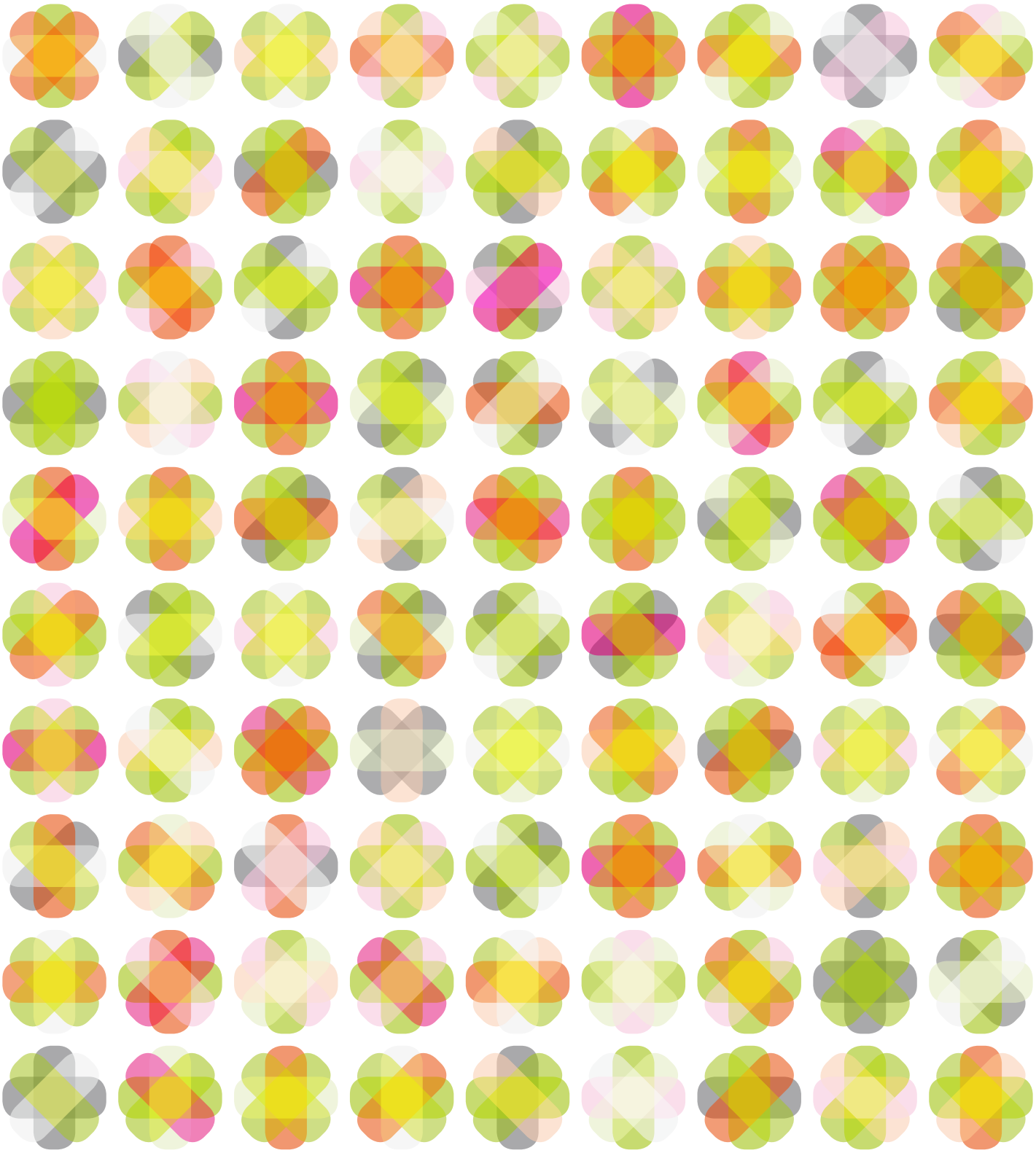

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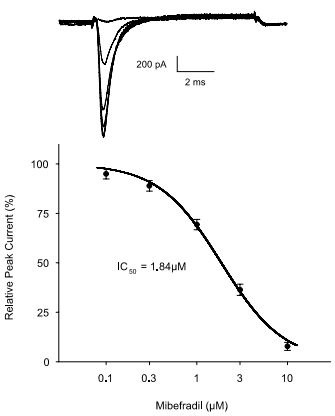


Nav1.5

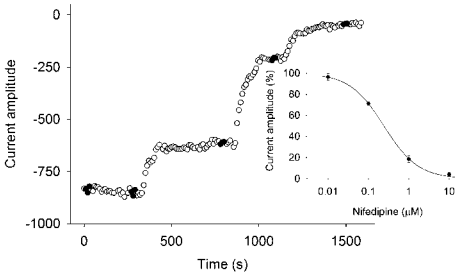
Gene: SCN5A

General	I_{Na}, member of the core cardiac panel
Standard throughput time	1 week (draft)
Source	human
Expression system	mammalian (CHO), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
References	Quinidine (IC_{50}: 13.66 µM) Propafenone (IC_{50}: 1.55 µM) Carbamazepine (IC_{50}: 59.22 µM) TTX (IC_{50}: 6.00 µM)
Additional options	GLP available Solubility tests Serum protein incubation Dose range finding Full glass equipment

Nav1.5-GLP

Gene: SCN5A

General	I_{Na}, member of the core cardiac panel
Standard throughput time	2 weeks (draft) final depending on sponsor's comments
Source	human
Expression system	mammalian (CHO), stable expression
Method	whole cell patch-clamping
Quality level	highest quality functional GLP study
Reference	Quinidine (IC_{50}: 13.66 µM) Propafenone ((IC_{50}: 1.55 µM)
Additional options	Dose formulation analysis (please inquire) Physiological temperature or RT Solubility tests Dose range finding Full glass equipment



$Ca_V1.2$

Gene: CACNA1C / CACNB2 or CACNA2D

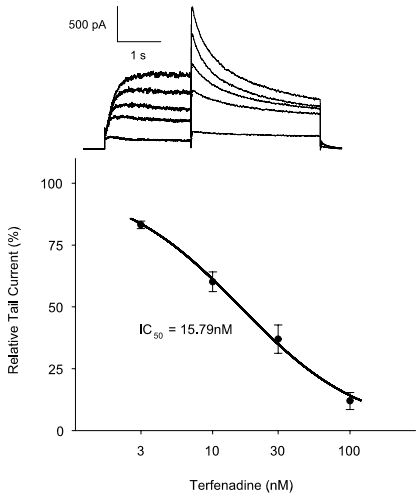
General	I_{Ca} / L-Type, member of the core cardiac panel
Standard throughput time	1 week (draft)
Source	human
Expression system	mammalian (CHO), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
References	Nifedipine (IC_{50}: 243 nM) Verapamil (IC_{50}: 12.26 µM) Isradipine (IC_{50}: 72.96 nM)
Additional options	GLP available Solubility tests Serum protein incubation Dose range finding Full glass equipment

$Ca_V1.2$-GLP

Gene: CACNA1C / CACNB2 or CACNA2D

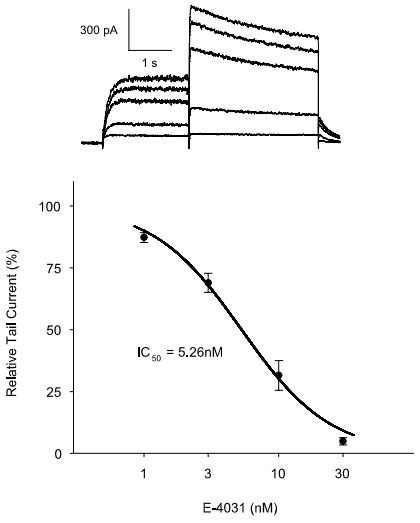
General	I_{Ca} / L-Type, member of the core cardiac panel
Standard throughput time	2 weeks (draft)
Source	human
Expression system	mammalian (CHO), stable expression
Method	whole cell patch-clamping
Quality level	highest quality functional GLP study
Reference	Nifedipine (IC_{50}: 627.99 nM)
Additional options	Dose formulation analysis (please inquire) Physiological temperature or RT Solubility tests Dose range finding Full glass equipment

hERG



Gene: KCNH2	
General	I_{Kr}, member of the core cardiac and antiarrhythmic panel
Standard throughput time	1 week
Source	human
Expression system	mammalian (CHO), stable expression human (HEK293), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
References	E-4031 (IC_{50}: 5.26 nM) Dofetilide (IC_{50}: 8.33 nM) Terfenadine (IC_{50}: 12.22 nM) Ketoconazole (IC_{50}: 3.33 µM) Haloperidol (IC_{50}: 19.47nM) Thioridazine (IC_{50}: 188.28 nM) Cisapride (IC_{50}: 63nM) Flecainide (IC_{50}: 1.99 µM)
Additional options	GLP available Solubility tests Serum protein incubation Dose range finding Full glass equipment

