

Supplement

Figures & Data Tables

The % block at C_{\max} and $3x C_{\max}$ given in this Supplement reflect predicted values obtained from fits of the concentration-response data. C_{\max} values were obtained from Johannesen et al. (2014, 2015), Redfern et al. (2003), Kramer et al. (2013), or the drug label/review.

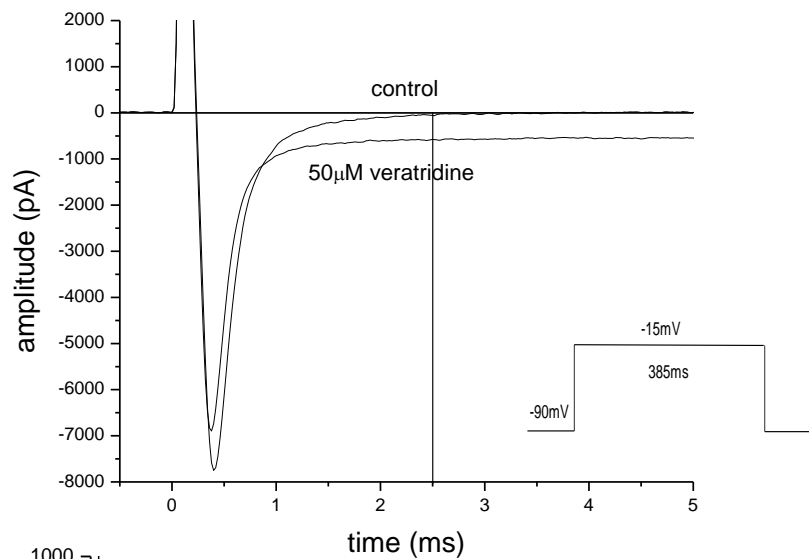
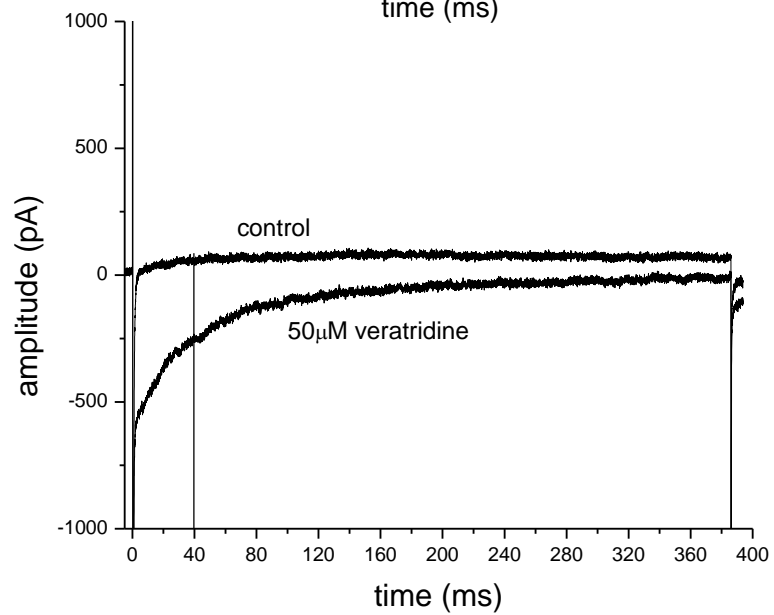
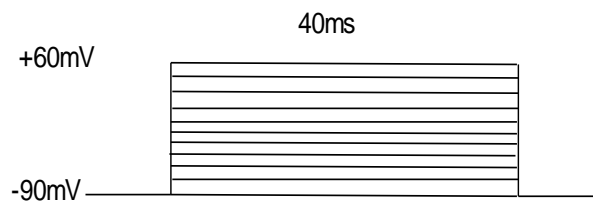
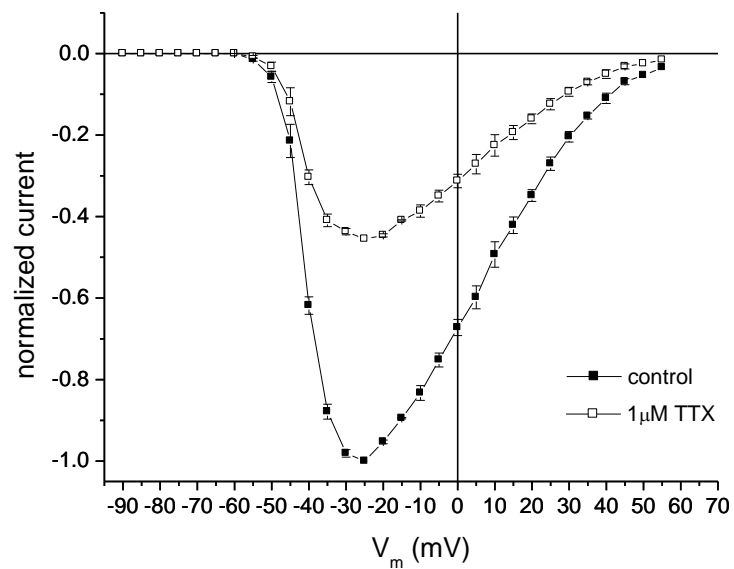
A**B****C****D**

Figure S1: Nav1.5 current ($T = 36 \pm 1^\circ\text{C}$). A. Nav1.5 current before and after addition of $50\mu\text{M}$ veratridine. Currents were elicited by the protocol shown in inset. Vertical line indicates approximate point at which current is fully inactivated in the absence of veratridine ($\approx 2.5\text{ms}$). B. Same cell as in Panel A but with longer timescale. Vertical line indicates timepoint at which current was measured in the presence of veratridine (40ms) in Figure 2. C. Voltage protocol used to elicit currents to construct the I-V relationship in Panel D. D. Nav1.5 IV relationship ($n=4-5$) in the presence and absence of $1\mu\text{M}$ TTX.

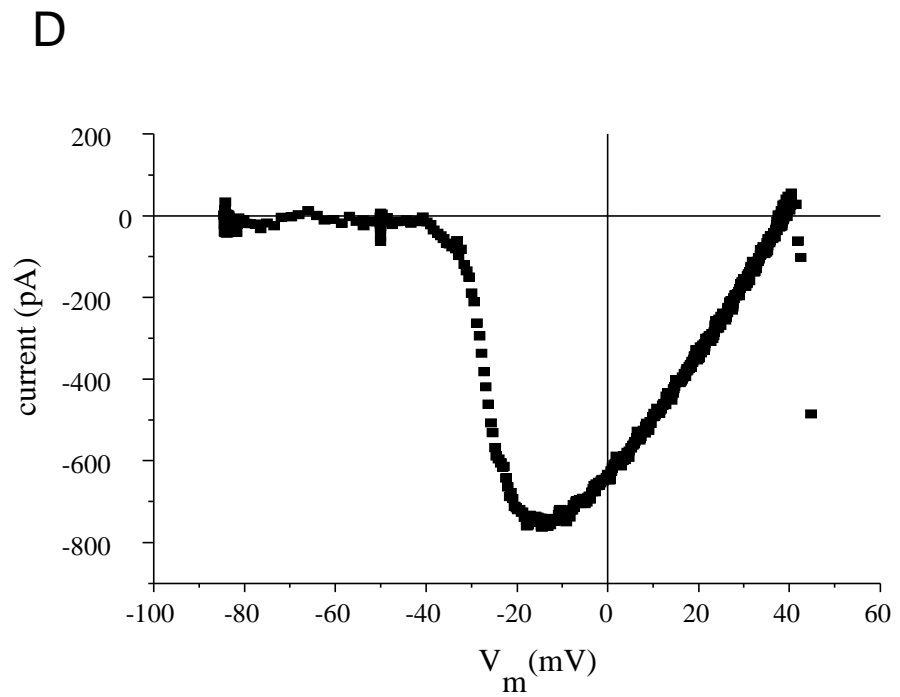
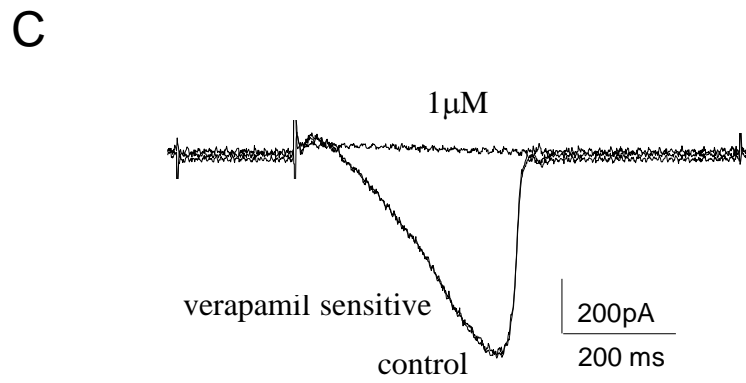
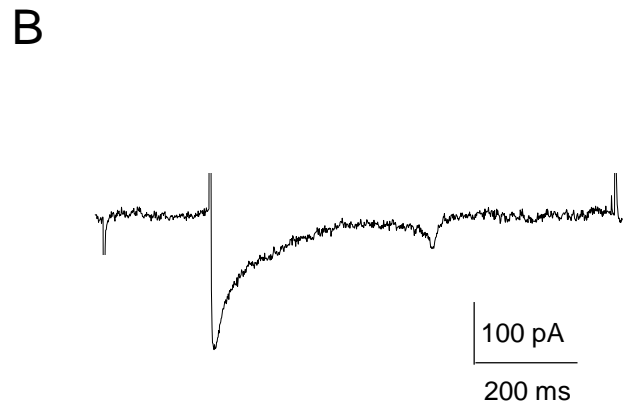
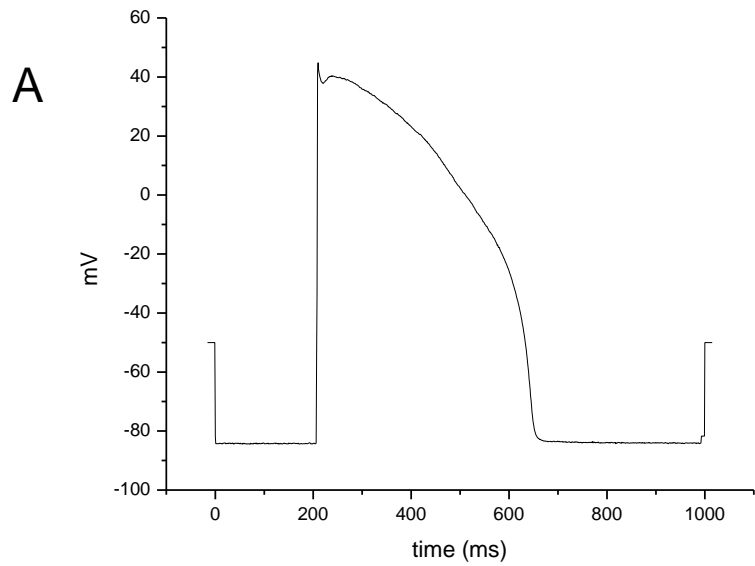
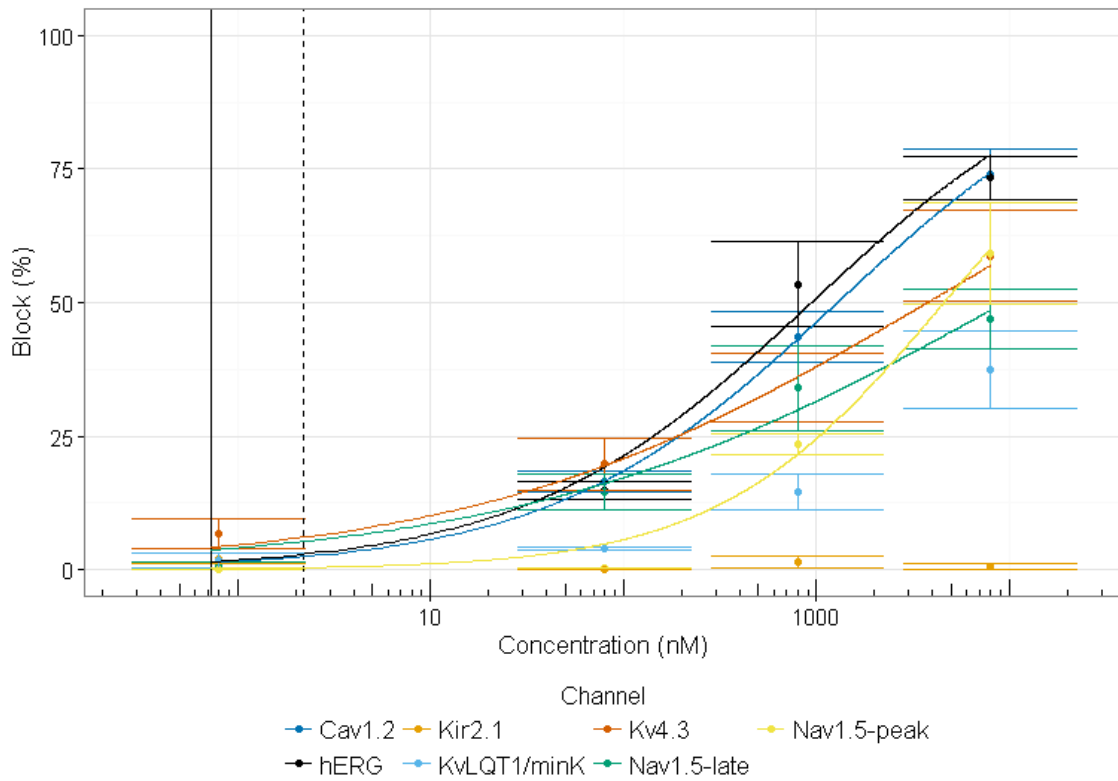


