr394)	46-712
Singleplex - phospho	Phospho Lyn (Tyr 397)	46-708
Singleplex - phospho	Phospho MEK1 (Ser222)	46-670
Singleplex - phospho	Phospho mTOR (Ser2448)	46-686
Singleplex - phospho	Phospho NFkB (p536)	46-702
Singleplex - phospho	Phospho p38/SAPK (Thr180/Tyr182)	46-610
Singleplex - phospho	Phospho p53 (Ser15)	46-663
Singleplex - phospho	Phospho p53 (Ser46)	46-664
Singleplex - phospho	Phospho p70 S6 Kinase (Thr412)	46-629
Singleplex - phospho	Phospho PDGF Receptorβ (Tyr)	46-615
Singleplex - phospho	Phospho PDGF Receptorα (Tyr)	46-614
Singleplex - phospho	Phospho PRAS40 (Thr246)	46-681
Singleplex - phospho	Phospho PTEN (Ser380)	46-679
Singleplex - phospho	Phospho Rb (Ser811)	46-706
Singleplex - phospho	Phospho Rb (Thr252)	46-704
Singleplex - phospho	Phospho Rb (Thr826)	46-705
Singleplex - phospho	Phospho Src (Tyr419)	46-710
Singleplex - phospho	Phospho Src (Tyr530)	46-711
Singleplex - phospho	Phospho STAT1 (Tyr701)	46-655
Singleplex - phospho	Phospho STAT2 (Tyr690)	46-635
Singleplex - phospho	Phospho STAT3 (Ser727)	46-624
Singleplex - phospho	Phospho STAT3 (Tyr705)	46-623
Singleplex - phospho	Phospho STAT5A/B (Tyr694/Tyr699)	46-641
Singleplex - phospho	Phospho STAT6 (Tyr641)	46-633
Singleplex - phospho	Phospho ZAP-70 (Tyr)	46-661

Type	Pathway or Bioanalyte	Related Kit
Singleplex - total	Active Caspase 3	46-604
Singleplex - total	Cleaved PARP (Asp214)	46-656
Singleplex - total	Total Akt/PKB	46-605
Singleplex - total	Total Bad	46-695
Singleplex - total	Total c-Kit	46-620/46-675
Singleplex - total	Total c-Met/HGFR	46-650
Singleplex - total	Total CREB	46-632
Singleplex - total	Total EGF Receptor	46-606
Singleplex - total	Total ERK 1/2	46-609
Singleplex - total	Total GSK3b	46-689
Singleplex - total	Total HIF1a	46-665
Singleplex - total	Total HSP27	46-608
Singleplex - total	Total Human GAPDH	46-667
Singleplex - total	Total IGF1R	46-646
Singleplex - total	Total IκBα	46-644
Singleplex - total	Total IR	46-687
Singleplex - total	Total IRS1	46-628
Singleplex - total	Total JNK	46-618
Singleplex - total	Total Lck	46-617
Singleplex - total	Total Lyn	46-707
Singleplex - total	Total MEK1	46-669
Singleplex - total	Total mTOR	46-685
Singleplex - total	Total NFkB	46-701
Singleplex - total	Total p21	46-621
Singleplex - total	Total p38	46-612
Singleplex - total	Total p53	46-662
Singleplex - total	Total p70 S6 Kinase	46-630
Singleplex - total	Total PRAS40	46-680
Singleplex - total	Total PTEN	46-678
Singleplex - total	Total Rb	46-703
Singleplex - total	Total Src	46-709
Singleplex - total	Total STAT1	46-654
Singleplex-total	Total STAT3	46-625





Cyropreserved HepaRG™ Cells

Improved reproducibility and function
for better ADME/Tox data

HepaRG™ cells are terminally differentiated hepatocellular carcinoma cells that reproducibly express:

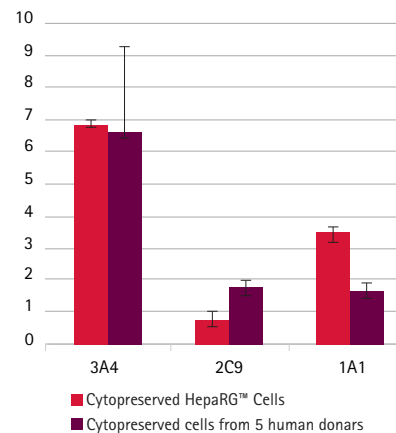
Product	Size	Catalogue No.
Cryopreserved HepaRG™ Cells	1 mL in vial with $\geq 8 \times 10^6$ viable cells	MMHPR116
HepaRG™ Thawing/Plating Medium Supplement	12.5 mL	MMADD671
HepaRG™ Tox Medium Supplement	12.5 mL	MMADD631
HepaRG™ Induction Medium Supplement	2.6 mL	MMADD641
HepaRG™ Serum Free Induction Medium Supplement	0.6 mL	MMADD651
HepaRG™ Culture Medium Supplement	14.0 mL	MMADD621

HepaRG™ cell advantages:

- Widely cited in publications
- Major liver-specific functions expressed; including Cytochrome p450s, transporters, nuclear receptors and metabolic enzymes
- Functional stability
- Reproducible and consistent data
- Suitable for high throughput screening
- High viability

Cryopreserved HepaRG™ cells or cryopreserved human hepatocytes were incubated for 72 hours with 25µM rifampicin (CYPs 3A4 and 2C9) or 25µM omeprazole (CYP 1A1). The level of CYP induction was assessed using Promega P450 Glo assay kits specific for each CYP. The data are the mean $\pm$ SD of triplicate determinations.

