

Cell-Based Assays 2021

Axxam offers **functional cell-based assays** for protein targets of relevance to drug discovery research, including challenging targets such as multi-subunit ion channels and current “hot” targets of interest. All assays are thoroughly QC-ed and validated for compound profiling and/or high throughput screening (HTS) applications in 384-microtiter plates.

We are continually developing new assays. If your target of interest is not listed in this catalogue, please feel free to enquire for availability.

Key Features:

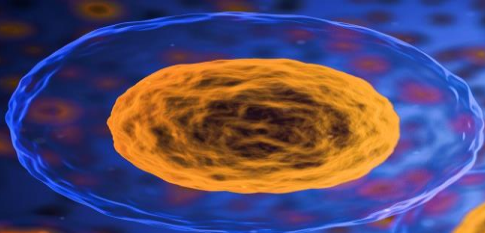
- ✓ High quality assays
 - optimal cell lines and detection systems
 - stable expression over time
 - validated using reference compounds
 - ion channel assays validated for patch clamp
- ✓ Available as “ready-to-go” to support your Hit Discovery Programs
- ✓ Expert technical support
- ✓ Assays details can be provided upon request

Assay Portfolio		
Protein class	No. Assays	Page
GPCRs	52	2-3
Ion Channels	37	4-5
Transporters	22	6
NHRs	5	7
Enzymes	4	7
Cytokine Receptors	1	7
Exchangers	3	7
Toll-Like Receptors	2	8
mRNA Post-Transcriptional Regulation	1	8
Tyrosine Kinase Receptors	2	8

Custom Assay Development

Axxam undertakes custom assay development projects. Our highly experienced team has developed numerous cell-based assays using cutting-edge technologies, including difficult targets that other groups have found intractable.

- ✓ Wide range of cell types overexpressing the target of interest or optimizing assay protocols for endogenously expressed targets
- ✓ Different reporter genes and signal detection methods, to better adapt the assay to the final goal

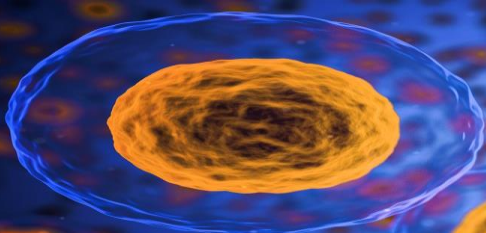


Cell-Based Assays 2021

Assay List

Target Class: GPCRs			
Sub-family	Symbol	Aliases / Other Designations	GeneID
Adenosine receptors	ADORA1	Adenosine A1 receptor	134
	Adora1 (<i>mouse</i>)	Mouse adenosine A1 receptor	11539
	Adora2a (<i>mouse</i>)	Mouse adenosine A2a receptor	11540
	ADORA2B	Adenosine A2b receptor	136
	Adora2b (<i>mouse</i>)	Mouse adenosine A2b receptor	11541
	Adora2b (<i>rat</i>)	Rat adenosine A2b receptor	29316
	ADORA3	Adenosine A3 receptor	140
	Adora3 (<i>mouse</i>)	Mouse adenosine A3 receptor	11542
Adrenergic receptors	ADRA1A	Adrenergic, alpha-1A-, receptor	148
	ADRA2A	Adrenergic, alpha-2A-, receptor	150
Bile acids receptors	GPBAR1	G-protein-coupled bile acid receptor 1	151306
Bradykinin receptors	BDKRB1	Bradykinin receptor B1	623
	Bdkrb1	Rat bradykinin receptor 1	81509
	BDKRB2	Bradykinin receptor B2	624
Cannabinoid receptors	CNR1	Cannabinoid receptor 1	1268
	Cnr1 (<i>rat</i>)	Rat cannabinoid receptor 1	25248
	CNR2	Cannabinoid receptor 2	1269
Chemokine (CXC) receptors	CCR2	Chemokine (C-C motif) receptor 2	1231
	CCR3	Chemokine (C-C motif) receptor 3	1232
	CCR5	Chemokine (C-C motif) receptor 5	1234
	CXCR1	Chemokine (C-X-C motif) receptor 1	3577
	CXCR2	Chemokine (C-X-C motif) receptor 2	3579
	CMKLR1	Chemerin chemokine-Like Receptor 1	1240
Cholinergic receptors	CHRM2	Cholinergic receptor, muscarinic 2	1129
Cholecystokinin receptors	CCKAR	Cholecystokinin A receptor	886
Class Frizzled (Class F) GPCRs	SMO	Smoothened receptor	20423
Complement component receptors	C5aR1	Complement component 5a receptor 1	728