Figure S2: Cav1.2 current. A. Voltage waveform used to elicit current. B. Current elicited in which 1.8mM Ca⁺⁺ was the charge carrier. C. Current elicited in which 4mM Ba⁺⁺ was the charge carrier. Traces for control, after addition of 1 μM verapamil, and the verapamil-sensitive current are shown. D. Current voltage relationship for the verapamil-sensitive current shown in Panel C. Values were obtained by plotting the verapamil-sensitive current in Panel C against the voltage values of the waveform shown in Panel A.

amiodarone

current	0.8nM	80nM	800nM	8000nM
hERG	0,0,0	12.0,17.8,14.8	37.5,62.7,60.2	66.5,80.2,73.3
X ± SEM	0 ± 0	14.9 ± 1.7	53.5 ± 8.0	73.3 ± 4.0
Nav1.5-peak	0,0.2,0.04	0,0.5,0.3	25.3,17.5,26.9,24.1	60.3,75.3,42.3
X ± SEM	0.08 ± 0.06	0.3 ± 0.1	23.5 ± 2.1	59.3 ± 9.6
Nav1.5-late	2.3,0,0,	21.0,13.5,9.2	28.4,23.8,49.7	38.4,36.9,59.3,53.3
X ± SEM	0.8 ± 0.8	14.6 ± 3.5	34.0 ± 8.0	47.0 ± 6.4
Cav1.2	0,1.9,0.3	17.4,12.9,19.1	36.8,52.8,40.9	69.2,83.6,69.6
X ± SEM	0.7 ± 0.6	16.5 ± 1.9	43.5 ± 4.8	74.1 ± 4.7
KvLQT1/mink	4.6,0,0.5	4.3,3.9,3.5	13.3,20.9,9.6	23.6,39.9,48.7
X ± SEM	1.7 ± 1.5	3.9 ± 0.2	14.6 ± 3.3	37.4 ± 7.4
Kv4.3	6.2, 1.6, 4.6, 14.3	18.5, 27.0, 6.1, 27.3	38.5, 49.3, 19.7, 28.6	74.9, 45.5, 55.9
X ± SEM	6.6 ± 2.4	19.7 ± 5.0	34.0 ± 6.4	58.7 ± 8.6
Kir2.1	2.9,0,3.4	0,0,0	0.9,3.5,0,	1.5,0,0
X ± SEM	2.1 ± 1.1	0 ± 0	1.5 ± 1.1	0.5 ± 0.5

Amiodarone



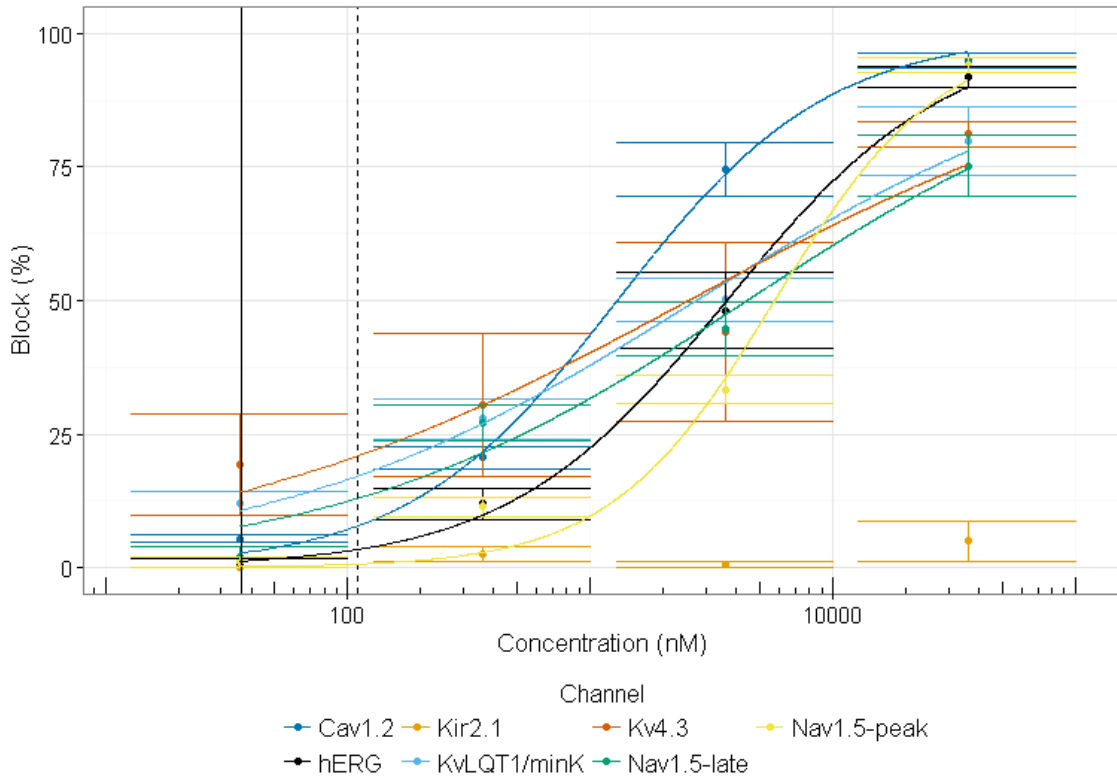
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	1281	941	-	3758	-	9423	4577
h	0.6	0.6	-	0.4	-	0.4	0.7
Block (%) at							
Free Cmax	1.3	1.6	-	4.1	-	3.5	0.2
3X Free Cmax	2.4	2.9	-	6.0	-	5.1	0.3

Amiodarone (Free Cmax = 0.7 nM)

amitriptyline

current	36nM	360nM	3600nM	36000nM
hERG	0,0,2.7	11.1,7.4,17.2	34.2,52.3,58.0	92.6,94.8,88.2
X ± SEM	0.9 ± 0.9	11.9 ± 2.9	51.4 ± 6.0	91.9 ± 1.9
Nav1.5-peak	3.1,0,0	8.0,11.6,14.5	28.3,34.1,37.7	95.4,91.4,95.7
X ± SEM	1.0 ± 1.0	11.4 ± 1.9	33.4 ± 2.7	94.2 ± 1.4
Nav1.5-late	0,0,5.8	30.5,20.4,30.3	47.5,34.9,51.8	85.4,66.0,74.4
X ± SEM	1.9 ± 1.9	27.1 ± 3.3	44.7 ± 5.1	75.3 ± 5.6
Cav1.2	4.0,6.4,5.8	24.5,17.4,19.8	76.7,64.9,82.2	97.8,93.1,93.8
X ± SEM	5.4 ± 0.7	20.6 ± 2.1	74.6 ± 5.1	94.9 ± 1.5
KvLQT1/mink	10.1,16.6,9.7	34.8,27.2,21.8	44.1,48.8,57.7	93.3,62.3,82.4,81.9
X ± SEM	12.1 ± 2.2	27.9 ± 3.8	50.2 ± 4.0	80.0 ± 7.5
Kv4.3	26.1, 50.8, 19.7, -2.6, 0	47.8, 58.8, 3.6, 11.7	63.8, 80.9, 12.0, 19.5	80.0, 87.7, 71.7, 80.0, 87.7, 80.0,
X ± SEM	32.2 ± 9.5	39.4 ± 14.2	54.7 ± 18.3	74.4 ± 5.5
Kir2.1	0,0,0,	0,2.3,5.2	0,1.7,0	0,2.6,12.2
X ± SEM	0 ± 0	2.5 ± 1.5	0.6 ± 0.6	4.9 ± 3.7

Amitriptyline



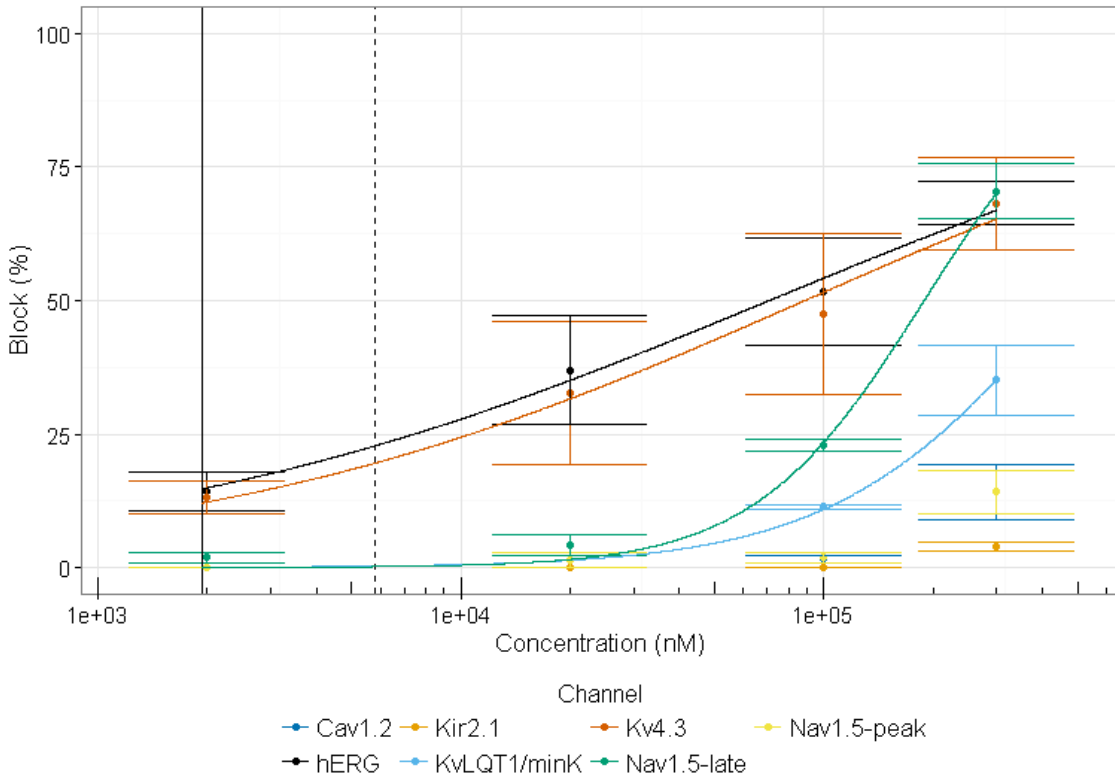
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	1291	3660	-	2543	2737	4433	5760
h	1.0	1.0	-	0.4	0.5	0.5	1.3
Block (%) at							
Free Cmax	2.7	1.2	-	14.4	10.8	7.6	0.2
3X Free Cmax	7.8	3.3	-	21.1	17.1	12.7	0.6

Amitriptyline (Free Cmax = 36.4 nM)

azithromycin

current	2 μ M	20 μ M	100 μ M	300 μ M
hERG	10.5,10.6,21.4	34.0,21.1,55.8	48.4,36.2,70.3,	73.7,60.4,70.7
X \pm SEM	14.2 \pm 6.3	39.7 \pm 10.1	51.6 \pm 9.9	68.3 \pm 4.0
Nav1.5-peak	0,0,0	0,0,4.1	3.4,0,2.2	18.9,6.0,17.5
X \pm SEM	0 \pm 0	1.4 \pm 1.4	1.9 \pm 1.0	14.1 \pm 4.1
Nav1.5-late	0,2.4,3.2	0.9,7.8,3.9	23.3,20.9,24.4	64.2,80.7,66.6
X \pm SEM	1.9 \pm 1.0	4.2 \pm 2.0	22.9 \pm 1.0	70.5 \pm 5.2
Cav1.2	0,0,0	0,0,0	1.5,0,3.8,2.6,0.3	28.8,5.6,8.7,13.7
X \pm SEM	0 \pm 0	0 \pm 0	1.6 \pm 0.7	14.2 \pm 5.1
KvLQT1/mink	0,0,0	0,0,0	11.9,10.5,11.7	31.4,19.3,39.1,50.7
X \pm SEM	0 \pm 0	0 \pm 0	11.4 \pm 0.4	35.1 \pm 6.6
Kv4.3	9.6, 19.2, 10.4	47.9, 44.2, 6.1	68.5, 55.7, 18.4	83.6, 67.3, 53.8
X \pm SEM	13.1 \pm 3.1	32.8 \pm 13.4	47.6 \pm 15.0	68.2 \pm 8.6
Kir2.1	0,0,0	0,0,0	0,0,0	3.6,5.4,2.8
X \pm SEM	0 \pm 0	0 \pm 0	0 \pm 0	3.9 \pm 0.8