hERG-GLP

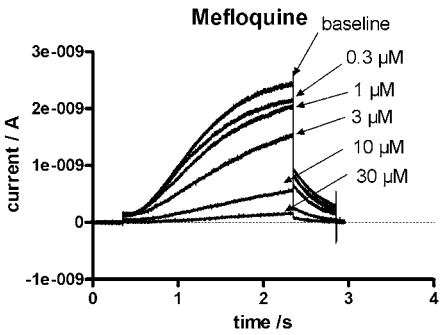


	Gene: KCNH2
General	I_{Kr}, member of the core cardiac panel
Standard throughput time	2 weeks (draft) final depending on sponsor's comments
Source	human
Expression system	human (HEK293), stable expression mammalian (CHO), stable expression
Method	whole cell patch-clamping
Quality level	highest quality functional GLP study
Reference	E-4031 HEK293: IC_{50}: 11.66 nM CHO: IC_{50}: 5.33 nM
Additional options	Dose formulation analysis (please inquire) Physiological temperature or RT Solubility tests Dose range finding Full glass equipment

hERG-trafficking

Gene: KCNH2	
General	I_{Kr}, member of the core cardiac panel
Standard throughput time	1 week
Source	human
Expression system	human (HEK293), stable expression
Method	Biohistochemistry (Luminescence) Electrophysiology (automated patch clamping)
Reference	Arsenic trioxide (ephys: IC_{50}: 2.1 µM) Pentamidine: (ephys: $IC5_0$: 26.3 µM)

K_V7.1/minK



Gene: KCNQ1/KCNE1	
General	I_{Ks}, member of the core cardiac panel
Standard throughput time	1 week
Source	human
Expression system	mammalian (CHO), stable expression human (HEK293), stable expression
Method	manual perforated patch-clamping
References	JNJ-303 (IC_{50}: 143.23 µM) Chromanol 293B (IC_{50}: 6.22 µM) HMR1556 (IC_{50}: 0.11 µM) Mefloquine (IC_{50}: 3.66 µM)
Additional options	GLP available Solubility tests Serum protein incubation Dose range finding Full glass equipment

K_V7.1/minK (KCNQ1/KCNE1)-GLP

Gene: KCNQ1/KCNE1

General	I_{Ks}, member of the core cardiac panel
Standard throughput time	2 weeks (draft) final depending on sponsor's comments
Source	human
Expression system	human (HEK293), stable expression
Method	manual perforated patch-clamping
Quality level	highest quality functional GLP study
References	JNJ-303 (IC_{50}: 143.23 nM)
Additional options	Dose formulation analysis (please inquire) Physiological temperature or RT Solubility tests Dose range finding Full glass equipment

K_V4.3

Gene: KCND3

General	I_{to}, member of the cardiac panel
Standard throughput time	1 week
Source	human
Expression system	mammalian (CHO), stable expression human (HEK293), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
References	Dapoxitine (IC_{50}: 12.4 µM)
Additional options	Solubility tests Serum protein incubation Dose range finding Full glass equipment

K_V4.3 / KChIP2

Gene: KCND3 / KCHIP2

General	I_{to}, member of the cardiac panel
Standard throughput time	1 week
Source	human
Expression system	mammalian (CHO), stable expression human (HEK293), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
References	Dapoxitine
Additional options	Solubility tests Serum protein incubation Dose range finding Full glass equipment

Kir 2.1

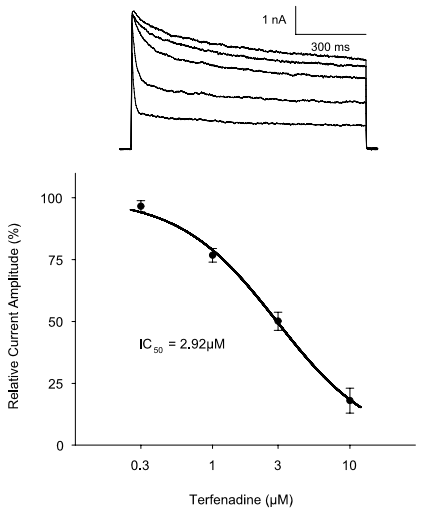
Gene: KCNJ2

General	I_{to}, member of the cardiac panel
Standard throughput time	1 week
Source	human
Expression system	mammalian (CHO), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
References	ML 133 HCl pH 7.4 (IC_{50}: 2.7 µM) ML 133 HCl pH 8.5 (IC_{50}: 0.3 µM)
Additional options	Solubility tests Serum protein incubation Dose range finding Full glass equipment

HCN4

Gene: HCN4

General	I_{funny}, member of the cardiac panel
Standard throughput time	1 week
Source	human
Expression system	mammalian (CHO), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
References	ZD7288 Ivabradine
Additional options	Solubility tests Serum protein incubation Dose range finding Full glass equipment



K_V1.5

Gene: KCNA5

General	member of the cardiac panel
Standard throughput time	1 week
Source	human
Expression system	mammalian (CHO), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
References	Terfenadine (IC_{50}: 2.99 µM), Nifedipine (IC_{50}: 45.55 µM)
Additional options	Solubility tests Serum protein incubation Dose range finding Full glass equipment

Ca_V3.2

Gene: CACNA1H

General	member of the cardiac panel
Standard throughput time	1 week
Source	human
Expression system	human (HEK293), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
Reference	Mibefradil (IC_{50}: 143.77 nM) Valproic Acid
Additional options	Solubility tests Serum protein incubation Dose range finding Full glass equipment

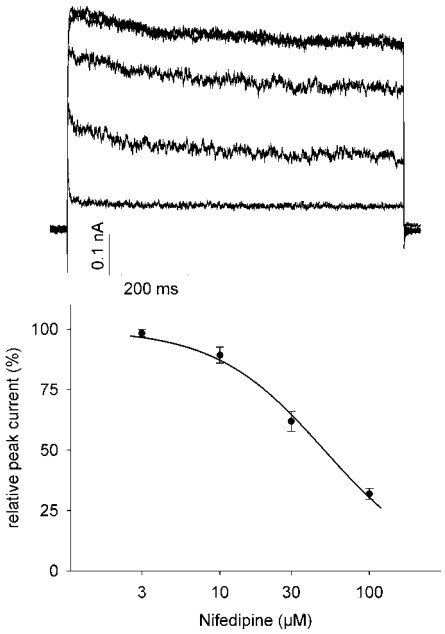
hERG; $Na_V1.5$; K_VLQT/minK; $K_V1.5$

Genes: KCNH2 (hERG)
SCN5A (Nav1.5)
KCNQ1/KCNE1 (KvLQT/minK)
KCNA5 (Kv1.5)

Standard throughput time	3 weeks (draft)
Source	human recombinant channels
Expression system	mammalian (CHO, HEK 293), stable expression
Method	patch-clamping in the presence of a physiological albumin or serum protein concentration, automated patch-clamping (Q-Patch)
Quality level	high quality functional assay
References	see respective ion channel
Further protein options	please inquire
Additional readouts	solubility check, stability check

\+ to be used to anticipate physiological conditions / unbound fraction effects in presence of serum proteins

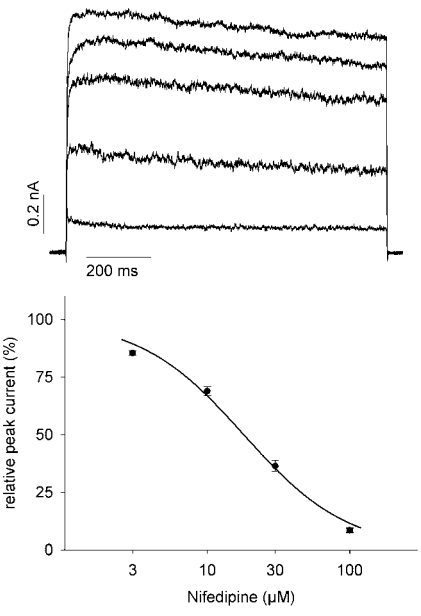
If serum proteins are present during ion channel testing, IC_{50} values may be higher than previously measured for compounds due to a decrease in the unbound fraction of the test compound (ETPCfree). This reflects a more physiological situation.