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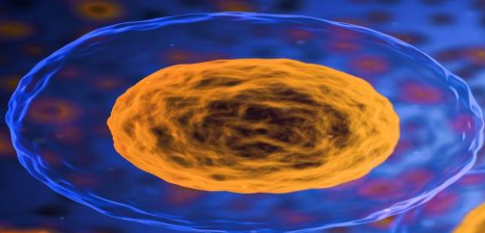


Cell-Based Assays 2021

Assay List

Target Class: GPCRs (continued)			
Sub-family	Symbol	Aliases / Other Designations	GeneID
Dopamine receptors	DRD2	Dopamine receptor D2	1813
	DRD3	Dopamine receptor D3	1814
Fatty acid receptors	GPR119	G-protein-coupled receptor 119	139760
	FFAR1	Free fatty acid receptor 1, GPR40	2864
	FFAR2	Free fatty acid receptor 2, GPR43	2867
	Ffar4 (mouse)	Mouse 5-hydroxytryptamine (serotonin) receptor 2A	107221
Formyl peptide receptors	FPR1	Formyl peptide receptor-1	2357
	FPR2	Formyl peptide receptor-2	2358
Galanin receptors	GALR2	Galanin Receptor 2	8811
Ghrelin	GHSR	Growth hormone secretagogue receptor	2693
Glucagon receptors	GCGR	Glucagon receptor	2642
	GLP1R	Glucagon-like peptide 1 receptor	2740
	Glp1r (rat)	Rat glucagon-like peptide 1 receptor	25051
Glutamate receptors	GRM1	Glutamate receptor metabotropic 1	2911
	Grm2 (rat)	Rat glutamate receptor, metabotropic 2	24415
Kynurenic acid receptors	GPR35	G-protein-coupled receptor 35	2859
Leukotriene receptors	LTB4R	Leukotriene B4 receptor	1241
Lysophosphatidic acid receptors	LPAR1	Lysophosphatidic acid receptor 1	1902
	LPAR5	Lysophosphatidic acid receptor 5, GPR93	57121
Neuropeptide receptors	NPY-2R	Neuropeptide Y receptor 2	4887
Prokineticin receptors	PROKR1	Prokineticin receptor 1	10887
	PROKR2	Prokineticin receptor 2	128674
Prostanoid receptors	PTGDR2	GPR44, CRTH2, DP2, Prostaglandin D2 receptor	11251
Protease activated receptors	F2RL3	PAR4, Coagulation factor II (thrombin) receptor-like 3	9002
Sphingosine-1 phosphate	S1pr3 (mouse)	Mouse Sphingosine-1-phosphate receptor 3	13610

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INNOVATES, ENABLES, PERFORMS

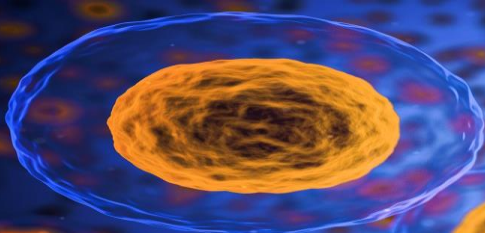
Cell-Based Assays 2021

Assay List

Target Class: Ligand-Gated Ion Channels			
Sub-family	Symbol	Aliases / Other Designations	GenelD
Ligand-gated cationic channels	P2RX1	Purinergic receptor P2X, ligand-gated ion channel 1	5023
	P2rx1 (mouse)	Mouse purinergic receptor P2X, ligand-gated ion channel 1	18436
	P2RX2	Purinergic receptor P2X, ligand-gated ion channel 2	22953
	P2RX3	Purinergic receptor P2X, ligand-gated ion channel 3	5024
	P2rx3 (rat)	Rat purinergic receptor P2X, ligand-gated ion channel 3	81739
	P2RX4	Purinergic receptor P2X, ligand-gated ion channel 4	5025
	P2rx4 (mouse)	Mouse purinergic receptor P2x ligand-gated ion channel 4	18438
	P2rx4 (transient) (rat)	Rat Purinergic receptor P2X, ligand-gated ion channel 4	29659
	P2RX2/P2RX3	Heteromeric P2X2/P2X3 receptor	22953; 5024
	P2RX2 (human) /P2rx3 (rat)	Heteromeric P2X, human 2 and rat 3 receptor	22953; 5024
	P2RX2/P2RX3	Chimeric P2RX2/P2RX3 receptor	22953; 81739
Chloride channels	GABRA1-GABRB1-GABRG2	Gamma-aminobutyric acid (GABA) A receptor, alpha 1, beta 1, gamma 2	2554; 2560; 2566
	GLRA1	Glycine receptor, alpha 1	2741
Transient receptor potential channels	TRPA1	ANKTM1, Transient receptor potential cation channel subfamily A, member 1	8989
	TRPC3	Transient receptor potential cation channel, subfamily C, member 3	7222
	TRPC5	Transient receptor potential cation channel, subfamily C, member 5	7224
	TRPC6	Transient receptor potential cation channel, subfamily C, member 6	7225
	TRPC7	Transient receptor potential cation channel, subfamily C, member 7	57113
	TRPM2	Transient receptor potential cation channel, subfamily M, member 2	7226
	TRPM5	Transient receptor potential cation channel, subfamily M, member 5	29850
	TRPM8	Transient receptor potential cation channel, subfamily M, member 8	79054
	TRPV1	Transient receptor potential cation channel, subfamily V, member 1	7442
	TRPV2	Transient receptor potential cation channel, subfamily V, member 2	51393