Azithromycin



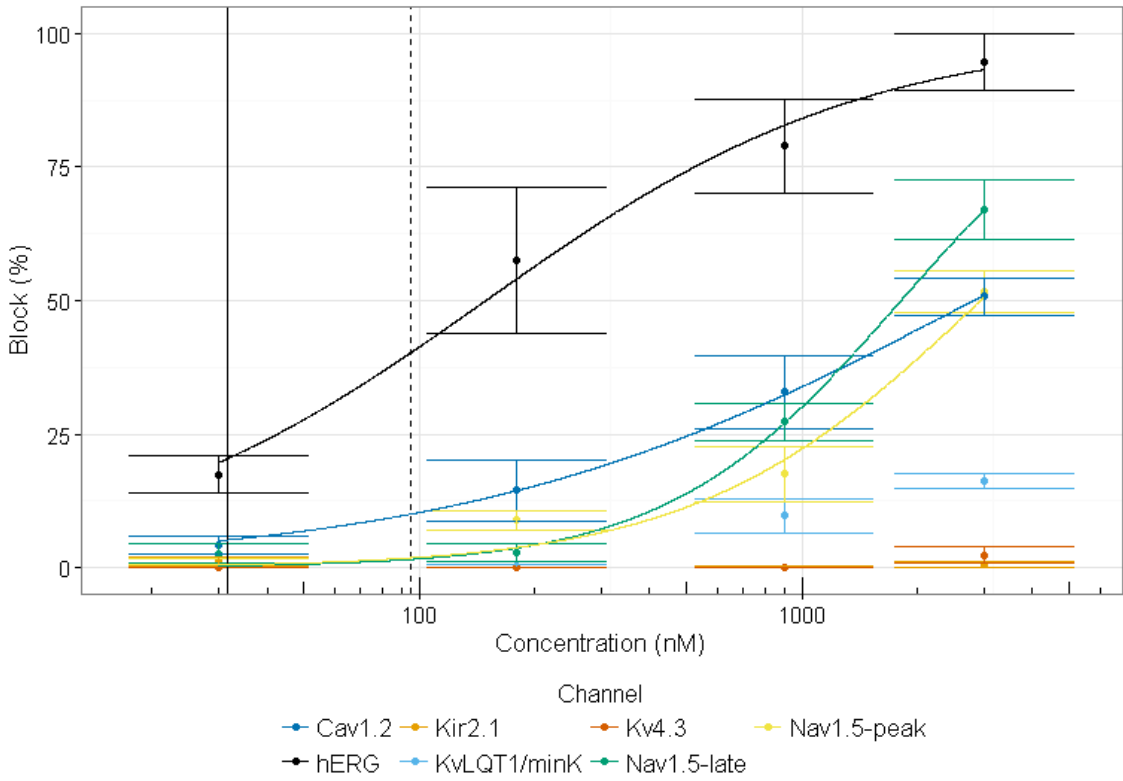
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	-	70796	-	88764	470131	189128	-
h	-	0.5	-	0.5	1.4	1.9	-
Block (%) at							
Free Cmax	-	14.6	-	12.0	0.1	0.0	-
3X Free Cmax	-	22.7	-	19.5	0.3	0.2	-

Azithromycin (Free Cmax = 1937.0 nM)

bepridil

current	0.03 μ M	0.180 μ M	0.9 μ M	3 μ M
hERG	24.2,15.5,12.5	83.9,50.2,38.2	94.7,78.0,64.0	100,100,84.2
X \pm SEM	17.4 \pm 3.5	57.4 \pm 13.7	78.9 \pm 8.9	94.7 \pm 5.3
Nav1.5-peak	0, 2.2, 1.2	5.4, 7.9, 8.1, 13.9	15.2, 9.1, 13.1	61.7, 53.7, 42.8, 48.6
X \pm SEM	1.1 \pm 0.6	8.8 \pm 1.8	12.5 \pm 1.8	51.7 \pm 4.0
Nav1.5-late	2.0,5.9,0	2.9,5.5,0	20.7,28.3,32.8	61.4,61.5,78.1
X \pm SEM	2.6 \pm 1.7	2.8 \pm 1.6	27.3 \pm 3.5	67.0 \pm 5.6
Cav1.2	3.7,1.6,7.4	25.8,7.7,9.9	46.7,26.1,25.9	57.0,50.2,44.9
X \pm SEM	4.2 \pm 1.7	14.5 \pm 5.7	32.9 \pm 6.9	50.7 \pm 3.5
KvLQT1/mink	0,0.9,0	0,0.7,0	2.4,17.9,11.2,7.3	18.8,14.6,15.2
X \pm SEM	0.3 \pm 0.3	0.2 \pm 0.2	9.7 \pm 3.3	16.2 \pm 1.3
Kv4.3	0, 0, 0	0.2, 0, 0	0.1, 0, 0	0, 6.2, 3.2, 0
X \pm SEM	0 \pm 0	0.07 \pm 0.07	0.03 \pm 0.03	2.4 \pm 1.5
Kir2.1	2.9,0.5,0	0,0.2,0	0,0,0.4	0,0,1.6
X \pm SEM	1.1 \pm 0.9	0.07 \pm 0.07	0.1 \pm 0.1	0.5 \pm 0.5

Bepridil



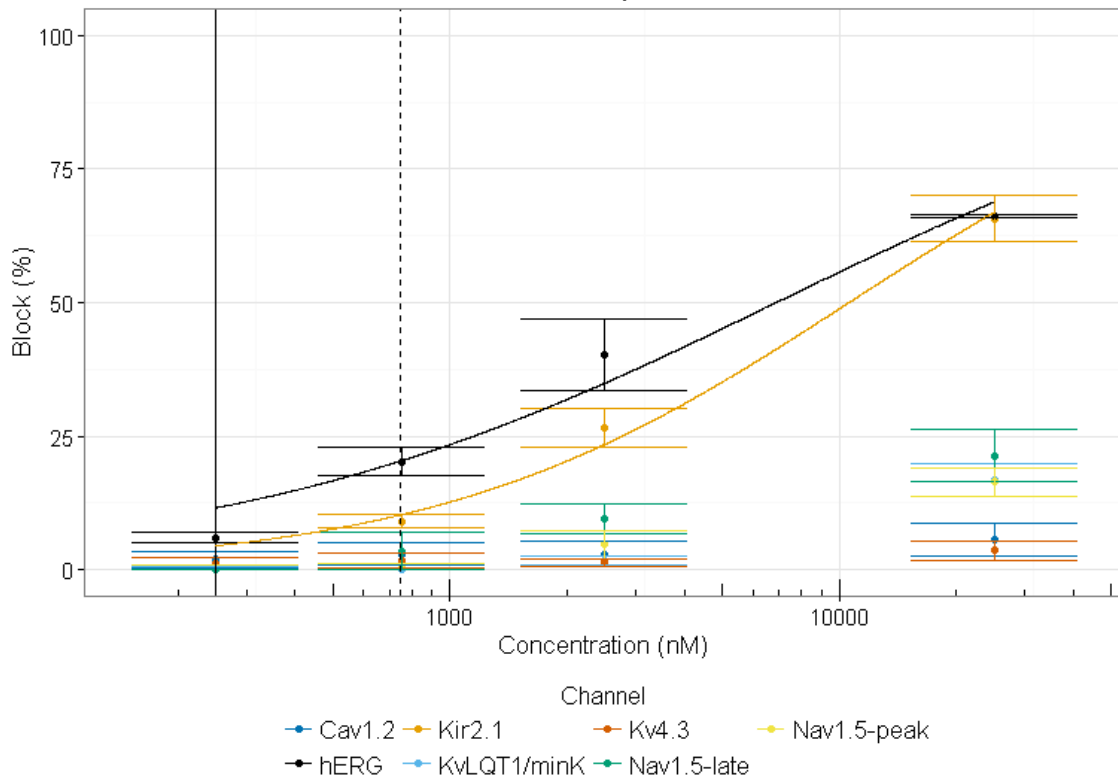
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	2808	149	-	-	-	1814	2929
h	0.6	0.9	-	-	-	1.4	1.2
Block (%) at							
Free Cmax	5.1	20.3	-	-	-	0.3	0.5
3X Free Cmax	9.9	40.1	-	-	-	1.5	1.8

Bepridil (Free Cmax = 31.5 nM)

chloroquine

current	0.25μM	0.75μM	2.5μM	25μM
hERG	5.5,4.5,7.9	14.8,22.3,23.4	42.2,27.7,50.5	66.7,66.0,65.6
X ± SEM	6.0 ± 1.0	20.2 ± 2.7	40.1 ± 6.7	66.1 ± 0.3
Nav1.5-peak	0,0,1.1	0,0,1.6	0,4.9,9.1	13.3,21.6,14.4
X ± SEM	0.4 ± 0.4	0.5 ± 0.5	4.7 ± 2.6	16.4 ± 2.6
Nav1.5-late	1.9,2.8,0	3.9,12.0,0	7.2,10.6,12.7	38.2,24.1,9.9
X ± SEM	1.6 ± 0.8	5.3 ± 3.5	10.2 ± 1.6	25.2 ± 5.9
Cav1.2	4.8,0,0.9	7.0,0,1.6	7.8,0,1.0	2.5,2.8,11.8
X ± SEM	1.9 ± 1.5	2.9 ± 2.1	2.9 ± 2.5	5.7 ± 3.1
KvLQT1/mink	0,0.8,0	0.4,0,0	3.3,0.2,1.8	17.2,22.0,11.3
X ± SEM	0.3 ± 0.3	0.1 ± 0.1	1.8 ± 0.9	16.8 ± 3.1
Kv4.3	3.5, 0, 0	4.4, 0.6, 0	0, 2.8, 1.0	4.9, 0, 3.9, 11.9, 0, 0.8
X ± SEM	1.2 ± 1.2	1.7 ± 1.4	1.3 ± 0.8	3.6 ± 1.9
Kir2.1	0,0,0	6.8,11.2,9.0	20.1,32.8,26.7	58.6,73.4,65.3
X ± SEM	0 ± 0	9.0 ± 1.3	26.5 ± 3.7	65.8 ± 4.3

Chloroquine



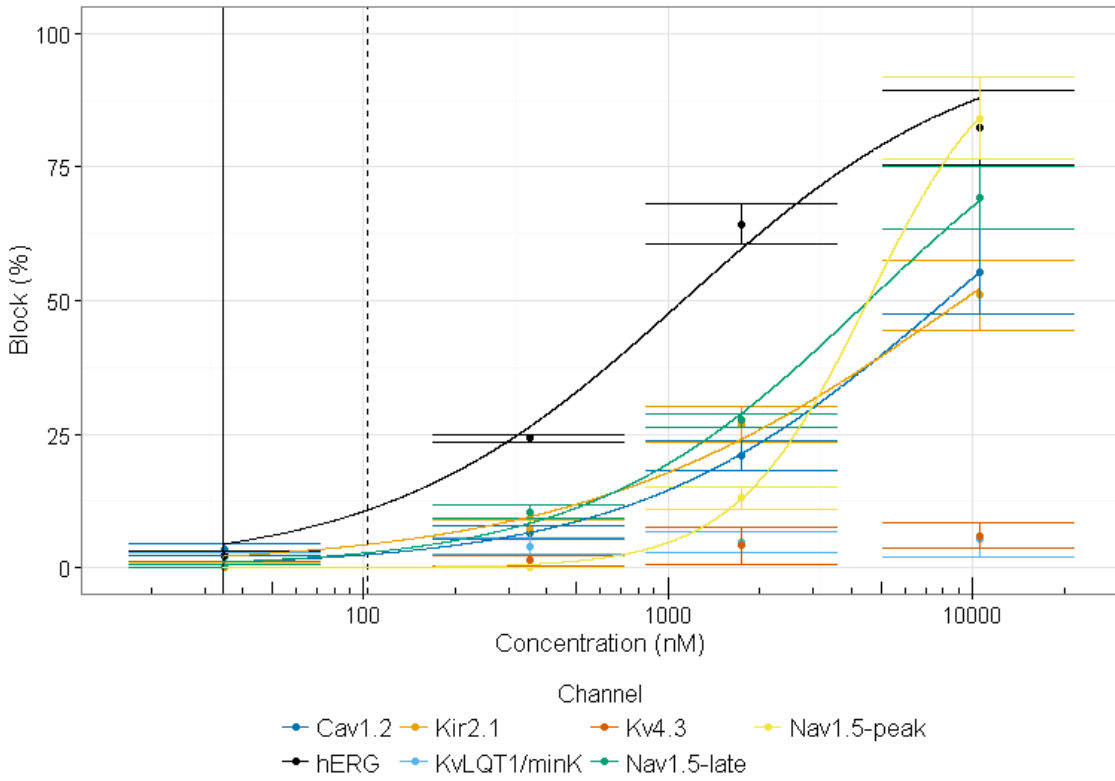
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	-	6889	10595	-	-	-	-
h	-	0.6	0.8	-	-	-	-
Block (%) at							
Free Cmax	-	11.7	4.4	-	-	-	-
3X Free Cmax	-	20.5	10.2	-	-	-	-

Chloroquine (Free Cmax = 249.5 nM)

chlorpromazine

current	0.035μM	0.35μM	1.75μM	10.5μM
hERG	3.3,3.1,0	23.0,25.6,23.9	71.6,59.2,62.3	82.1,70.3,94.8
X ± SEM	2.1 ± 1.1	24.2 ± 0.8	64.4 ± 3.7	82.4 ± 7.1
Nav1.5-peak	1.1,0.05,0	0,0,0	10.0,17.2,12.0	71.7,82.5,98.4
X ± SEM	0.4 ± 0.4	0 ± 0	13.1 ± 2.1	84.2 ± 13.4
Nav1.5-late	0,1,0,0	8.5,9.8,13.0	29.1,25.1,28.4	80.8,63.8,63.1
X ± SEM	0.3 ± 0.3	10.4 ± 1.3	27.5 ± 1.2	69.2 ± 5.8
Cav1.2	5.2,3.1,1.8	5.7,5.2,8.8	26.0,16.5,20.2	46.9,71.3,48.1
X ± SEM	3.4 ± 1.0	6.6 ± 1.1	20.9 ± 2.8	55.4 ± 8.0
KvLQT1/mink	3.8,1.7,0.02	0.9,5.7,5.3	0.8,6.4,6.9	3.9,11.5,0.2
X ± SEM	1.8 ± 1.1	4.0 ± 1.5	4.7 ± 2.0	5.2 ± 3.3
Kv4.3	0, 0, 1.8	0, 0.9, 3.1	0, 1.4, 10.9	10.4, 5.7, 1.9
X ± SEM	0.6 ± 0.6	1.3 ± 0.9	4.1 ± 3.4	6.0 ± 2.5
Kir2.1	0,0,0	6.7,4.8,10.3	26.8,21.0,32.8	41.2,48.6,63.4
X ± SEM	0 ± 0	7.3 ± 1.6	26.9 ± 3.4	51.1 ± 6.5