K_V1.1

Gene: KCNA1

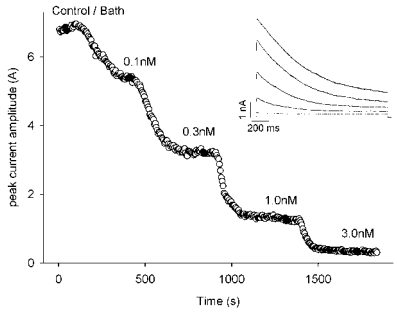
Standard throughput time	2 weeks
Source	human
Expression system	mammalian (CHO), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
Reference	Nifedipine (IC_{50}: 49.99 µM) Hongotoxin



K_V1.2

Gene: KCNA2

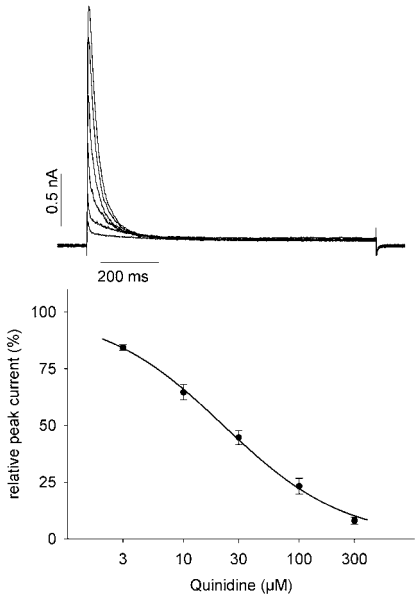
Standard throughput time	2 weeks
Source	human
Expression system	mammalian (CHO), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
Reference	Nifedipine (IC_{50}: 18.00 µM) Hongotoxin



$K_V1.3$

Gene: KCNA3

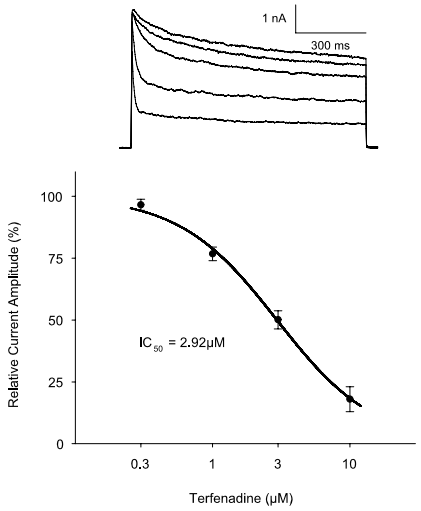
General	member of the immunology panel
Standard throughput time	2 weeks
Source	human
Expression system	mammalian (CHO), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch) fluorescence (FLEX Station)
Reference	Margatoxin (IC_{50}: 268.77 pM)



$K_V1.4$

Gene: KCNA4

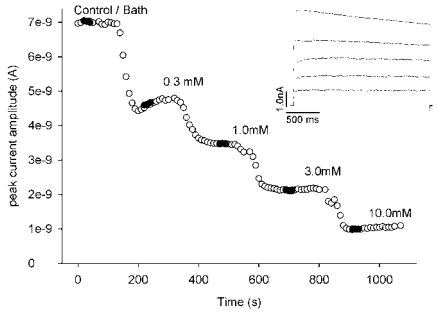
Standard throughput time	2 weeks
Source	human
Expression system	mammalian (CHO), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch) fluorescence (FLEX Station)
Reference	Quinidine (IC_{50}: 22.13 µM)



K_V1.5

Gene: KCNA5

General	member of the cardiac and antiarryhthmic panel
Standard throughput time	1 week
Source	human
Expression system	mammalian (CHO), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
Reference	Terfenadine (IC_{50}: 2.99 µM), Nifedipine (IC_{50}: 45.55 µM)



K_V1.6

Gene: KCNA6

Standard throughput time	1 week
Source	human
Expression system	mammalian (CHO), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch) fluorescence (FLEX Station)
Reference	4-AP (IC_{50}: 1.11 mM)

K_V2.1

Gene: KCNB1

Standard throughput time	2 weeks
Source	human
Expression system	human (HEK293), stable expression mammalian (CHO), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)

K_V2.2

Gene: KCNB2

Standard throughput time	2 weeks
Source	human
Expression system	human (HEK293), stable expression mammalian (CHO), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)

KV7.1

Gene: KCNQ1

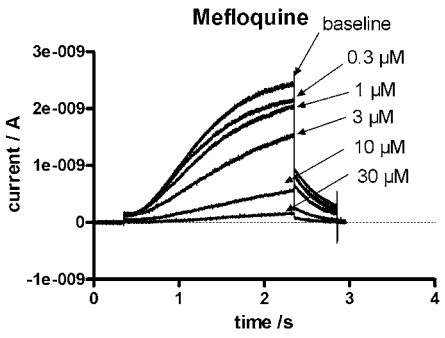
Standard throughput time	1 week (draft)
Source	human
Expression system	mammalian (CHO), stable expression human (HEK293), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)

K_V7.1/minK

Gene: KCNQ1/KCNE1

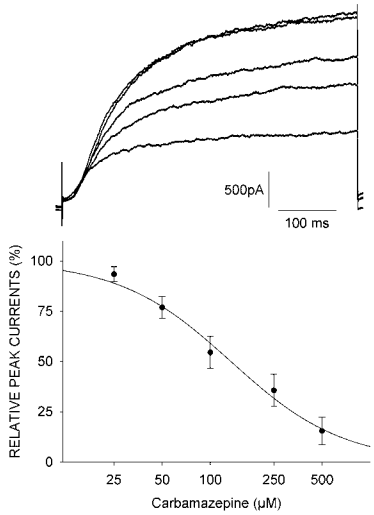
General	I_{Ks}, member of the core cardiac panel
Standard throughput time	1 week
Source	human
Expression system	mammalian (CHO), stable expression human (HEK293), stable expression
Method	manual perforated patch-clamping
References	JNJ-303 (IC_{50}: 143.23 nM) Chromanol 293B (IC_{50}: 6.22 µM) HMR1556 (IC_{50}: 0.11 µM) Mefloquine (IC_{50}: 3.66 µM)

K_V7.1/minK (KCNQ1/KCNE1)-GLP



Gene: KCNQ1/KCNE1	
General	member of the cardiac panel
Standard throughput time	2 weeks (draft) final depending on sponsor's comments
Source	human
Expression system	human (HEK293), stable expression
Method	manual perforated patch-clamping
Quality level	highest quality functional GLP study
References	JNJ-303 (IC_{50}: 143.23 nM)
Additional options	Dose formulation analysis (please inquire) Physiological temperature or RT Solubility tests Dose range finding Full glass equipment

K_V7.2



Gene: KCNQ2	
General	member of the CNS and antiepileptic Panel
Standard throughput time	1 week
Source	human
Expression system	mammalian (CHO), stable expression human (HEK293), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
Reference	XE991 (IC_{50}: 1.27 µM) Diclofenac Meclofenamate

K_V7.3

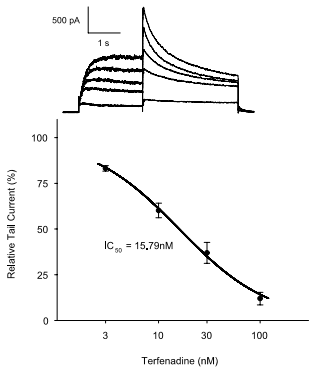
Gene: KCNQ3	
General	member of the CNS and antiepileptic Panel
Standard throughput time	1 week
Source	human
Expression system	mammalian (CHO), stable expression
Method	manual patch-clamping
Reference	XE991