Here HepaRG™ CYP 3A4 was induced to a level comparable to that in the human hepatocytes. HepaRG™ 1A1/2 was induced to a level greater than that observed in the human hepatocytes. Finally, HepaRG™ CYP2C9 was induced to a lower level relative to the human hepatocytes.



GET STARTED

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Custom Target Production & Assay Development Services

FlexLabSM Services

Merck Millipore has extensive experience in developing assays for drug discovery and running projects of all scales. FlexLabSM assay development services provide you with dedicated bandwidth within our team to complement your in-house R&D efforts.

FEATURES

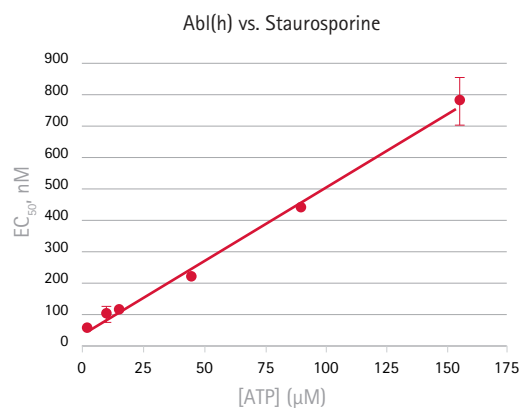
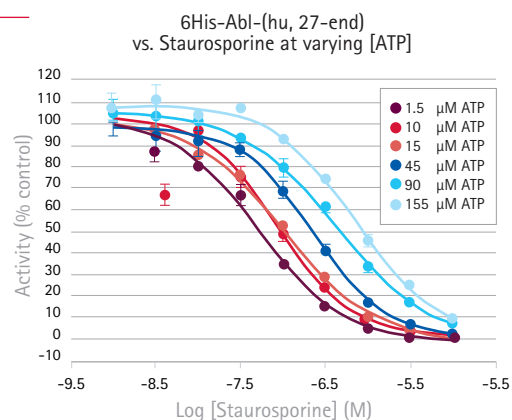
Kinase FlexLabSM:

- Type-II inhibitor binding
- Slow off-rate measurement
- Mutant kinase screening
- K_i analysis
- Custom expression and purification

GPCR and Ion Channel FlexLabSM:

- Cell line development
- Radioligand binding
- Functional and Inverse Agonist Assays
- Secondary assays
- Bulk manufacturing and Ready-to-AssayTM cells

FlexLabSM Assay Services can perform a spectrum of biochemical assays to help researchers improve their understanding of the mechanism of action of candidate compounds. These studies can include K_i determinations as shown in the example. TOP: The increase of EC_{50} with increasing ATP confirms that staurosporine is an ATP-competitive inhibitor of the kinase Abl. BOTTOM: A plot of EC_{50} values versus ATP concentration provides an estimation of the K_i at the γ -intercept.



Obtaining the reagents you need to drive your discovery program is not limited to our existing product line. FlexLabSM custom target production services provide you with experience, expertise and the flexibility you require to drive your discovery program. We offer custom protein production for kinases, phosphatases and protein substrates, and custom cell line development for GPCRs and ion channels.

Enzyme classes we routinely produce:

- Protein kinases
- Lipid kinases
- Protein phosphatases
- Lipid phosphatases
- Oxido-reductases
- Ubiquitin ligases
- Ubiquitin conjugating enzymes
- Ubiquitin activating enzymes
- Neddylation cascade enzymes
- De-Ubiquitinating enzymes
- Dehydrogenases
- Wild-type, disease-relevant mutants, unactivated and activated forms of all enzymes

FlexLab SM Capability	Typical variables
Expression systems	<i>E. coli</i> Baculovirus Mammalian (CHO, HEK)
Purification expertise	IMAC (Immobilized Metal Ion Affinity Chromatography) Ion exchange Gel filtration Affinity chromatography
Expression scales & capacities	Shake flask 50 ml - 1 L Benchtop bioreactors 5 L and 10 L 700 L / month shake-flask capacity 350 L / month bioreactor capacity
QC options	SDS page (apparent mol. wt.) Purity estimation Mass spec Western blot Activity assay (if appropriate / available)
Examples of end-uses	Enzymatic assays Biophysical assays (SPR) Substrates Crystallography NMR

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