Chlorpromazine



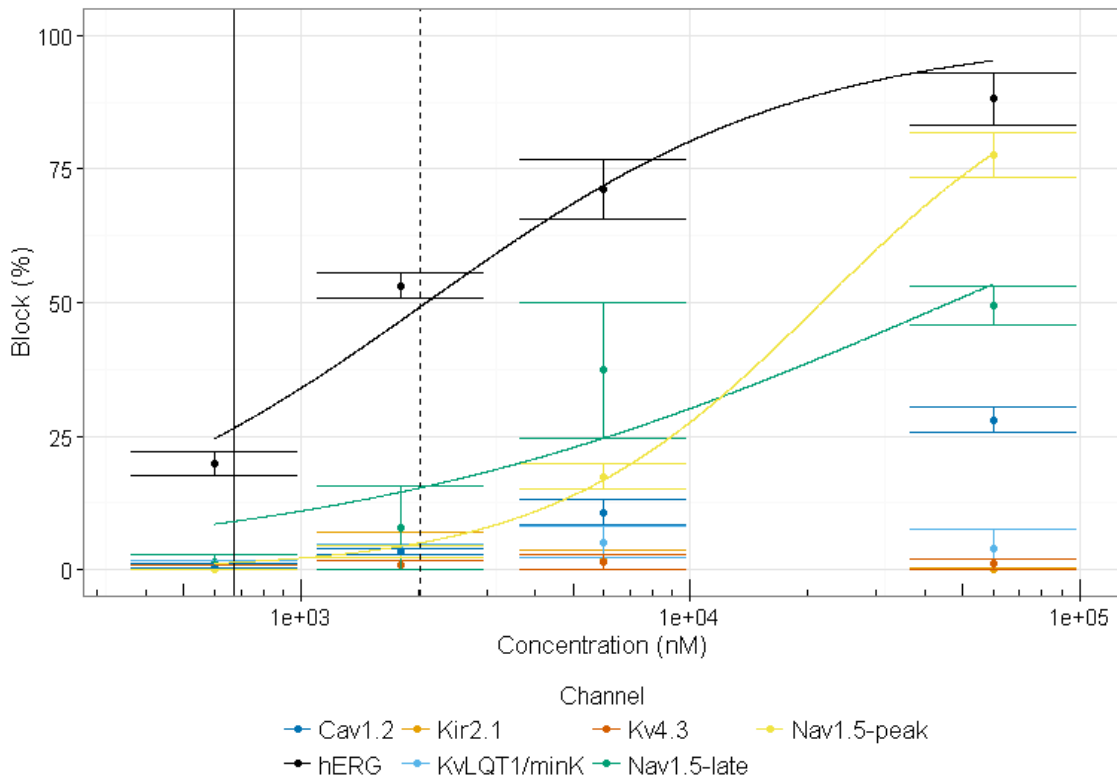
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	8192	1118	9270	-	-	4560	4536
h	0.8	0.9	0.7	-	-	0.9	2.0
Block (%) at							
Free Cmax	1.0	4.3	2.1	-	-	1.0	0.0
3X Free Cmax	2.5	10.7	4.3	-	-	2.8	0.1

Chlorpromazine (Free Cmax = 34.5 nM)

cibenzoline

current	0.6μM	1.8μM	6μM	60μM
hERG	14.4,18.4,22.8,23.6	53.1,49.1,57.2	80.9,71.3,61.6	90.1,95.6,78.9
X ± SEM	19.8 ± 2.1	53.1 ± 2.3	71.3 ± 5.6	88.2 ± 4.9
Nav1.5-peak	0.1, 0, 0	2.3, 5.5, 2.3	12.8, 18.3, 21.2	70.3, 84.9, 77.9
X ± SEM	0.03 ± 0.03	3.4 ± 1.1	17.4 ± 2.5	77.7 ± 4.2
Nav1.5-late	0,3.0,1.5	0,4.5,0	32.3,18.2,12.8	59.5,36.2,57.3
X ± SEM	0.5 ± 0.9	1.5 ± 1.5	21.0 ± 5.8	51.0 ± 7.4
Cav1.2	0,0.9,1.2	2.8,2.9,4.3	14.8,10.6,6.7	28.6,31.8,23.8
X ± SEM	0.7 ± 0.4	3.3 ± 0.5	10.7 ± 2.3	28.1 ± 2.3
KvLQT1/mink	0,0.2,2.3	5.6,0.9,4.0	10.3,0,5.0	11.5,0,0
X ± SEM	0.8 ± 0.7	3.5 ± 1.4	5.1 ± 3.0	3.8 ± 3.8
Kv4.3	0, 0, 1.3	0, 0, 2.6	0, 0, 4.1	0, 0, 5.9, 0, 0, 0.6
X ± SEM	0.4 ± 0.4	0.9 ± 0.9	1.4 ± 1.4	1.1 ± 1.0
Kir2.1	0,0,0	10.4,0,0	5.3,0,0	0.3,0,0
X ± SEM	0 ± 0	3.5 ± 3.5	1.8 ± 1.8	0.1 ± 0.1

Cibenzoline



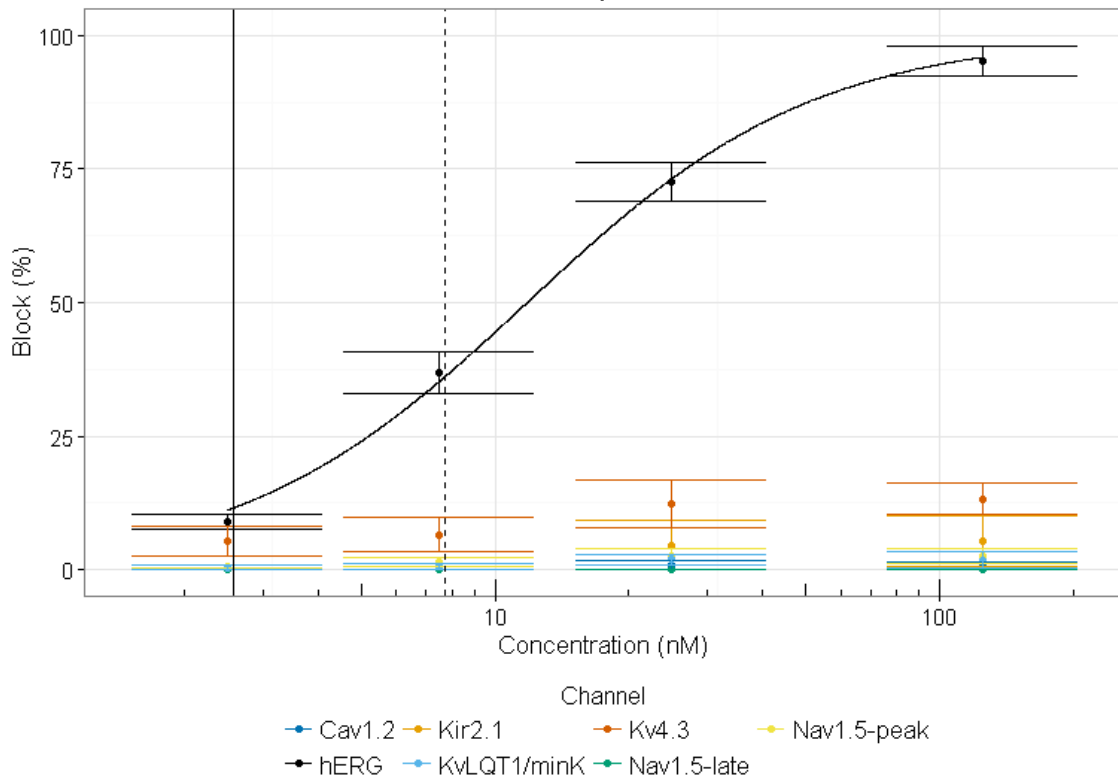
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	-	2097	-	-	-	46581	21752
h	-	0.9	-	-	-	0.6	1.2
Block (%) at							
Free Cmax	-	26.4	-	-	-	8.9	1.3
3X Free Cmax	-	49.1	-	-	-	15.1	5.0

Cibenzoline (Free Cmax = 673.0 nM)

cisapride

current	2.5nM	7.5nM	25nM	125nM
hERG	6.3, 9.2, 11.0	29.6, 38.4, 42.8	65.9, 73.2, 78.4	95.1, 90.3, 100
X ± SEM	8.8 ± 1.4	36.9 ± 3.9	72.5 ± 3.6	95.1 ± 2.8
Nav1.5-peak	0, 0.4, 1.1	0, 2.9, 1.7	3.8, 6.1, 0, 0	6.1, 0.7, 2.9, 0
X ± SEM	0.5 ± 0.3	1.5 ± 0.8	2.5 ± 1.5	2.4 ± 1.4
Nav1.5-late	4.1,1.4,1.2	0,0,0	5.6,0,3.9	8.6,2.7,6.2
X ± SEM	2.2 ± 0.9	0 ± 0	3.2 ± 1.7	5.8 ± 1.7
Cav1.2	0,0,0	0,0,0	0,0,2.5	0,0,2.2
X ± SEM	0 ± 0	0 ± 0	0.8 ± 0.8	0.7 ± 0.7
KvLQT1/mink	0, 0.01, 1.2	0, 0.01, 1.8	0, 2.2, 3.4	0, 0.4, 4.9
X ± SEM	0.4 ± 0.4	0.6 ± 0.6	1.9 ± 1.0	1.8 ± 1.6
Kv4.3	5.4, 0.3, 10.3	10.5, 8.9, 0.3	9.5, 6.1, 21.1	17.7, 14.1, 7.7
X ± SEM	5.3 ± 2.9	5.8 ± 3.2	12.2 ± 4.5	13.2 ± 2.9
Kir2.1	0,0,0	0,0,0	0,0,13.7	14.6,0,1.2
X ± SEM	0 ± 0	0 ± 0	4.6 ± 4.6	5.3 ± 4.7

Cisapride



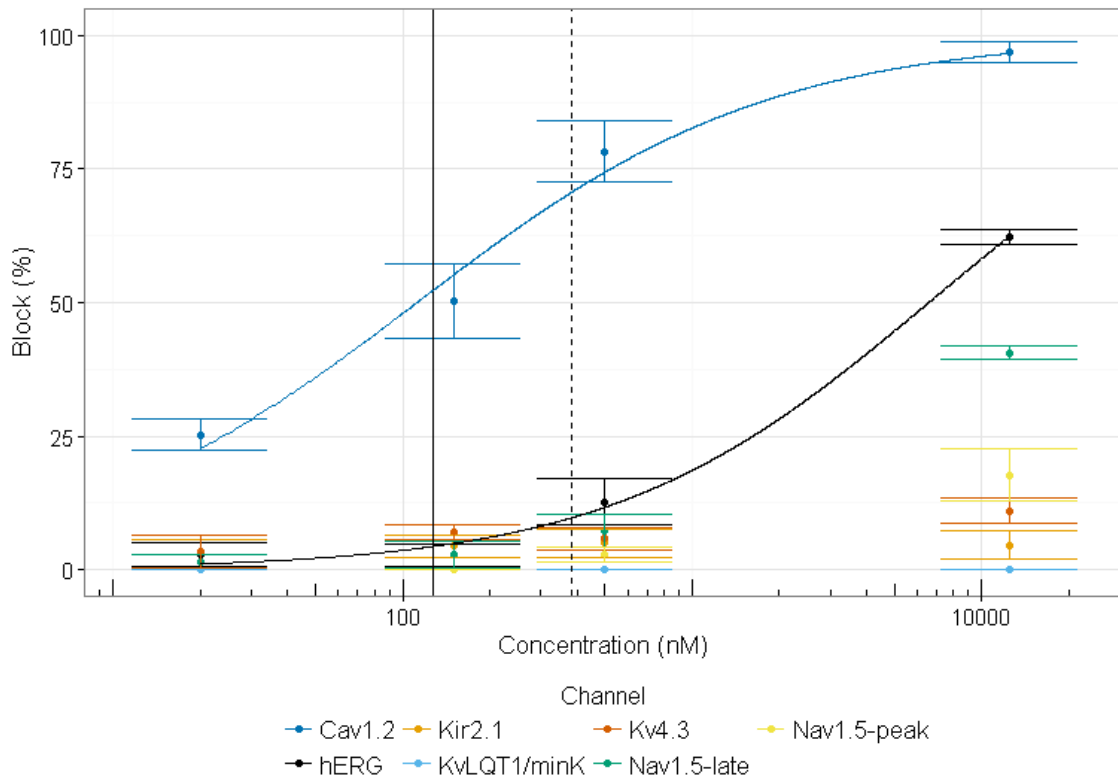
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	-	12	-	-	-	-	-
h	-	1.3	-	-	-	-	-
Block (%) at							
Free Cmax	-	11.5	-	-	-	-	-
3X Free Cmax	-	36.1	-	-	-	-	-

Cisapride (Free Cmax = 2.6 nM)

diltiazem

current	20nM	150nM	500nM	12500nM
hERG	0, 1.4, 7.1	0, 1.2, 6.8	5.1, 19.8, 13.1	64.2, 59.8, 62.9
X ± SEM	2.8 ± 2.2	2.7 ± 2.1	12.7 ± 4.3	62.3 ± 1.3
Nav1.5-peak	0, 0, 0	0, 0, 0	4.2, 0, 4.3	12.8, 27.3, 13.1
X ± SEM	0 ± 0	0 ± 0	2.8 ± 1.4	17.7 ± 4.8
Nav1.5-late	0.9,7.9,4.5	0,0,6.1	0,13.2,7.5	43.2,46.9,27.1
X ± SEM	4.5 ± 2.0	2.0 ± 2.0	6.9 ± 2.8	39.1 ± 6.1
Cav1.2	30.9,22.4,22.5	64.3,42.9,43.5	89.4,75.3,70.3	97.8,93.1,100
X ± SEM	25.3 ± 2.8	50.2 ± 7.0	78.3 ± 5.7	96.9 ± 2.0
KvLQT1/mink	0, 0.3, 0	0, 0, 0	0, 0, 0	0, 0, 0
X ± SEM	0.1 ± 0.1	0 ± 0	0 ± 0	0 ± 0
Kv4.3	0.3, 0, 9.6	5.5, 5.8, 9.8	5.9, 2.0, 9.4	9.3, 8.0, 15.8
X ± SEM	3.3 ± 3.2	7.0 ± 1.4	5.8 ± 2.1	11.0 ± 2.4
Kir2.1	0,7.9,1.3	0,6.8,6.3	5.6,0,9.1	4.8,0,9.0
X ± SEM	3.1 ± 2.4	4.4 ± 2.2	4.9 ± 2.7	4.6 ± 2.6