K_V7.2/7.3

Gene: KCNQ3

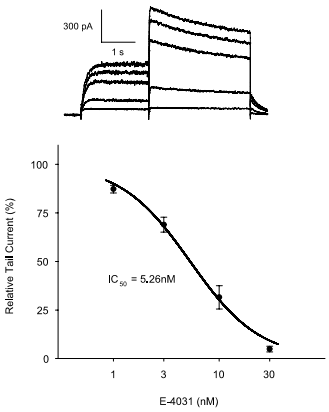
General	M-current, member of the CNS and antiepileptic Panel
Standard throughput time	1 week
Source	human
Expression system	mammalian (CHO), stable expression
Method	manual patch-clamping
Reference	XE991

hERG



Gene: KCNH2

General	I_{Kr}, member of the core cardiac and antiarrhythmic panel
Standard throughput time	1 week
Source	human
Expression system	mammalian (CHO), stable expression human (HEK293), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
References	E-4031 (IC_{50}: 5.26 nM) Dofetilide (IC_{50}: 8.33 nM) Terfenadine (IC_{50}: 12.22 nM) Ketoconazole (IC_{50}: 3.33 µM) Haloperidol (IC_{50}: 19.47nM) Thioridazine (IC_{50}: 188.28 nM) Cisapride (IC_{50}: 63nM) Flecainide (IC_{50}: 1.99 µM)
Additional options	GLP available Solubility tests Serum protein incubation Dose range finding Full glass equipment



hERG-GLP

Gene: KCNH2

General	I_{Kr}, member of the core cardiac panel
Standard throughput time	2 weeks (draft) final depending on sponsor's comments
Source	human
Expression system	human (HEK293), stable expression mammalian (CHO), stable expression
Method	whole cell patch-clamping
Quality level	highest quality functional GLP study
Reference	E-4031 HEK293: IC_{50}: 11.66 nM CHO: IC_{50}: 5.33 nM

hERG-trafficking

Gene: KCNH2

General	I_{Kr}, member of the core cardiac panel
Standard throughput time	1 week
Source	human
Expression system	human (HEK293), stable expression
Method	Biohistochemistry (Luminescence) Electrophysiology (automated patch clamping)
Reference	Arsenic trioxide (ephys: IC_{50}: 2.1 µM) Pentamidine: (ephys: IC_{50}: 26.3 µM)

K_V4.3

Gene: KCND3

General	I_{to}, member of the cardiac panel
Standard throughput time	1 week
Source	human
Expression system	mammalian (CHO), stable expression human (HEK293), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
References	Dapoxitine (IC_{50}: 12.4 µM)

K_V4.3 / KChIP2

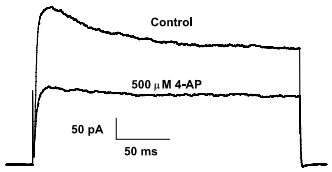
Gene: KCND3 / KCHIP2

General	I_{to}, member of the cardiac panel
Standard throughput time	1 week
Source	human
Expression system	mammalian (CHO), stable expression human (HEK293), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
References	Dapoxitine

Kir 2.1

Gene: KCNJ2	
General	member of the cardiac panel
Standard throughput time	1 week
Source	human
Expression system	mammalian (CHO), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
References	ML 133 HCl pH 7.4 (IC_{50}: 2.7 µM ML 133 HCl pH 8.5 (IC_{50}: 0.3 µM)

Neuroblastoma whole potassium



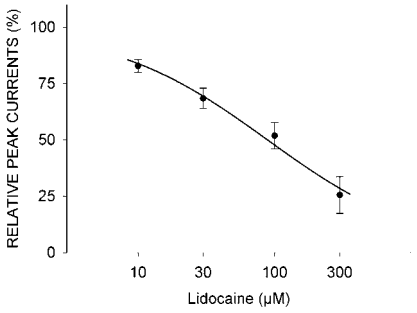
Gene: neuronal voltage gated potassium channels	
General	endogenous expressed potassium channels
Standard throughput time	1 week
Source	mouse (N1E-115) Mouse neuroblastoma x Rat neurone hybrid (ND7/23)
Expression system	N1E-115 ND7/23
Method	manual patch-clamping automated patch-clamping (Q-Patch)
Reference	4-AP (IC_{50}: 101.88 µM, N1E-115)

$Na_V1.1$

Gene: SCN1A / SCNB1

General	member of the CNS and antiepileptic Panel
Standard throughput time	2 weeks
Source	human
Expression system	human (HEK293), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
Reference	TTX

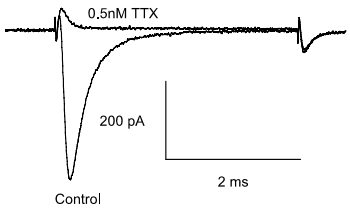
$Na_V1.2$



Gene: SCN2A / SCN1B

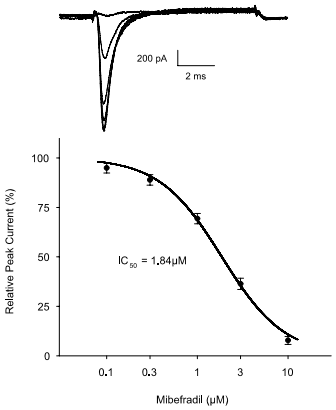
General	member of the CNS and antiepileptic Panel
Standard throughput time	2 weeks
Source	human
Expression system	human (HEK293), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
Reference	Lidocaine (IC_{50}: 130.20 µM) TTX

$Na_V1.3$



Gene: SCN3A

General	member of the CNS and antiepileptic Panel
Standard throughput time	2 weeks
Source	human
Expression system	mammalian (CHO), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
Reference	TTX (IC_{50}: 5.22 nM)



$Na_V1.5$

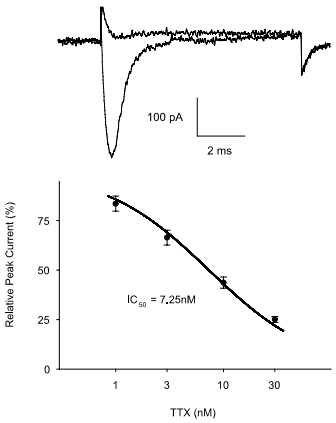
Gene: SCN5A

General	I_{Na}, member of the core cardiac and antiarrhythmic panel
Standard throughput time	1 week (draft)
Source	human
Expression system	mammalian (CHO), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
Reference	Quinidine (IC_{50}: 13.66 µM), Propafenone (IC_{50}: 1.55 µM) Carbamazepine (IC_{50}: 59.22 µM), TTX (IC_{50}: 6.00 µM)

$Na_V1.5$ GLP

Gene: SCN5A

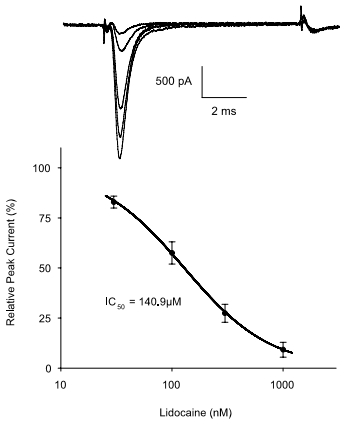
General	I_{Na}, member of the core cardiac panel
Standard throughput time	2 weeks (draft) final depending on sponsor's comments
Source	human
Expression system	mammalian (CHO), stable expression
Method	whole cell patch-clamping
Quality level	highest quality functional GLP study
Reference	Quinidine (IC_{50}: 13.66 µM), Propafenone (IC_{50}: 1.55 µM)



NaV1.6

Gene: SCN8A

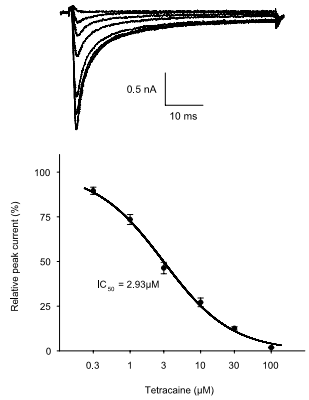
General	member of the CNS, antiepileptic and pain Panel
Standard throughput time	2 weeks
Source	human
Expression system	mammalian (CHO), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
Reference	TTX (IC_{50}: 7.33 nM)
	Lidocaine (IC_{50}: 376.86 µM)



$Na_V1.7$

Gene: SCN9A

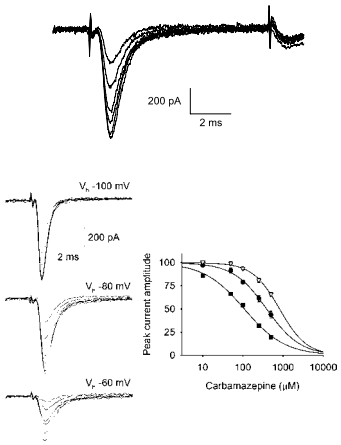
General	member of the CNS, antiepileptic and pain Panel
General	common target for pain
Standard throughput time	2 weeks
Source	human
Expression system	mammalian (CHO), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
Reference	TTX (IC_{50}: 29.73 nM) Lidocaine (IC_{50}: 140.88 µM) Mexiletine (IC_{50}: 333.08 µM) ProTx II



$Na_V1.8$

Gene: SCN10A / SCNB3

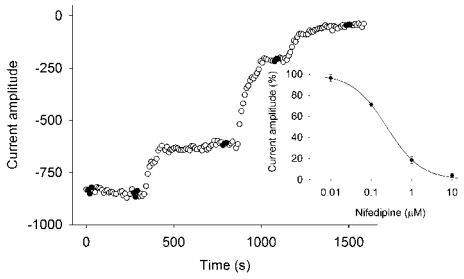
General	member of the CNS, antiepileptic and pain Panel
Standard throughput time	2 weeks
Source	human
Expression system	mammalian (CHO), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
Reference	A-803467 (IC_{50}: 42.00 nM) Tetracaine (IC_{50}: 2.99 µM)