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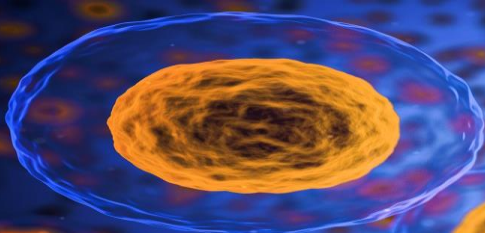


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Assay List

Target Class: Voltage-Gated Ion Channels			
Sub-family	Symbol	Aliases / Other Designations	GenID
Voltage-gated Ca ²⁺ channels	CACNA1C (Cav1.2)	Ca ²⁺ channel, voltage-dependent, L type, alpha 1C subunit	775
	CACNA1D (Cav1.3)	Ca ²⁺ channel, voltage-dependent, L type, alpha 1D subunit	776
	CACNA1B (Cav2.2) <i>endogenous</i>	Ca ²⁺ channel, voltage-dependent, N type, alpha 1B subunit	774
	CACNA1I (Cav3.3)	Ca ²⁺ channel, voltage-dependent, T type, alpha 1I subunit	8911
Voltage-gated K ⁺ channels	KCNA5 (Kv1.5)	K ⁺ voltage-gated channel, Shaker-related subfamily A, member 5	3741
	KCNB1 (Kv2.1)	K ⁺ voltage-gated channel, Shab-related subfamily B, member 1	3745
	Kcnq4 (Kv7.4) <i>(mouse)</i>	Mouse K ⁺ voltage-gated channel subfamily Q, member 4	60613
Inwardly rectifying K ⁺ channels	KCNJ4 (Kir2.3)	K ⁺ inwardly-rectifying channel, subfamily J, member 4	3761
Voltage-gated Na ⁺ channels	SCN5A (Nav1.5)	Na ⁺ channel, voltage-gated, type V, alpha subunit	6331
	SCN9A (Nav1.7)	Na ⁺ channel, voltage-gated, type IX, alpha subunit	6335
Store-operated Ca ²⁺ channels	CRAC	ORAI1(calcium release-activated calcium modulator 1) + STIM-1 (stromal interaction molecule 1)	84876; 6786
Calcium-activated Cl ⁻ channels	TMEM16A	Trans-membrane protein 16A (Cl channel)	55107
K ⁺ /Na ⁺ hyperpolarization-activated CNG channels	HCN2	Hyperpolarization activated cyclic nucleotide-gated potassium channel 2	610
	HCN4	Hyperpolarization activated cyclic nucleotide-gated potassium channel 4	10021

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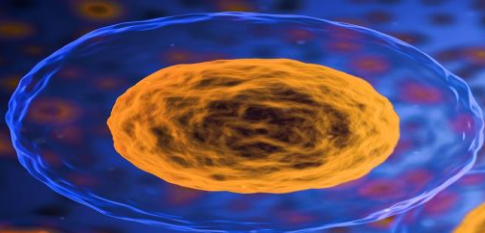