Diltiazem



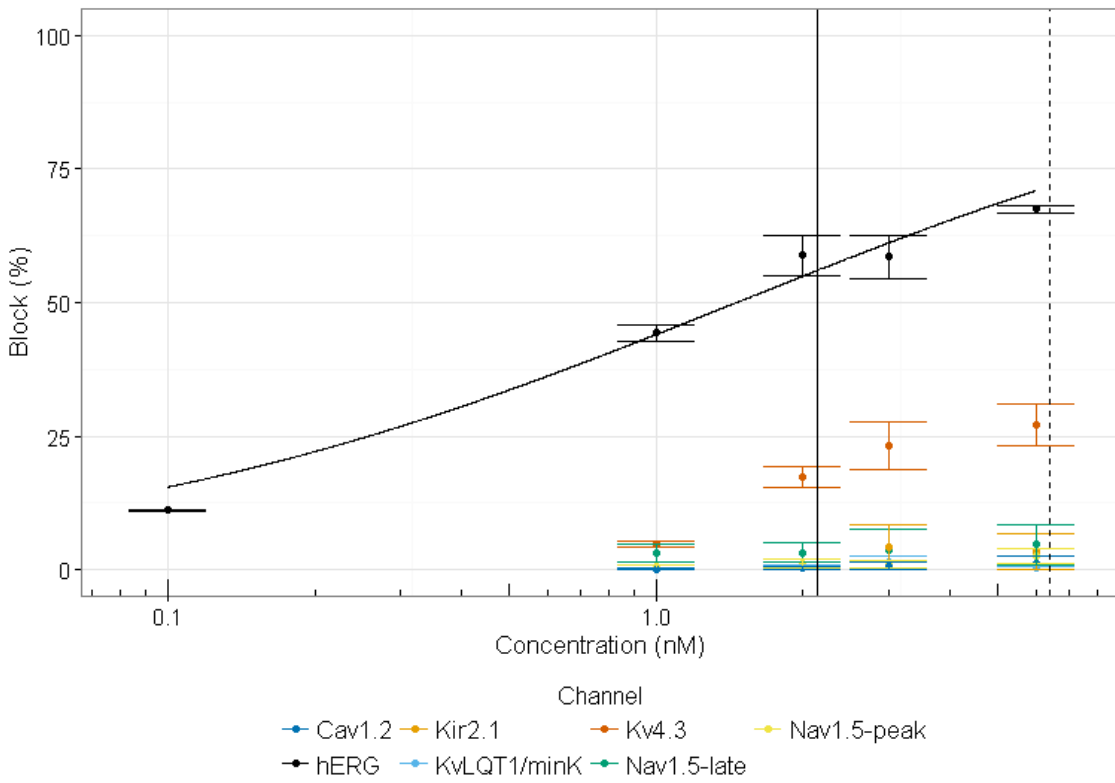
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	112	6569	-	-	-	-	-
h	0.7	0.8	-	-	-	-	-
Block (%) at							
Free Cmax	52.3	4.3	-	-	-	-	-
3X Free Cmax	70.5	9.6	-	-	-	-	-

Diltiazem (Free Cmax = 127.5 nM)

dofetilide

current	0.1nM	1nM	2nM	3nM	6nM
hERG	11.0,11.2	47.9,41.8,39.6,44.5,47.7	70.4,63.3,58.4,50.9,51.3	66.6,55.9,53.1	67.3,68.7,66.5
X ± SEM	11.1	44.3 ± 1.6	58.9 ± 3.6	58.5 ± 4.1	67.5 ± 0.6
Nav1.5-peak		0, 1.4, 0.1,0.5	0.8, 0, 2.7	0.6, 0, 2.5	0.8, 1.5, 5.1
X ± SEM		0.5 ± 0.5	1.2 ± 0.8	1.0 ± 0.8	2.5 ± 1.3
Nav1.5-late		0,0,0	0,0,0	1.4,0,0	0,0,1.4
X ± SEM		0 ± 0	0 ± 0	0.5 ± 0.5	0.5 ± 0.5
Cav1.2		0,0.4,0,0,	0,1.1,0,0,	2.1,0,0	3.6,0,0
X ± SEM		0.1 ± 0.1	0.3 ± 0.3	0.7 ± 0.7	1.2 ± 1.2
KvLQT1/mink		0, 0, 0	1.3, 0, 0	3.9, 0, 0	0.7, 0, 0
X ± SEM		0 ± 0	0.4 ± 0.4	1.3 ± 1.3	0.2 ± 0.2
Kv4.3		4.3, 5.9, 3.9	20.9, 16.9, 14.3	26.9, 28.4, 14.3	34.9, 24.1, 22.1
X ± SEM		4.7 ± 0.6	17.4 ± 1.9	23.2 ± 4.5	25.5 ± 3.9
Kir2.1		0,0.6,0,	0,0,3.0	0,0,12.4	0,0,10.1
X ± SEM		0.2 ± 0.2	1.0 ± 1.0	4.1 ± 4.1	3.4 ± 3.4

Dofetilide



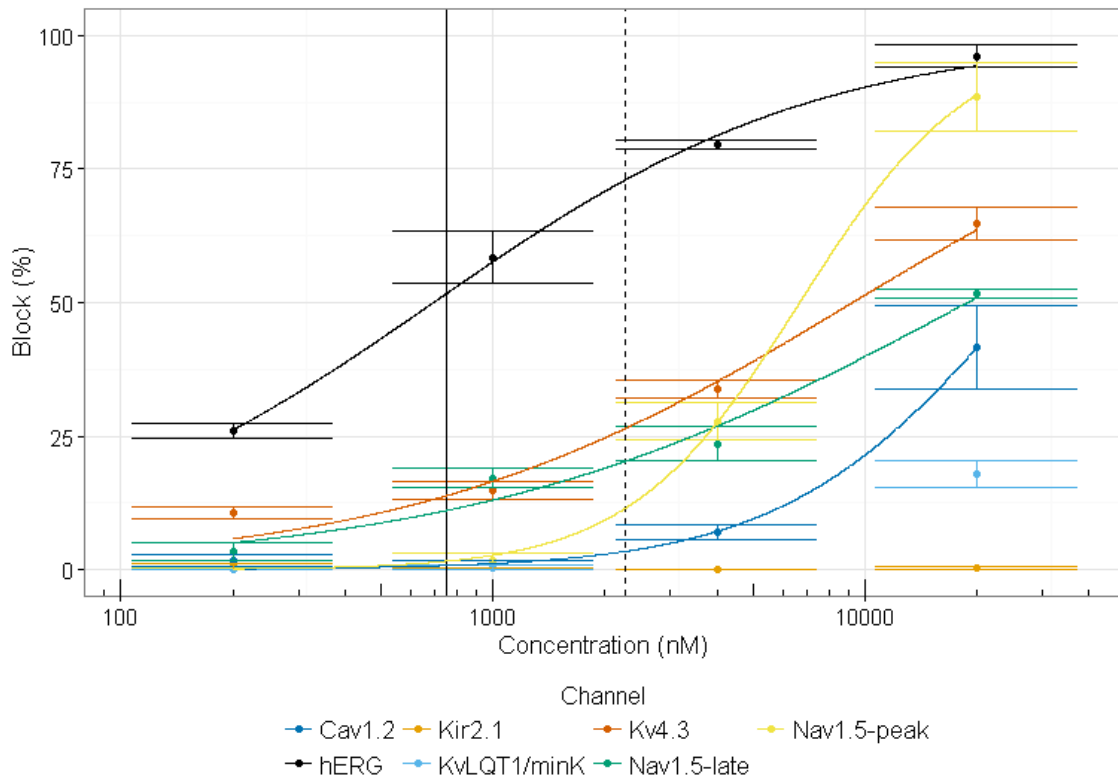
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	-	1	-	-	-	-	-
h	-	0.6	-	-	-	-	-
Block (%) at							
Free Cmax	-	56.0	-	-	-	-	-
3X Free Cmax	-	71.8	-	-	-	-	-

Dofetilide (Free Cmax = 2.1 nM)

flecainide

current	0.2μM	1μM	4μM	20μM
hERG	30.0,24.1,25.6,24.1	54.7,68.2,52.6	81.0,78.8,79.0	92.8,100,95.5
X ± SEM	26.0 ± 1.4	58.5 ± 4.9	79.6 ± 0.7	96.1 ± 2.1
Nav1.5-peak	0, 0.6, 0	0, 4.3, 0.5	21.4, 33.3, 28.5	77.6, 88.5, 99.8
X ± SEM	0.2 ± 0.2	1.6 ± 1.4	27.7 ± 3.5	88.6 ± 6.4
Nav1.5-late	1.8,6.8,1.7	16.7,20.4,14.1	24.5,28.7,17.6	52.3,51.8,49.1,53.6
X ± SEM	3.4 ± 1.7	17.1 ± 1.8	23.6 ± 3.2	51.7 ± 0.9
Cav1.2	3.9,1.5,0	0.1,2.5,0.6	4.7,9.6,6.9	30.3,56.5,37.9
X ± SEM	1.8 ± 1.1	1.1 ± 0.7	5.1 ± 2.5	41.6 ± 7.8
KvLQT1/mink	0, 0, 0	0, 1.1, 0	0, 0, 0	14.7, 23.3, 20.5, 13.0
X ± SEM	0 ± 0	0.4 ± 0.4	0 ± 0	17.9 ± 2.4
Kv4.3	11.3, 8.6, 11.9	12.8, 18.1, 13.4	34.8, 36.1, 30.6	68.1, 58.6, 67.9
X ± SEM	10.5 ± 1.0	14.8 ± 1.7	33.9 ± 1.7	64.9 ± 3.1
Kir2.1	1.6,0,0	0,0.6,0,	0,0,0	0,0,1.0
X ± SEM	0.5 ± 0.5	0.2 ± 0.2	0 ± 0	0.3 ± 0.3

Flecainide



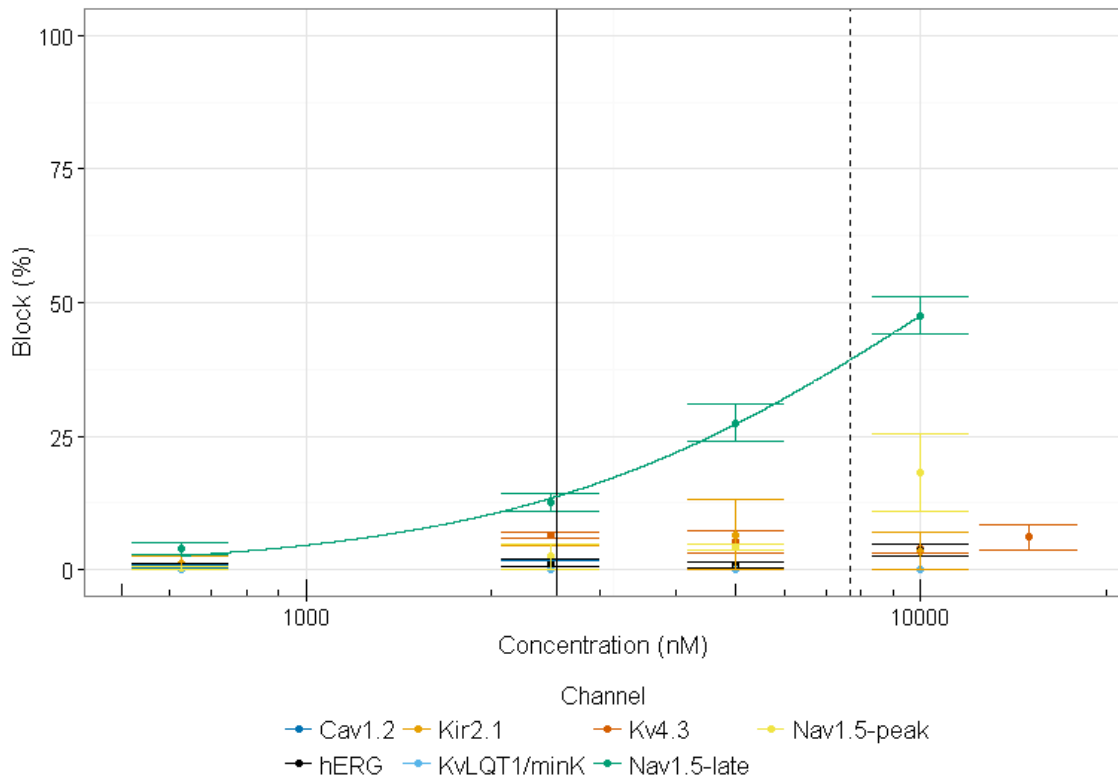
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	25599	692	-	9266	-	18870	6677
h	1.4	0.8	-	0.7	-	0.6	1.9
Block (%) at							
Free Cmax	0.8	51.8	-	13.8	-	11.0	1.6
3X Free Cmax	3.4	73.0	-	26.3	-	20.1	11.4