Neuroblastoma whole sodium (TTX sensitive sodium channels)

Gene: TTX sensitive neuronal voltage gated sodium channels

General	member of the CNS and antiepileptic Panel
Standard throughput time	2 weeks
Source	mouse
Expression system	N1E-115 neuroblastoma cells ($Na_V1.1$, $Na_V1.2$, $Na_V1.3$, $Na_V1.6$, $Na_V1.7$)
Method	manual patch-clamping automated patch-clamping (Q-Patch)
Reference	Carbamazepine (IC_{50}: 398.66 µM)



$Ca_V1.2$

Gene: CACNA1C / CACNB2 or CACNA2D

General	I_{Ca} / L-Type, member of core and antiarrhythmic panel
Standard throughput time	1 week (draft)
Source	human
Expression system	mammalian (CHO), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
References	Nifedipine (IC_{50}: 243 nM) Verapamil (IC_{50}: 12.26 µM) Isradipine (IC_{50}: 72.96 nM)

$Ca_V1.2$-GLP

Gene: CACNA1C / CACNB2 or CACNA2D

General	I_{Ca} / L-Type, member of the core cardiac panel
Standard throughput time	2 weeks (draft) final depending on sponsor's comments
Source	human
Expression system	mammalian (CHO), stable expression
Method	whole cell patch-clamping
Quality level	highest quality functional GLP study
Reference	Nifedipine (IC_{50}: 627.99 nM)

$Ca_V1.3$

Gene: CACNA1D / CACN3 or CACNA2D

Standard throughput time	2 weeks
Source	human
Expression system	mammalian (CHO), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
References	Nifedipine (IC_{50}: 2.15 nM) Verapamil (IC_{50}: 17.82 µM) Isradipine (IC_{50}: 79.40 nM)

$Ca_V2.1$

Gene: CACNA1A / CACNB3 / CACNA2D2 or CACNA2D4

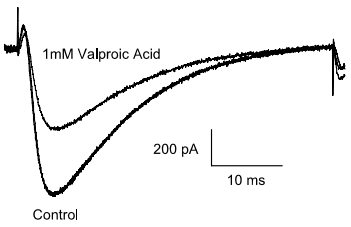
General	member of the CNS and antiepileptic panel
Standard throughput time	2 weeks
Source	human
Expression system	human (HEK 293) semistable expression
Method	whole cell patch-clamping
References	Carbamazepine (IC_{50}: 452.46 µM) CoCl2

$Ca_V3.1$

Gene: CACNA1G

Standard throughput time	2 weeks
Source	human
Expression system	human (HEK293), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
Reference	Mibefradil

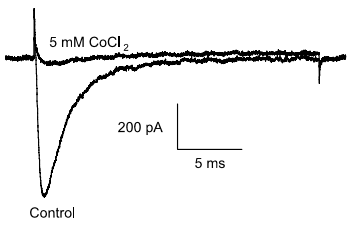
$Ca_V3.2$



Gene: CACNA1H

General	member of the antiarrhythmic panel
Standard throughput time	2 weeks
Source	human
Expression system	human (HEK293), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
Reference	Mibefradil (IC_{50}: 143.77 nM) Valproic Acid

Neuroblastoma whole calcium



Gene: neuronal voltage gated calcium channels

Standard throughput time	2 weeks
Source	mouse
Expression system	mammalian N1E-115 neuroblastoma

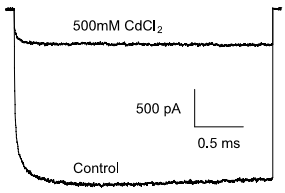
HCN1

Gene: HCN1	
Standard throughput time	2 weeks
Source	human
Expression system	mammalian (CHO) human (HEK293)
Method	manual patch-clamping
Reference	ZD -7288 Ivabradine

HCN4

Gene: HCN4	
General	member of the cardiac and antiarrhythmic panel
Standard throughput time	2 weeks
Source	human
Expression system	mammalian (CHO) human (HEK293)
Method	manual patch-clamping
Reference	ZD -7288 Ivabradine

CIC-2



Gene: CLCN2	
General	member of the CNS and antiepileptic panel
Standard throughput time	2 weeks
Source	human
Expression system	mammalian (CHO) human (HEK293)
Method	manual patch-clamping
References	Flufenamic acid CdCl2

CFTR

Gene: CFTR	
General	mutations cause cystic fibrosis
Standard throughput time	2 weeks (draft)
Source	human
Expression system	mammalian (CHO), stable expression human (HEK293), stable expression
Method	whole cell patch-clamping
Reference	CFTR Inh 172

$GABA_A$ ($\alpha_1\beta_2\gamma_2$)

Gene: GABRA1 / GABRB2 / GABRG2

General	member of the CNS, antiepileptic and pain panel
Standard throughput time	1 week
Source	human
Expression system	human (Ltk, HEK293), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch) fluorescence (FLEX Station)
Reference	positive allosteric modulator: Diazepam (EC_{50}: 85.1 nM) antagonist: Bicuculline (IC_{50}: 0.74 µM)

$GABA_A$ ($\alpha_1\beta_3\gamma_2$)

Gene: GABRA1 / GABRB3 / GABRG2

General	member of the CNS, antiepileptic and pain panel
Standard throughput time	2 weeks
Source	human
Expression system	human (HEK293), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch) fluorescence (FLEX Station)
Reference	positive allosteric modulator: Diazepam (EC_{50}: 1.39 µM) antagonist: Bicuculline (IC_{50}: 265.00 nM)

$GABA_A$ ($\alpha_2\beta_2\gamma_2$)

Gene: GABRA2 / GABRB2 / GABRG2

General	member of the CNS, antiepileptic and pain panel
Standard throughput time	3 weeks
Source	human
Expression system	human (Ltk, HEK293), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch) fluorescence (FLEX Station)
Reference	positive allosteric modulator: Diazepam antagonist: Bicuculline (IC_{50}: 170.44 nM)

$GABA_A$ ($\alpha_3\beta_2\gamma_2$)

Gene: GABRA3 / GABRB2 / GABRG2

General	member of the CNS, antiepileptic and pain panel
Standard throughput time	3 weeks
Source	human
Expression system	human (Ltk, HEK293), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch) fluorescence (FLEX Station)
Reference	positive allosteric modulator: Diazepam antagonist: Bicuculline (IC_{50}: 635.00 nM)

$GABA_A$ ($\alpha_5\beta_2\gamma_2$)

Gene: GABRA5 / GABRB2 / GABRG2

General	member of the CNS, antiepileptic, pain and memor panel
Standard throughput time	3 weeks
Source	human
Expression system	human (Ltk, HEK293), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch) fluorescence (FLEX Station)
Reference	positive allosteric modulator: Diazepam antagonist: Bicuculline (IC_{50}: 146.33 nM)

$GABA_A$ ($\alpha_4\beta_3\delta$)

Gene: GABRA4 / GABRB3 / GABRD

Standard throughput time	1 week
Source	human
Expression system	human (HEK293), mammalian (CHO) semi stable expression
Method	manual patch-clamping
Reference	positive allosteric modulator: Alphaxolone (EC_{50}: 0.83 µM),

$GABA_A$ ($\alpha_6\beta_3\delta$)

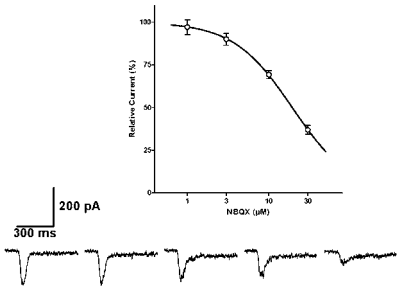
Gene: GABRA6 / GABRB3 / GABRD

Standard throughput time	1 week
Source	human
Expression system	human (HEK293), mammalian (CHO), semi stable expression
Method	manual patch-clamping
Reference	positive allosteric modulator: Na-Pentobarbital (EC_{50}: 1.17 mM)

$GlyR\alpha_3$

Gene: GLYRA3

General	member of the CNS, antiepileptic and pain panel
Standard throughput time	3 weeks
Source	human or rat
Expression system	human (HEK293), mammalian (CHO), stable expression
Method	manual patch-clamping, automated patch-clamping (Q-Patch)
Reference	Strychnine (IC_{50}: 51.99 nM) Tropisetron