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Target Class: Transporters			
Sub-family	Symbol	Aliases / Other Designations	GeneID
ATP binding cassette	MRP1	ATP-binding cassette, sub-family C, member 1	4363
	MRP4 (ABCC4)	ATP-binding cassette, sub-family C (CFTR/MRP), member 4	10257
Glucose transporters	Slc2a1 (GLUT1) (<i>rat</i>)	Slc2a1 solute carrier family 2 (facilitated glucose transporter), member 1	24778
	Slc2a2 (GLUT2) (<i>rat</i>)	Slc2a2 solute carrier family 2 (facilitated glucose transporter), member 2	25351
	Slc2a3 (GLUT3) (<i>rat</i>)	Slc2a3 solute carrier family 2 (facilitated glucose transporter), member 3	25551
	SLC2A1 (GLUT1) (<i>canine</i>)	SLC2A1 solute carrier family 2 (facilitated glucose transporter), member 1	482437
	SLC2A2 (GLUT2) (<i>canine</i>)	SLC2A2 solute carrier family 2 (facilitated glucose transporter), member 2	488165
	SLC2A3 (GLUT3) (<i>canine</i>)	SLC2A2 solute carrier family 2 (facilitated glucose transporter), member 3	403997
Neurotransmitter transporters	SLC6A3	DAT, Dopamine transporter	6531
	SLC6A1	GAT1, GABA transporter 1	6529
	SLC6A12	BGT1/ GAT2, GABA transporter 1	6539
	SLC6A11	GAT3/ GAT4, GABA transporter 3	6538
	SLC6A9	GLYT1, Glycin transporter 1	6536
	SLC6A5	GLYT2, Glycin transporter 2	9152
	SLC6A2	NET, Norepinephrine transporter	6530
Sodium phosphate cotransporters	SLC34A1 (NPT2a)	Solute carrier family 34 (sodium phosphate), member 1	6569
	Slc34a1 (NPT2a) (<i>rat</i>)	Solute carrier family 34 (sodium phosphate), member 1	25548
	SLC34A1 (NPT2a) (<i>canine</i>)	Solute carrier family 34 (sodium phosphate), member 1	479275
	SLC34A2 (NPT2b)	Solute carrier family 34 (sodium phosphate), member 2	10568
	SLC34A3 (NPT2c) (<i>mutant human</i>)	Solute carrier family 34 (sodium phosphate), member 3	142680
	Slc34a3 (NPT2c) (<i>mutant rat</i>)	Solute carrier family 34 (sodium phosphate), member 3	246234
-----	SLC40A1 (FPN1)	Solute carrier family 40	30061

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Target Class: Nuclear Hormone Receptors

Sub-family	Symbol	Aliases / Other Designations	GeneID
Nuclear hormone receptors	NR3C1	GR, Glucocorticoid receptor, nuclear receptor subfamily 3, group C, member 1	2908
	NR3C2	MR, mineralcorticoid receptor, nuclear receptor subfamily 3, group C, member 2	4306
	PPARA	PPAR-alpha, Peroxisome proliferator-activated receptor alpha	5465
	PPARG	PPAR-gamma, Peroxisome proliferator-activated receptor gamma	5468
	PGR	Progesteron receptor	5241

Target Class: Enzymes

Sub-family	Symbol	Aliases / Other Designations	GeneID
Adenylate cyclases	ADCY5	Adenylate cyclase 5	111
	ADCY6	Adenylate cyclase 6	112
Nitric oxide synthases	NOS2	Inducible nitric oxide synthase (type II)	4843
	NOS3	Nitric oxide synthase 3 (endothelial cell)	4846

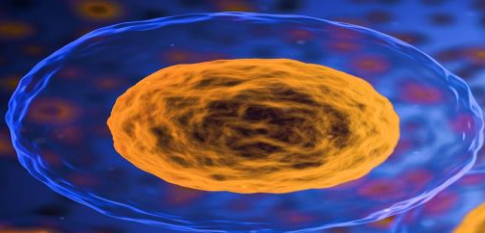
Target Class: Cytokine Receptors

Sub-family	Symbol	Aliases / Other Designations	GeneID
Cytokine receptors	TNFR (endogenous)	Tumor necrosis factor alpha receptor	2006

Target Class: Exchangers

Sub-family	Symbol	Aliases / Other Designations	GeneID
Na ⁺ /K ⁺ /Ca ²⁺ exchangers	SLC24A3 (NCKX3)	Solute carrier family 24 (sodium/potassium/calcium exchanger), member 3	57419
Na ⁺ /Ca ²⁺ exchangers	SLC8A1 (NCX1)	Solute carrier family 8 (sodium/calcium exchanger), member 1	6546
	SLC8A2 (NCX2)	Solute carrier family 8 (sodium/calcium exchanger), member 2	6543

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Target Class: Toll-Like Receptors

Sub-family	Symbol	Aliases / Other Designations	GeneID
Toll-like receptor 4	TLR4 (endogenous)	TOLL; CD284; hToll; ARMD10	7099
	Tlr4 (endogenous) (<i>mouse</i>)	Mouse toll-like receptor 4	21898

Target Class: mRNA Post-Transcriptional Regulation

Sub-family	Symbol	Aliases / Other Designations	GeneID
mRNA post-transcriptional regulation	NOS3	Nitric oxide synthase 3 (endothelial cell)	4846

Target Class: Tyrosine Kinase Receptors

Sub-family	Symbol	Aliases / Other Designations	GeneID
Tyrosine kinase receptor	Ntrk1 (endogenous) (<i>rat</i>)	Ntrk1 neurotrophic tyrosine kinase, receptor, type 1 (<i>Rattus norvegicus</i>)	59109
	NTRK2	Neurotrophic tyrosine kinase, receptor, type 2	4915

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