Flecainide (Free Cmax = 752.9 nM)

lidocaine

current	0.625 μ M	2.5 μ M	5 μ M	10 μ M	15 μ M
hERG	0, 0, 1.5	0, 1.0, 2.7	0, 0.4, 1.9	1.8, 3.9, 5.4	-----
X \pm SEM	0.5 \pm 0.5	1.2 \pm 0.8	0.8 \pm 0.6	3.7 \pm 1.0	-----
Nav1.5-peak	0, 0.7, 0	0, 7.3, 0	4.6, 3.3, 4.9	32.8, 10.7, 10.9	-----
X \pm SEM	0.2 \pm 0.2	2.4 \pm 2.4	4.3 \pm 0.5	18.1 \pm 7.3	-----
Nav1.5-late	1.7,4.5,5.7	13.3,15.0,9.2	29.1,32.6,20.8	40.9,49.1,52.8	-----
X \pm SEM	4.0 \pm 1.2	12.5 \pm 1.7	27.5 \pm 3.5	47.3 \pm 3.8	-----
Cav1.2	1.2,0,0,1.3,0,	0,0,3.3,0	0,0,0	0,0,0	-----
X \pm SEM	0.5 \pm 0.3	0.8 \pm 0.8	0 \pm 0	0 \pm 0	-----
KvLQT1/mink	0, 0, 0	0, 0, 0	0, 0, 0	0, 0, 0	-----
X \pm SEM	0 \pm 0	0 \pm 0	0 \pm 0	0 \pm 0	-----
Kv4.3	-----	7.4, 5.9, 5.6	6.6, 1.1, 8.0	5.1, 2.2, 4.4	4.1, 3.4, 10.6
X \pm SEM	-----	6.3 \pm 0.6	5.2 \pm 2.1	3.9 \pm 0.9	6.1 \pm 2.3
Kir2.1	0,0,3.6	0,0,6.9	0,0,19.5	0,0,10.3	-----
X \pm SEM	1.2 \pm 1.2	2.3 \pm 2.3	6.5 \pm 6.5	3.4 \pm 3.4	-----

Lidocaine



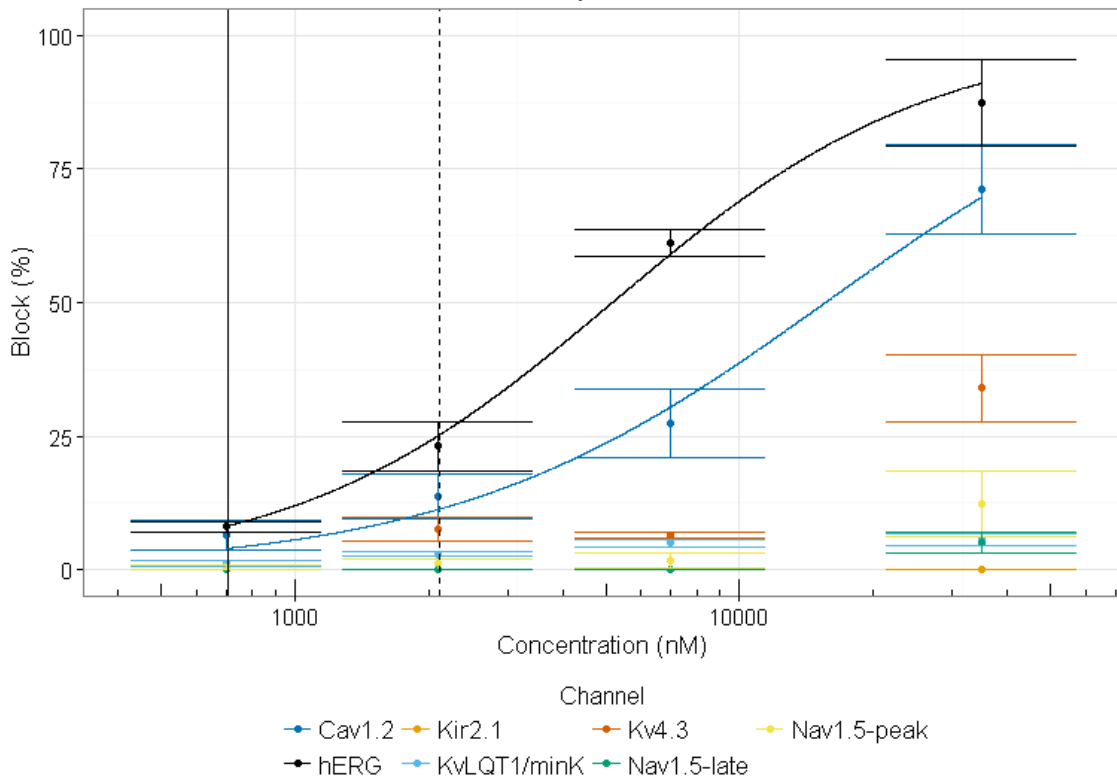
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	-	-	-	-	-	10790	-
h	-	-	-	-	-	1.3	-
Block (%) at							
Free Cmax	-	-	-	-	-	13.7	-
3X Free Cmax	-	-	-	-	-	39.3	-

Lidocaine (Free Cmax = 2560.4 nM)

lopinavir

current	0.7μM	2.1μM	7μM	35μM
hERG	5.9, 8.8, 9.3	14.5, 30.6, 24.1	56.6, 61.0, 68.3, 50.0	71.7, 99.4, 91.1
X ± SEM	8.0 ± 1.1	23.1 ± 4.7	61.2 ± 2.5	87.4 ± 8.2
Nav1.5-peak	1.4, 0.1, 0	3.1, 0, 0	4.4, 0, 0.5	16.8, 19.9, 0
X ± SEM	0.5 ± 0.5	0.8 ± 0.7	1.6 ± 1.4	12.2 ± 6.2
Nav1.5-late	0,0,0.2	0,0,0	0,0,0	1.5,5.1,8.4
X ± SEM	0.07 ± 0.07	0 ± 0	0 ± 0	5.0 ± 2.0
Cav1.2	2.4,4.9,12.0	11.7,7.6,21.7	40.3,22.5,19.4	56.7,70.9,85.9
X ± SEM	6.4 ± 2.9	13.7 ± 4.2	27.4 ± 6.5	71.2 ± 8.4
KvLQT1/mink	0.2, 1.4, 1.8	2.0, 3.5, 3.2	4.7, 3.9, 6.3	4.3, 4.4, 6.5, 9.9, 3.1
X ± SEM	1.1 ± 0.5	2.9 ± 0.5	5.0 ± 0.7	5.6 ± 1.2
Kv4.3	1.1, 0, 0	11.3, 3.9, 7.4	7.3, 6.8, 5.5	45.9, 24.3, 31.8
X ± SEM	0.4 ± 0.4	7.5 ± 2.1	6.5 ± 0.5	34.0 ± 6.3
Kir2.1	0,0,0	0,0,0	0,0,0	0,0,0
X ± SEM	0 ± 0	0 ± 0	0 ± 0	0 ± 0

Lopinavir



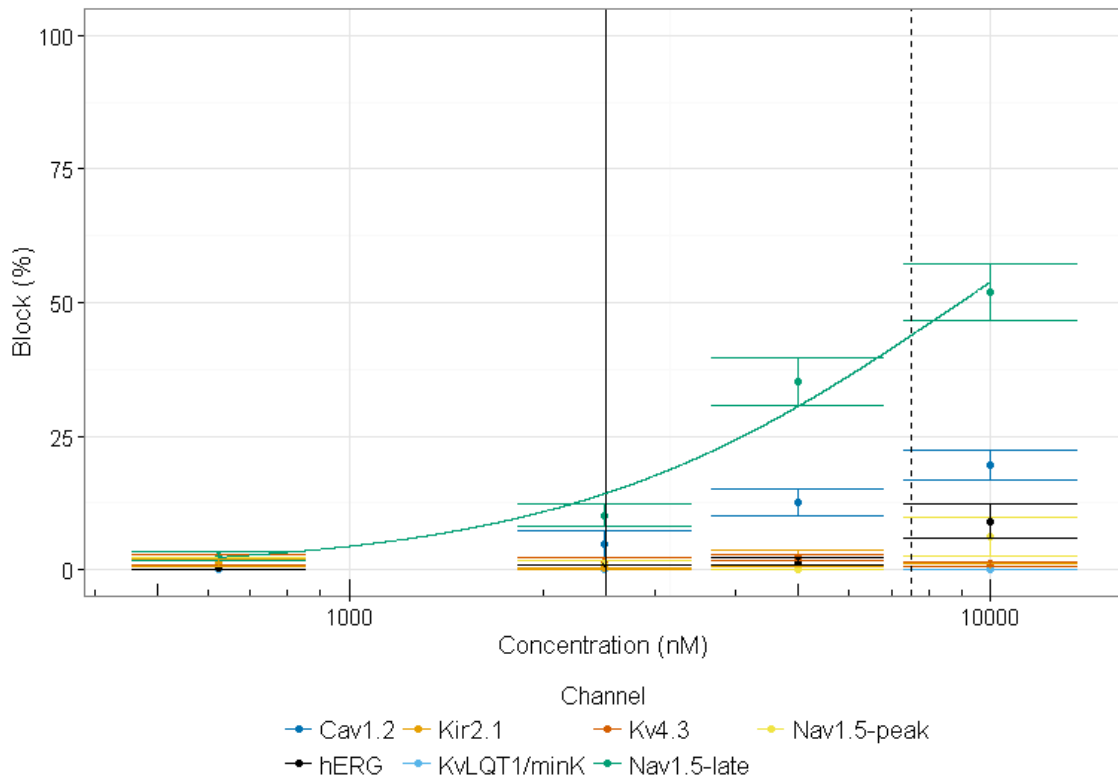
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	15601	5170	-	-	-	-	-
h	1.0	1.2	-	-	-	-	-
Block (%) at							
Free Cmax	3.9	8.2	-	-	-	-	-
3X Free Cmax	11.3	25.3	-	-	-	-	-

Lopinavir (Free Cmax = 703.7 nM)

mexiletine

current	0.625μM	2.5μM	5μM	10μM
hERG	0.6, 0.3, 0	0.8, 0.2, 0.6	2.2, 2.4, 0	15.1, 4.1, 8.0
X ± SEM	0.3 ± 0.2	0.5 ± 0.2	1.5 ± 0.8	9.1 ± 3.2
Nav1.5-peak	0, 0, 3.4	0, 0, 2.4	0, 0, 0	1.0, 4.4, 13.0
X ± SEM	1.1 ± 1.1	0.8 ± 0.8	0 ± 0	6.1 ± 3.6
Nav1.5-late	1.7,4.2,1.6	13.6,6.4,10.4	36.9,26.8,41.7	54.9,41.7,59.2
X ± SEM	2.5 ± 0.9	10.1 ± 2.1	35.1 ± 4.4	51.9 ± 5.3
Cav1.2	0.2,0,1.1	6.1,0,8.2	14.0,7.6,15.9	21.5,13.9,23.1
X ± SEM	0.4 ± 0.3	4.8 ± 2.5	12.5 ± 2.5	19.5 ± 2.8
KvLQT1/mink	0, 0, 0	0, 0, 0	0, 0.7, 0	0, 0, 0
X ± SEM	0 ± 0	0 ± 0	0.2 ± 0.2	0 ± 0
Kv4.3	3.1, 2.4, 0	2.2, 2.4, 0.02	2.8, 2.9, 1.0	2.2, 0.8, 1.0, 0
X ± SEM	1.8 ± 0.9	1.5 ± 0.8	2.2 ± 0.6	1.0 ± 0.5
Kir2.1	2.4,0,1.3	0.4,0,0.3	0.9,0,5.3	0,0,1.8
X ± SEM	1.2 ± 0.7	0.2 ± 0.1	2.1 ± 1.6	0.6 ± 0.6

Mexiletine



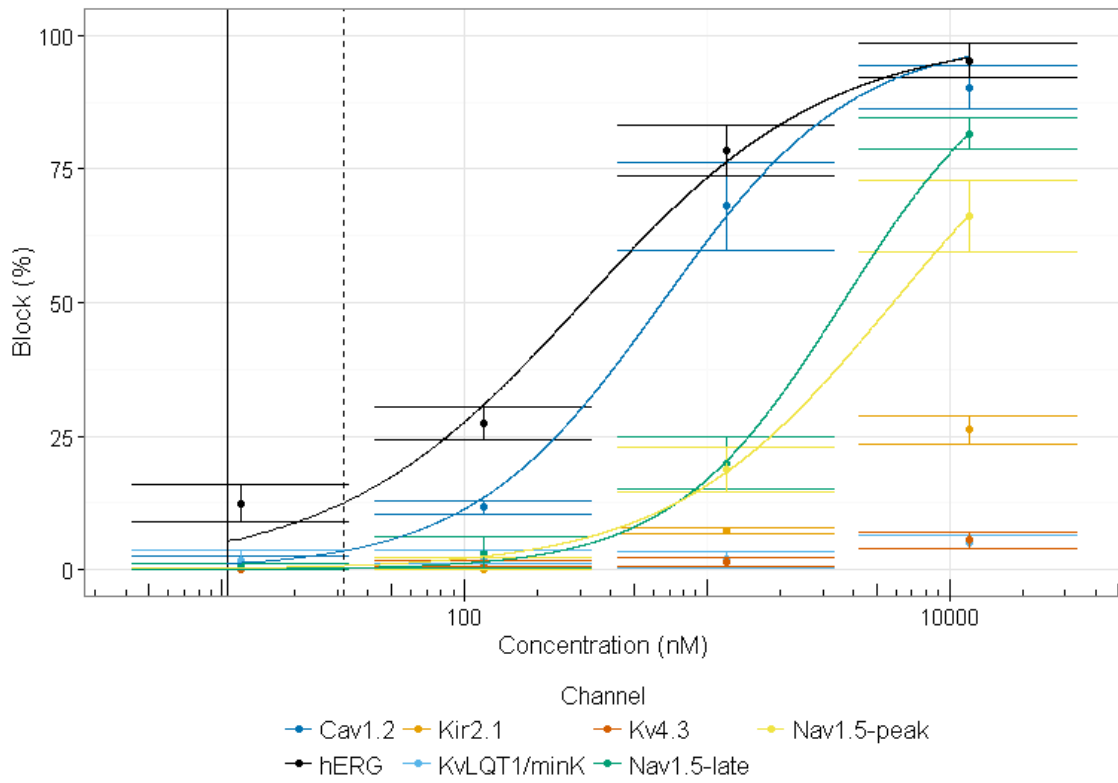
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	-	-	-	-	-	8957	-
h	-	-	-	-	-	1.4	-
Block (%) at							
Free Cmax	-	-	-	-	-	14.2	-
3X Free Cmax	-	-	-	-	-	43.8	-