AMPA

Gene: GRIA1	
General	member of the CNS, antiepileptic, pain and memory panel
Standard throughput time	3 weeks
Source	human
Expression system	mamallian (CHO), stable expression
Method	manual patch-clamping
Reference	NBQX (IC_{50}: 19.33 µM)

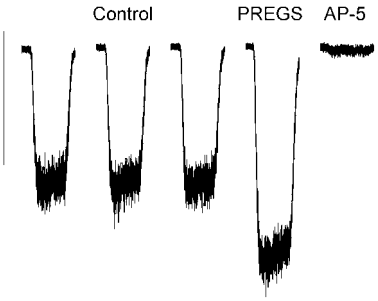
GRIK2

Gene: GRIK2	
General	Kainate Receptor
Standard throughput time	1 week (draft)
Source	human
Expression system	human (HEK293) mammalian (CHO)
Method	manual patch-clamping
References	ZK200775 (IC_{50}: 38.24 µM)

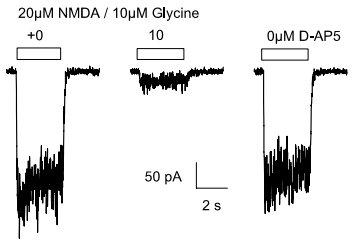
GRIK2/5

Gene: GRIK2 / GRIK5	
General	Kainate Receptor
Standard throughput time	1 week (draft)
Source	human
Expression system	human (HEK293) mammalian (CHO)
Method	manual patch-clamping
References	ZK200775 (IC_{50}: 21.12 µM)

NMDA (NR1/2A)



Gene: GRIN1/GRIN2A	
General	member of the CNS, antiepileptic, pain and memory panel
Standard throughput time	3 weeks
Source	human
Expression system	human (HEK 293), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
Reference	Antagonists: D-(–)-2-Amino-5-phosphonopentanoic acid (AP 5) (IC_{50}: 6.75 µM) Ketamin: (IC_{50}: 180 nM) positive allosteric modulator: Pregnenolone sulfate sodium salt



NMDA (NR1/2B)

Gene: GRIN1/GRIN2B

General	member of the CNS, antiepileptic, pain and memory panel
Standard throughput time	3 weeks
Source	human
Expression system	human (HEK 293), stable expression
Method	manual patch-clamping
Reference	Antagonist: D-(–)-2-Amino-5-phosphonopentanoic acid (AP 5) (IC_{50}: 6.77 µM) Ifenbrodil (IC_{50}: 1.91 µM) Traxoprodil (IC_{50}: 120.1 nM) Positive allosteric modulator: Pregnenolone sulfate sodium salt (IC_{50}: 55.18 µM)

NMDA (NR1/2C)

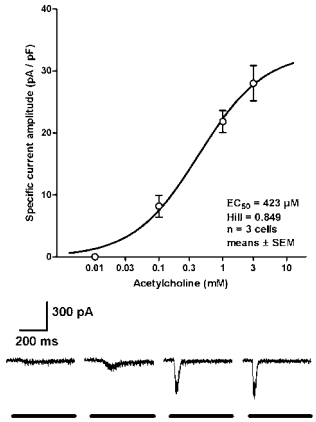
Gene: GRIN1/GRIN2C

General	member of the antiepileptic, pain and memory panel
Standard throughput time	3 weeks
Source	human
Expression system	human (HEK 293), stable expression
Method	manual patch-clamping
Reference	Antagonists: D-(–)-2-Amino-5-phosphonopentanoic acid (AP 5) CIQ positive allosteric modulator: Pregnenolone sulfate sodium salt

NMDA (NR1/2D)

Gene: GRIN1/GRIN2D

General	member of the antiepileptic, pain and memory panel
Standard throughput time	3 weeks
Source	human
Expression system	human (HEK 293), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
Reference	Antagonist CIQ: 4.00 µM (IC_{50}: 51.99 nM)



nAChR (α_7)

Gene: CHRNA7 / RIC-3

General	member of the CNS and memory panel
Standard throughput time	2 weeks
Source	human
Expression system	mammalian (GH4), stable expression
Method	manual patch-clamping
Reference	PMU-120596 (EC_{50}: 1.12 µM) NS 1738 (EC_{50}: 36.75 µM)

nAChR ($\alpha_3\beta_4$)

Gene: CHRNA3 / CHRNB4

Source	human
Expression system	human (HEK293) mammalian (CHO)
Method	manual patch-clamping

nAChR ($\alpha_4\beta_2$)

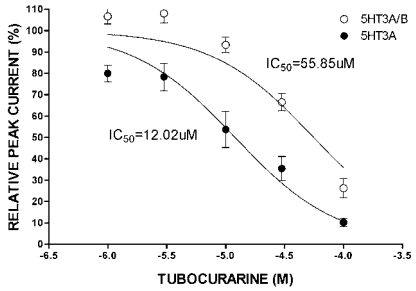
Gene: CHRNA4 / CHRNB2

General	member of the CNS and memory panel
Standard throughput time	2 weeks
Source	human
Expression system	human (HEK293), stable expression
Method	manual patch-clamping
Reference	reboxetine mesylate

nAChR ($\alpha_9\alpha_{10}$)

Gene: CHRNA9 / CHRNA10

Standard throughput time	4 weeks
Source	human
Expression system	human (HEK293) mammalian (CHO)
Method	manual patch-clamping



5HT3A (Serotonine receptor)

Gene: HTR3A

General	member of the CNS and antiemetic panel
Standard throughput time	2 weeks
Source	human
Expression system	human (HEK 293)
Method	manual patch-clamping
Reference	Tubocurarine (IC_{50}: 12.02 µM) Palonosetron (IC_{50}: 592.2 nM)

5HT3A/B (Serotonine receptor)

Gene: HTR3A / HTR3B

General	member of the CNS panel
Standard throughput time	2 weeks
Source	human
Expression system	human (HEK 293)
Method	manual patch-clamping
Reference	Tubocurarine (IC_{50}: 55.85 µM) Palonosetron (IC_{50}: 449.8 nM)

$P2X_1$

Gene: P2RX1

Standard throughput time	3 weeks
Source	human
Expression system	human (HEK 293), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch)
Reference	Suramine

$P2X_3$

Gene: P2RX3

Standard throughput time	3 weeks
Source	human
Expression system	human (HEK 293), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch) fluorescence (FLEX Station)
Reference	Suramine (IC_{50}: 128 nM) PPADS

$P2X_4$

Gene: P2RX4

General	member of the pain panel
Standard throughput time	3 weeks
Source	human
Expression system	human (HEK 293), stable expression
Method	manual patch-clamping automated patch-clamping (Q-Patch) fluorescence (FLEX Station)
Reference	Suramine (IC_{50}: 385.15 µM) PPADS

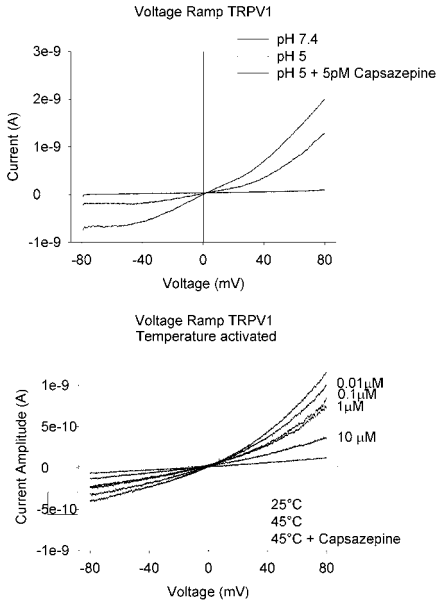
$P2X_7$

Gene: P2RX7

General	member of the CNS, inflammation, urology and pain panel
Standard throughput time	2 weeks
Source	human
Expression system	human (HEK 293)
Method	manual patch-clamping, automated patch-clamping (Q-Patch) fluorescence (FLEX Station)
Reference	Suramine (IC_{50}: 100.95 µM) PPADS

TRPA1

Gene: TRPA1	
Standard throughput time	2 weeks
Source	human
Expression system	human (HEK 293)
Method	manual patch-clamping, automated patch-clamping (Q-Patch) fluorescence (FLEX Station)
Reference	Agonist: AITC (EC_{50}: 2.12 µM) Supercinnamaldehyde Antagonists: Ruthenium Red (IC_{50}: 12.25 µM)



TRPV1

Gene: TRPV1 (VR1)	
General	member of the pain panel
Standard throughput time	2 weeks
Source	human
Expression system	human (HEK 293) mammalian (CHO)
Method	manual patch-clamping, automated patch-clamping (Q-Patch) fluorescence (FLEX Station)
Reference	Capsazepine (IC_{50}: 1.66 µM)