Mexiletine (Free Cmax = 2503.2 nM)

mibefradil

current	0.012 μ M	0.120 μ M	1.2 μ M	12 μ M
hERG	5.6,15.2,16.5	29.8,30.9,21.4	79.1,86.5,70.0	100,97.2,88.9
X \pm SEM	12.4 \pm 3.4	27.4 \pm 3.0	78.5 \pm 4.8	95.4 \pm 3.3
Nav1.5-peak	0,0,6,0	0,3,2,0	12.6,16.8,26.6	52.6,73.6,72.3
X \pm SEM	0.2 \pm 0.2	1.1 \pm 1.1	18.7 \pm 4.2	66.2 \pm 6.8
Nav1.5-late	4.9,0,0,2	9.1,0,0,4	28.8,12.1,19.0	79.1,87.3,77.9
X \pm SEM	1.7 \pm 1.6	3.2 \pm 3.0	20.0 \pm 4.9	81.9 \pm 3.0
Cav1.2	0.7,3.6,0	11.7,13.9,9.2	54.1,82.4,67.7	86.7,98.4,85.9
X \pm SEM	1.4 \pm 1.1	11.6 \pm 1.4	68.1 \pm 8.2	90.3 \pm 4.0
KvLQT1/mink	0,5,4,0	0,4,1,3,0	0,4,9,0,8	3.6,8.9,7.1,3.6,2.2
X \pm SEM	1.8 \pm 1.8	2.4 \pm 1.2	1.9 \pm 1.5	5.1 \pm 1.3
Kv4.3	0, 0, 0	0, 1.4, 1.9	1.5, 0, 3.0	4.0, 1.3, 6.5, 5.2, 10.4
X \pm SEM	0 \pm 0	1.1 \pm 0.6	1.5 \pm 0.9	5.5 \pm 1.9
Kir2.1	0,0,0	0,0,0	6.5,8.3,7.2	22.3,25.1,31.2
X \pm SEM	0 \pm 0	0 \pm 0	7.3 \pm 0.5	26.2 \pm 2.6

Mibefradil



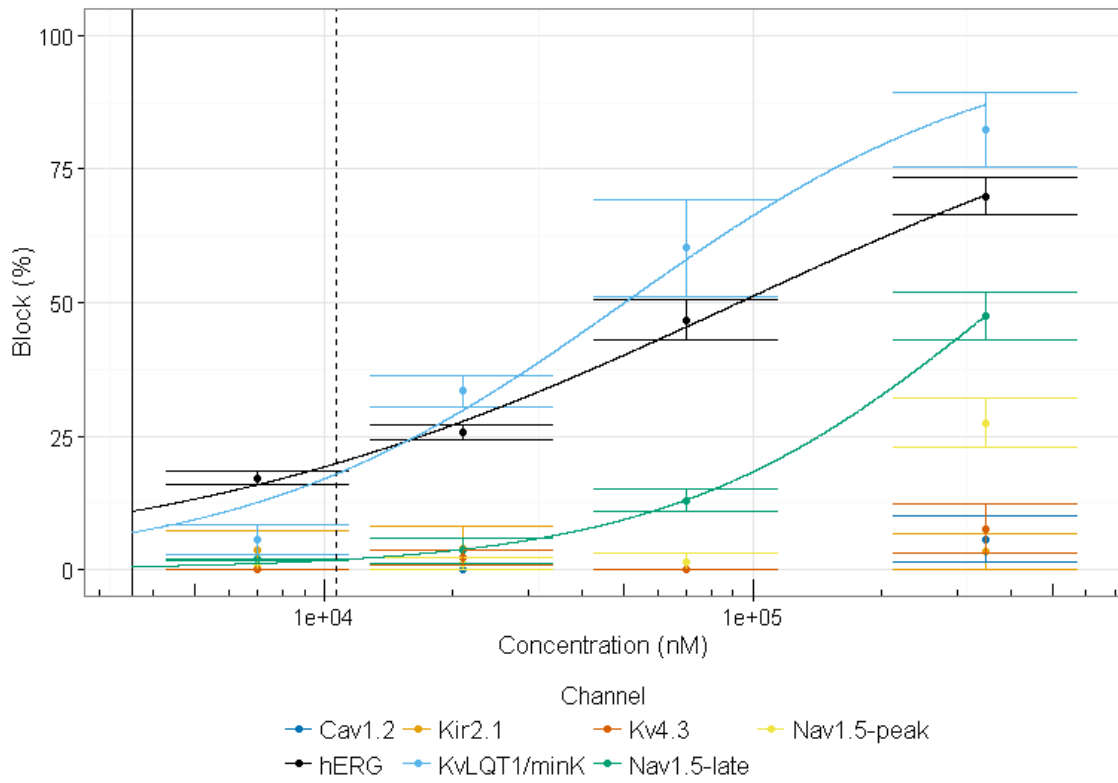
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	652	307	-	-	-	3628	5866
h	1.1	0.9	-	-	-	1.2	1.0
Block (%) at							
Free Cmax	1.1	5.2	-	-	-	0.1	0.2
3X Free Cmax	3.5	12.4	-	-	-	0.3	0.7

Mibefradil (Free Cmax = 10.6 nM)

moxifloxacin

current	7 μ M	21 μ M	70 μ M	350 μ M
hERG	19.6, 16.5, 15.3	28.3, 24.6, 24.1	39.4, 51.8, 48.9	68.1, 60.6, 75.2, 75.6
X \pm SEM	17.1 \pm 1.3	25.7 \pm 1.3	46.7 \pm 3.7	69.9 \pm 4.1
Nav1.5-peak	2.4, 0, 0	3.5, 0, 0	4.6, 0, 0	28.2, 35.1, 19.1
X \pm SEM	0.8 \pm 0.8	1.2 \pm 1.2	1.5 \pm 1.5	27.5 \pm 4.6
Nav1.5-late	1.9,2.0,1.7	8.1,0,2.8	15.9,9.0,13.9	54.3,49.3,39.1
X \pm SEM	1.9 \pm 0.09	3.6 \pm 2.4	12.9 \pm 2.1	47.6 \pm 4.5
Cav1.2	0,0,0	0,0,0	0,0,0	2.9,0,14.2
X \pm SEM	0 \pm 0	0 \pm 0	0 \pm 0	5.7 \pm 4.3
KvLQT1/mink	0, 7.9, 0.7, 3.9, 15.5	35.8, 34.1, 22.7, 39.6, 34.8	49.7, 78.3, 35.0, 83.4, 54.8	73.1, 97.2, 65.1, 100, 76.4
X \pm SEM	5.6 \pm 2.8	33.4 \pm 2.8	60.2 \pm 9.1	82.4 \pm 6.9
Kv4.3	0.2, 0, 0	0.04, 1.9, 4.6	0, 0, 0	2.0, 4.3, 16.7
X \pm SEM	0.07 \pm 0.07	2.2 \pm 1.3	0 \pm 0	7.7 \pm 4.6
Kir2.1	11.0,0,0	12.1,0,0	0,0,0,0	9.9,0,0
X \pm SEM	3.7 \pm 3.7	4.0 \pm 4.0	0 \pm 0	3.3 \pm 3.3

Moxifloxacin



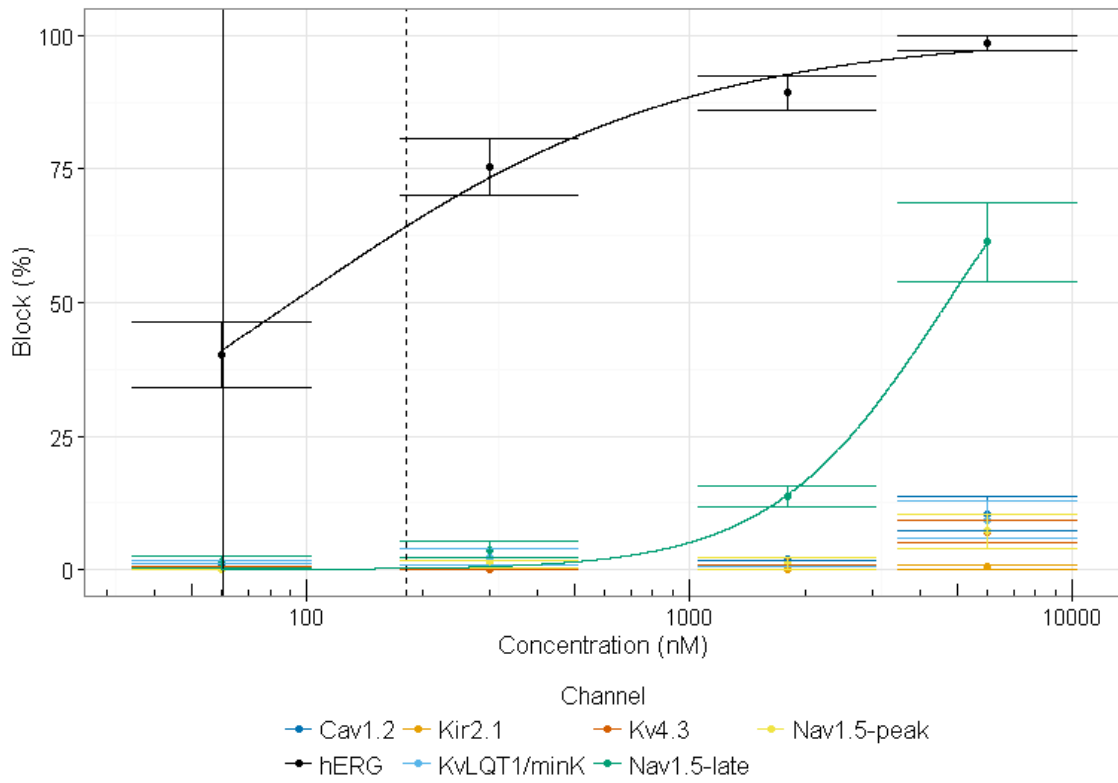
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	-	93041	-	-	50321	382337	-
h	-	0.6	-	-	1.0	1.1	-
Block (%) at							
Free Cmax	-	11.0	-	-	6.9	0.5	-
3X Free Cmax	-	20.0	-	-	18.0	1.8	-

Moxifloxacin (Free Cmax = 3562.5 nM)

nilotinib

current	0.06 μ M	0.3 μ M	1.8 μ M	6 μ M
hERG	52.1,37.6,31.3	83.4,77.2,65.5	95.1,88.9,84.0	100,100,95.8
X \pm SEM	40.3 \pm 6.2	75.4 \pm 5.3	89.3 \pm 3.2	98.6 \pm 1.4
Nav1.5-peak	0, 0, 0	2.4, 0, 0.7	3.5, 0, 0	13.3, 6.0, 2.2
X \pm SEM	0 \pm 0	1.0 \pm 1.0	1.2 \pm 1.2	7.2 \pm 3.3
Nav1.5-late	0,0.8,3.4	1.2,6.7,3.3	9.8,16.2,14.8	61.1,48.7,74.4
X \pm SEM	1.4 \pm 1.0	3.7 \pm 1.6	13.6 \pm 1.9	61.4 \pm 7.4
Cav1.2	0,0.8,1.4	1.7,1.8,2.6	2.2,1.4,2.4	16.7,8.8,5.9
X \pm SEM	0.7 \pm 0.4	2.0 \pm 0.3	2.0 \pm 0.3	10.5 \pm 3.2
KvLQT1/mink	1.1,2.0,1.4	5.4,0.7,0.8	0,1.2,2.9	15.5,9.0,3.3
X \pm SEM	1.5 \pm 0.3	2.3 \pm 1.5	1.4 \pm 0.8	9.3 \pm 3.5
Kv4.3	0.7, 0, 0	0.3, 0, 0	1.4, 2.8, 0.4	7.6, 12.0, 7.2, 1.5
X \pm SEM	0.2 \pm 0.2	0.1 \pm 0.1	1.5 \pm 0.7	7.1 \pm 2.2
Kir2.1	0,0,0	0,0,0	0,0,0	0,1.3,0
X \pm SEM	0 \pm 0	0 \pm 0	0 \pm 0	0.4 \pm 0.4