TRPV2

Gene: TRPV2	
General	member of the pain panel
Standard throughput time	2 weeks
Source	human
Expression system	human (HEK 293)
Method	manual patch-clamping, automated patch-clamping (Q-Patch) fluorescence (FLEX Station)
Reference	Agonist: L-α-lysophosphatidylinositol Δ 9-THC Antagonist: Tranilast

TRPV3

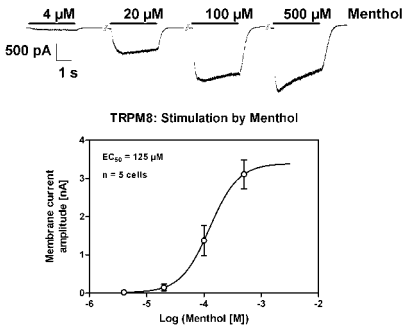
Gene: TRPV3

Standard throughput time	2 weeks
Source	human
Expression system	human (HEK 293) mammalian (CHO)
Method	manual patch-clamping, automated patch-clamping (Q-Patch) fluorescence (FLEX Station)

TRPV4

Gene: TRPV4

Standard throughput time	2 weeks
Source	human
Expression system	human (HEK 293) mammalian (CHO)
Method	manual patch-clamping, automated patch-clamping (Q-Patch) fluorescence (FLEX Station)
Reference	Agonist: GSK1016790A Antagonist: RN-1734



TRPM8

Gene: TRPM8

Standard throughput time	2 weeks
Source	human
Expression system	human (HEK 293) mammalian (CHO)
Method	manual patch-clamping, automated patch-clamping (Q-Patch) fluorescence (FLEX Station)
Reference	Agonist: Menthol (EC_{50}: 127 µM)

ASIC1a

Gene: ASIC1a, (ACCN2) long/short	
General	member of the pain panel
Standard throughput time	2 weeks
Source	human
Expression system	mammalian (CHO)
Method	manual patch-clamping, automated patch-clamping (Q-Patch) fluorescence (FLEX Station)
Reference	Amiloride (IC50: 18.14 µM)

ASIC1b

Gene: ASIC1b, (ACCN2)	
General	member of the pain panel
Standard throughput time	2 weeks
Source	human
Expression system	mammalian (CHO)
Method	manual patch-clamping, automated patch-clamping (Q-Patch) fluorescence (FLEX Station)
Reference	Amiloride

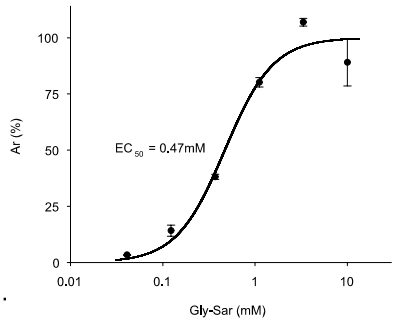
ASIC2

Gene: ASIC2, (ACCN1)	
Standard throughput time	2 weeks
Source	human
Expression system	mammalian (CHO)
Method	manual patch-clamping,
Reference	Amiloride

ASIC3

Gene: ASIC3, (ACCN3)	
Standard throughput time	2 weeks
Source	human
Expression system	mammalian (CHO)
Method	manual patch-clamping, automated patch-clamping (Q-Patch) fluorescence (FLEX Station)
Reference	Amiloride (IC_{50}: 38.26 µM)

B'SYS offers transporter screenings using the SURFE^{2}R technology and fluorescence based assays. Further test systems (cell lines) can be generated by B'SYS or given by the Sponsor.



PepT1

Gene: SLC15A1

Standard throughput time	2 weeks
Source	human
Expression system	mammalian (MDCK), stable expression
Method	Fluorescence
Quality level	SURFE2R technology or indirect (fluorescence) assay
Reference	Gly-Sar (EC_{50}: 0.47 µM)

GlyT1/GlyT2 (Glycine transporters)

Gene: SLC6A9/SLC6A5

Standard throughput time	8 weeks (draft)
Source	human
Expression system	mammalian
Method	Fluorescence
Quality level	SURFE2R technology or Indirect (fluorescence) assay
Reference	Doxepin Amitriptyline Nortriptyline Amoxapine

mGLUR1

Gene: GRM1

Standard throughput time	2 weeks (draft)
Source	human
Expression system	human (HEK 293)
Method	Fluorescence
Quality level	Indirect (fluorescence) assay
Reference	Glutamate

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Assay	Gene	Page
CiPA, Cardiac panel		
$Na_V1.5$ GLP	SCN5A	7
hERG GLP	KCNH2	9
$Ca_V1.2$ GLP	CACNA1C / CACNB2 / CACNA2D	8
$K_V7.1$ / minK GLP	KCNQ2 / KCNE1	10
$Na_V1.5$	SCN5A	7
hERG	KCNH2	9
$Ca_V1.2$	CACNA1C / CACNB2 / CACNA2D	8
$K_V7.1$ / minK	KCNQ2 / KCNE1	10
$K_V1.5$	KCNA5	17
$K_V4.3$	KCND3	21
$K_V4.3$ ChIP	KCND3 / CHIP	21
Kir2.1	KCNJ2	22
$Ca_V3.2$	CACNA1H	13
HCN4	HCN4	12

Assay	Gene	Page
CNS Screen		
$K_V7.2$ / KV7.3	KCNQ2/3	20
$Na_V1.1$	SCN1A	23
$Na_V1.2$	SCN2A	23
$Na_V1.3$	SCN3A	23
$Na_V1.6$	SCN8A	24
$Na_V1.7$	SCN9A	25
$Na_V1.8$	SCN10A / SCNB3	25
Neuroblastoma whole sodium (TTX sensitive sodium channels)		25
$Ca_V2.1$	CACNA1A / CACNB3 /	
	CACNA2D2 or CACNA2D4	27
CIC-2	CLCN2	28
$GABA_A$ ($\alpha1\beta2\gamma2$)	GABRA1 / GABRB2 / GABRG2	29
$GABA_A$ ($\alpha1\beta3\gamma2$)	GABRA1 / GABRB3 / GABRG2	29
$GABA_A$ ($\alpha2\beta2\gamma2$)	GABRA2 / GABRB2 / GABRG2	29
$GABA_A$ ($\alpha3\beta2\gamma2$)	GABRA3 / GABRB2 / GABRG2	30
GABAA ($\alpha5\beta2\gamma2$)	GABRA5 / GABRB2 / GABRG2	30
Glycine (GlyR$\alpha3$)	GLYRA3	31
nAChR ($\alpha7$)	CHRNA7	34
nAChR ($\alpha4\beta2$)	CHRNA4 / CHRNB2	34
Serotonin 5HT3A	HTR3A	35
Serotonin 5HT3A/B	HTR3A/B	35
$P2X_7$	P2RX7	36
AMPA	GRIA1	32
NMDA (NR1/2A)	GRIN1/GRIN2A	32
NMDA (NR1/2B)	GRIN1/GRIN2B	32

Assay	Gene	Page
Antiarrhythmic panel		
hERG	KCNH2	9
$K_V1.5$	KCNA5	17
$Na_V1.5$	SCN5A	24
HCN4	HCN4	12
$Ca_V1.2$	CACNA1C / CACNB2 / CACNA2D	26
$Ca_V3.2$	CACNA1H	27

Assay	Gene	Page
Antiepileptic panel		
$K_V7.2$	KCNQ2	19
$K_V7.2/K_V7.3$		20
$Na_V1.1$	SCN1A	23
$Na_V1.2$	SCN2A	23
$Na_V1.3$	SCN3A	23
$Na_V1.6$	SCN8A	24
$Na_V1.7$	SCN9A	25
$Na_V1.8$	SCN10A / SCNB3	25
Neuroblastoma whole sodium (TTX sensitive sodium channels)		25
$Ca_V2.1$	CACNA1A / CACNB3 /	
	CACNA2D2 or CACNA2D4	27
CIC-2	CLCN2	28
GABAA ($\alpha_1\beta_2\gamma_2$)	GABRA1 / GABRB2 / GABRG2	29
GABAA ($\alpha_1\beta_3\gamma_2$)	GABRA1 / GABRB3 / GABRG2	29
GABAA ($\alpha_2\beta_2\gamma_2$)	GABRA2 / GABRB2 / GABRG2	29
GABAA ($\alpha_3\beta_2\gamma_2$)	GABRA3 / GABRB2 / GABRG2	30
GABAA ($\alpha_5\beta_2\gamma_2$)	GABRA5 / GABRB2 / GABRG2	30
Glycine GlyRα_3	GLRA3	31
AMPA	AMPA1	32
NMDA (NR1/2A)	GRIN1/GRIN2A	32
NMDA (NR1/2B)	GRIN1/GRIN2B	32
NMDA (NR1/2C)	GRIN1/GRIN2C	32
NMDA (NR1/2D)	GRIN1/GRIN2D	32

Assay	Gene	Page
Memory panel		
$GABA_A$ ($\alpha_5\beta_2\gamma_2$)	GABRA5 / GABRB2 / GABRG2	30
AMPA	GRIA1	32
NMDA (NR1/2A)	GRIN1/GRIN2A	32
NMDA (NR1/2B)	GRIN1/GRIN2B	32
NMDA (NR1/2C)	GRIN1/GRIN2C	32
NMDA (NR1/2D)	GRIN1/GRIN2D	32
nAchR ($\alpha_4\beta_2$)	CHRNA4 / CHRNB2	34
nAchR (α_7)	CHRNA7	34
Pain panel		
$GABA_A$ ($\alpha_1\beta_2\gamma_2$)	GABRA1 / GABRB2 / GABRG2	29
$GABA_A$ ($\alpha_1\beta_3\gamma_2$)	GABRA1 / GABRB3 / GABRG2	29
$GABA_A$ ($\alpha_2\beta_2\gamma_2$)	GABRA2 / GABRB2 / GABRG2	29
$GABA_A$ ($\alpha_3\beta_2\gamma_2$)	GABRA3 / GABRB2 / GABRG2	30
$GABA_A$ ($\alpha_5\beta_2\gamma_2$)	GABRA5 / GABRB2 / GABRG2	30
Glycine ($GlyR\alpha_3$)	GLYRA3	31
AMPA	GRIA1	32
NMDA (NR1/2A)	GRIN1/GRIN2A	32
NMDA (NR1/2B)	GRIN1/GRIN2B	32
NMDA (NR1/2C)	GRIN1/GRIN2C	32
NMDA (NR1/2D)	GRIN1/GRIN2D	32
TRPV1	TRPV1 (VR1)	37
TRPV2	TRPV2	37
$Na_V1.6$	SCN8A	24
$Na_V1.7$	SCN9A	25
$Na_V1.8$	SCN10A / SCNB3	25
ASIC 1a	ACCN2	39
ASIC 1b	ACCN2	39
$P2X_4$	P2RX4	36
$P2X_7$	P2RX7	36

Assay	Gene / Organ Relevance	Page
Antiemetic panel		
Serotonin 5HT3A	HTR3A	35
Inflammation / apoptosis		
$P2X_7$	P2RX7 cns / microclial response renal glomerular (mesangial) apoptosis	36
Immunology panel		
$K_V1.3$	KCNA3 target for the selective suppression of CCR7- effector memory T-cells in T-cell mediated autoimmune diseases	16
Urology / renal panel		
$P2X_7$	P2RX7 urinary bladder mesangial apoptosis	36

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1

Request the assay type via e-mail and order and offer / confirmation of order.

Please indicate:
1. Your contact information (phone, fax number, e-mail)
2. GLP or non-GLP
3. Requested replicates
4. Requested concentrations
5. Number of compounds for each assay

You will receive our offer, order confirmation form and compound datasheets.
Please return the confirmation of order to B'SYS (by e-mail or fax).

2

Complete the provided order confirmation form and compound datasheets.

Required information for non-GLP studies
1. Compound designation
2. Molecular weight
3. Vehicle to be used
4. Solubility in vehicle
5. Storage conditions

Only for GLP-studies:
6 Batch number
7 Expiry / retest date

Send the compound datasheet via:
e-mail: assay@bsys.ch
fax: +41 61 721 77 41

Or along with the compounds to:
B'SYS GmbH
Benkenstrasse 254
CH-4108 Witterswil
Switzerland

3

You will receive our proposed study plan for review.

4

Compounds, format and amount required.

Ship the compounds in safely closed vials or plates to the address above.
The amount of compound required depends on its molecular weight and nature:

Stock solutions:
Your in house available stock solutions e.g. 250 µL DMSO at 10 mM

Solid compound for non-GLP studies:
Pre-weighed 10 µmol (typically around 5 mg for drug molecular weights)

Solid compound for GLP studies:
20 mg (true for typical molecular weight)

Study start
Upon arrival an acknowledgement of compound receipt will be sent to you via e-mail. The study is initiated

5

Study start.

Our assays usually require 1 to 6 weeks from compound arrival to completion of a draft report.
See specific assays for additional information.
Final completion of the report depends on when we receive your comments but is typically within two weeks of receipt of the comments.

6

Terms and conditions.

Our standard terms and conditions are outlined in the respective offer.

Calculation of prices and data-points

One data point corresponds to testing one concentration of the test item at a single cell
The following examples illustrate the calculation:

Single point screen:
Single point screens use one concentration at n = 2 or 3 cells, resulting in 2 or 3 data points per compound

2 Point screens:
Two point screens use 2 concentrations at n = 2 or 3 cells, i.e. 4 or 6 data points per compound
IC_{50} screens at n = 3:
The determination of an IC_{50} at 4 to 7 concentrations results in 12 to 21 data points per compound

Prices

BSYS is delivering high quality at very moderate prices.

Calculation example:
If the IC_{50} of a single compound is determined at 6 concentrations in triplicate 18 data points result.

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A

ACCN2 (long / short)	39
ACCN2	39
ACCN1	39
ACCN3	39
AMPA	32

C

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$Ca_V1.2$, I_{Ca}	8
$Ca_V1.2$-GLP, I_{Ca}	8
$Ca_V1.2$-GLP	26
$Ca_V1.3$	26
$Ca_V2.1$	27
$Ca_V3.1$	27
$Ca_V3.2$	27
ClC-2	28
CFTR	28

E

ENaC	–

G

$GABA_A$ ($\alpha_1\beta_2\gamma_2$)	29
$GABA_A$ ($\alpha_1\beta_3\gamma_2$)	29
$GABA_A$ ($\alpha_2\beta_2\gamma_2$)	29
$GABA_A$ ($\alpha_3\beta_2\gamma_2$)	30
$GABA_A$ ($\alpha_5\beta_2\gamma_2$)	30
$GABA_A$ ($\alpha_4\beta_3\delta$)	30
$GABA_A$ ($\alpha_6\beta_3\delta$)	31
GlyRα_3	31
GlyT1 (Glycine transporter)	40
GlyT2 (Glycine transporter)	40
GRIK2	32
GRIK2/5	32

H

hERG	
9–14h	
ERG-GLP	9
hERG - GLP, I_{Kr}	9
hERG, I_{Kr}	9
hERG - trafficking, I_{Kr}	10
HCN1	28
HCN4	28
HCN4, I_{Funny}	12

K

$K_V1.1$	15
$K_V1.2$	15
$K_V1.3$	16
$K_V1.4$	16
$K_V1.5$	17
$K_V1.6$	17
$K_V2.1$	18
$K_V2.2$	18
$K_V4.3$	21
$K_V4.3$ / KChIP2	21
$K_V4.3$ / KChIP, I_{to}	11
$K_V7.1$	18
$K_V7.1$/minK	18
$K_V7.1$/minK - GLP	19
$K_V7.1$/minK ($K_V7.1$), I_{Ks}	10
$K_V7.1$/minK ($K_V7.1$) - GLP, I_{Ks}	11
$K_V7.2$	19
$K_V7.3$	19
$K_V7.2/7.3$	20
$K_V11.1$, hERG	20
$K_V11.1$, hERG - GLP	21
$K_V11.1$, hERG - trafficking	21
Kir2.1	22

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M

mGLUR1	40

N

nAChR (α_7)	34
nAChR ($\alpha_3\beta_4$)	34
nAChR ($\alpha_4\beta_2$)	34
nAChR ($\alpha_9\alpha_{10}$)	34
$Na_V1.1$	23
$Na_V1.2$	23
$Na_V1.3$	23
$Na_V1.5$	24
$Na_V1.5$-GLP	24
$Na_V1.6$	24
$Na_V1.7$	25
$Na_V1.8$	25
Neuroblastoma whole calcium	27
Neuroblastoma whole sodium	25
NMDA (NR1/2A)	32
NMDA (NR1/2B)	32
NMDA (NR1/2C)	32
NMDA (NR1/2D)	32

P

$P2X_1$	36
$P2X_3$	36
$P2X_4$	36
$P2X_7$	36
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S

Serotonin 5HT3A	35
Serotonin 5HT3A/B	35

T

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TRPV1	37
TRPV2	37
TRPV3	38
TRPV4	38
TRPM4	38
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