Nilotinib



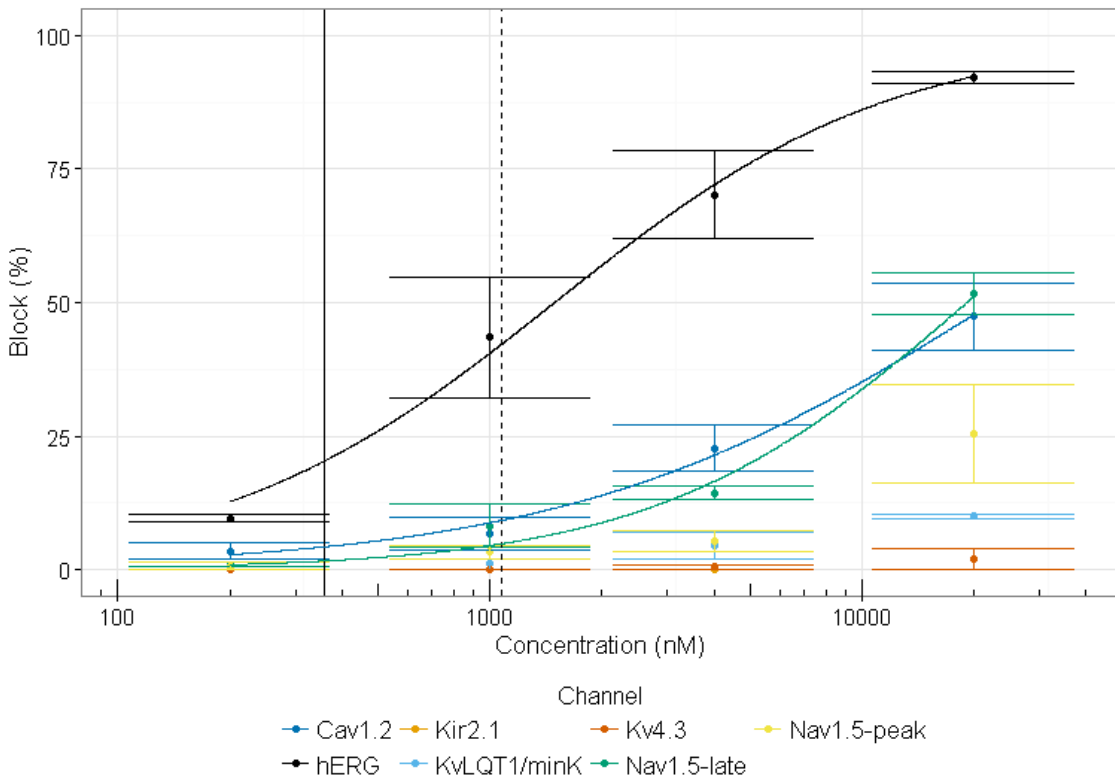
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	-	91	-	-	-	4706	-
h	-	0.8	-	-	-	1.9	-
Block (%) at							
Free Cmax	-	41.3	-	-	-	0.0	-
3X Free Cmax	-	64.2	-	-	-	0.2	-

Nilotinib (Free Cmax = 60.4 nM)

ondanestron

current	0.2μM	1μM	4μM	20μM
hERG	10.4,8.5,10.0	65.5,27.7,37.3	86.6,60.6,63.4	90.3,92.5,93.7
X ± SEM	9.6 ± 0.6	43.5 ± 11.4	70.2 ± 8.2	92.2 ± 1.0
Nav1.5-peak	0,1.9,0	5.5,3.0,1.2	9.4,2.9,3.6	37.5,45.2,9.3,9.8
X ± SEM	0.6 ± 0.6	3.2 ± 1.2	5.3 ± 2.1	25.5 ± 9.3
Nav1.5-late	1.8,0.7,0.3	6.0,2.4,16.2	13.5,12.8,16.7	58.2,52.3,44.4
X ± SEM	0.9 ± 0.4	8.2 ± 4.1	14.3 ± 1.2	51.6 ± 4.0
Cav1.2	0.3,5.8,6.5,1.3	1.0,7.7,11.4	27.9,13.9,26.5	35.1,50.7,56.3
X ± SEM	3.5 ± 1.6	6.7 ± 3.0	22.8 ± 4.5	47.4 ± 6.4
KvLQT1/mink	0,0,0	0,0,3.0	4.8,0.03,8.5	10.8,9.3,9.7
X ± SEM	0 ± 0	1.0 ± 1.0	4.4 ± 2.5	9.9 ± 0.4
Kv4.3	0, 0, 0	0, 0, 0	0, 0, 1.4	0.08, 0, 7.9, 0
X ± SEM	0 ± 0	0 ± 0	0.5 ± 0.5	2.0 ± 2.3
Kir2.1	0,0,0	0,0,0	0,0,0	0.9,5.6,2.4
X ± SEM	0 ± 0	0 ± 0	0 ± 0	3.0 ± 1.4

Ondansetron



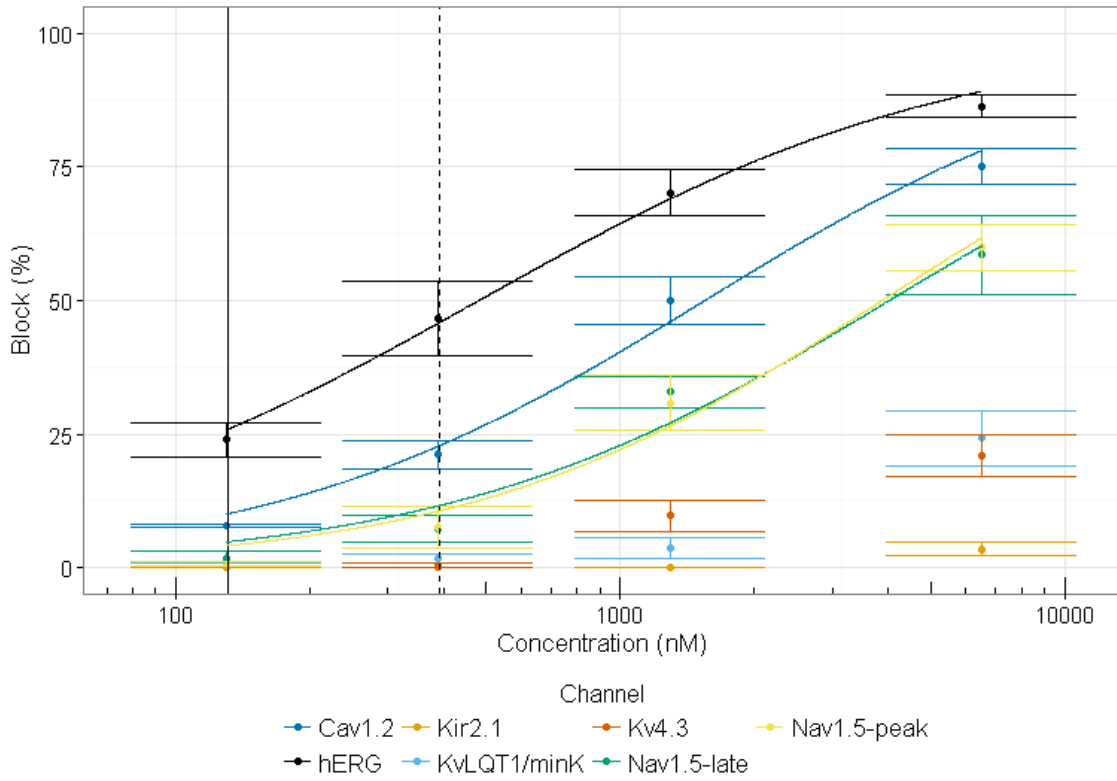
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	22551	1492	-	-	-	19181	-
h	0.8	1.0	-	-	-	1.0	-
Block (%) at							
Free Cmax	4.3	20.3	-	-	-	1.6	-
3X Free Cmax	9.3	42.2	-	-	-	4.9	-

Ondansetron (Free Cmax = 358.5 nM)

propafenone

current	0.130μM	0.390μM	1.3μM	6.5μM
hERG	17.6,26.6,27.6	32.0,41.3,64.7,48.8	58.4,69.2,78.9,74.4	87.1,82.4,89.5
X ± SEM	23.9 ± 3.2	46.7 ± 6.9	70.2 ± 4.4	86.3 ± 2.1
Nav1.5-peak	0,1.4,0.6	2.5,15.1,5.1	21.2,38.8,32.4	59.6,67.7,52.7
X ± SEM	0.7 ± 0.4	7.6 ± 3.8	30.8 ± 5.1	60.0 ± 4.3
Nav1.5-late	4.4,0.6,0	12.1,3.2,6.4	34.2,27.4,36.9	57.5,42.9,55.5,78.3
X ± SEM	1.7 ± 1.4	7.2 ± 2.6	32.8 ± 2.8	58.6 ± 7.3
Cav1.2	7.2,8.0,8.2	26.0,16.8,20.5	42.9,49.1,58.2	68.4,77.6,79.5
X ± SEM	7.8 ± 0.3	21.1 ± 2.7	50.1 ± 4.4	75.2 ± 3.4
KvLQT1/mink	0.1,1.0,0.5	0,2.0,3.0	0.3,3.2,7.2	19.9,18.4,34.3
X ± SEM	0.5 ± 0.3	1.7 ± 0.9	3.6 ± 2.0	24.2 ± 5.1
Kv4.3	0, 0.6, 1.3	0, 0, 1.2	5.0, 15.1, 8.9	18.8, 28.3, 15.7
X ± SEM	0.6 ± 0.4	0.4 ± 0.4	9.7 ± 2.9	20.9 ± 3.8
Kir2.1	0,0,0	0,0,0	0,0,0	5.3,3.8,1.1
X ± SEM	0 ± 0	0 ± 0	0 ± 0	3.4 ± 1.2

Propafenone



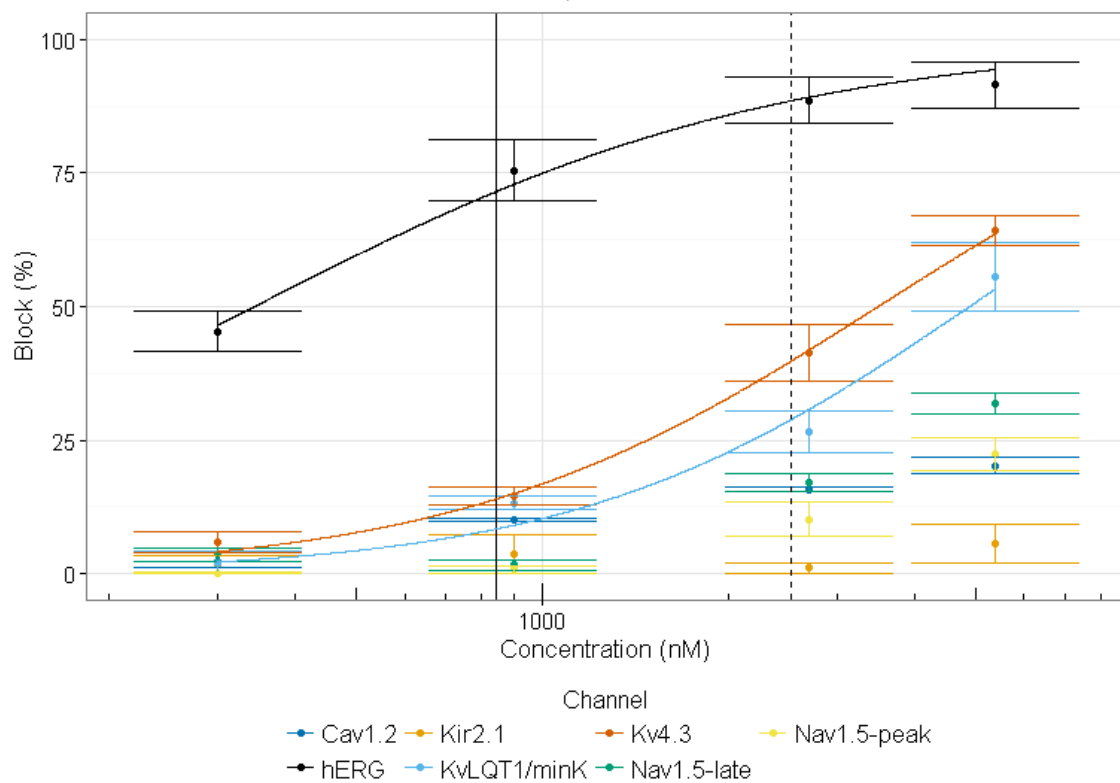
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	1550	481	-	-	-	4036	3886
h	0.9	0.8	-	-	-	0.9	0.9
Block (%) at							
Free Cmax	10.0	25.9	-	-	-	4.8	4.1
3X Free Cmax	22.8	45.9	-	-	-	11.6	10.6

Propafenone (Free Cmax = 131.0 nM)

quinidine

current	0.3 μ M	0.9 μ M	2.7 μ M	5.4 μ M
hERG	47.6,37.9,50.4	86.7,71.6,68.2	97.1,85.2,83.6	100,89.3,85.1
X \pm SEM	45.3 \pm 3.8	75.5 \pm 5.7	88.6 \pm 4.3	91.5 \pm 4.4
Nav1.5-peak	0.3, 0, 0	0, 0.3, 2.0	4.2, 11.2, 15.0	26.5, 16.4, 24.1
X \pm SEM	0.1 \pm 0.1	0.8 \pm 0.6	10.1 \pm 3.2	22.3 \pm 3.1
Nav1.5-late	1.3,5.6,3.6	0,1.6,3.1	13.7,19.7,17.8	27.7,34.3,33.5
X \pm SEM	3.5 \pm 1.2	1.6 \pm 0.9	17.1 \pm 1.8	31.8 \pm 2.1
Cav1.2	3.2,3.4,0.09	9.4,10.6,10.3	15.1,15.8,16.3	23.2,18.2,19.1
X \pm SEM	2.2 \pm 1.1	10.1 \pm 0.4	15.7 \pm 0.3	20.2 \pm 1.5
KvLQT1/mink	0, 0, 0, 6.2	13.1, 11.0, 15.7	25.1, 33.8, 20.8	48.9, 49.2, 68.4
X \pm SEM	1.6 \pm 1.6	13.3 \pm 1.4	26.6 \pm 3.8	55.5 \pm 6.5
Kv4.3	9.7, 4.7, 3.3	12.4, 13.6, 17.6	31.7, 50.0, 42.1	63.1, 69.3, 60.3
X \pm SEM	5.9 \pm 1.9	14.5 \pm 1.6	43.2 \pm 5.3	64.4 \pm 2.7
Kir2.1	0,0,5.2	0,11.0,0	0,0,3.0	0.4,3.9,12.5
X \pm SEM	1.7 \pm 1.7	3.7 \pm 3.7	1.0 \pm 1.0	5.6 \pm 3.6

Quinidine

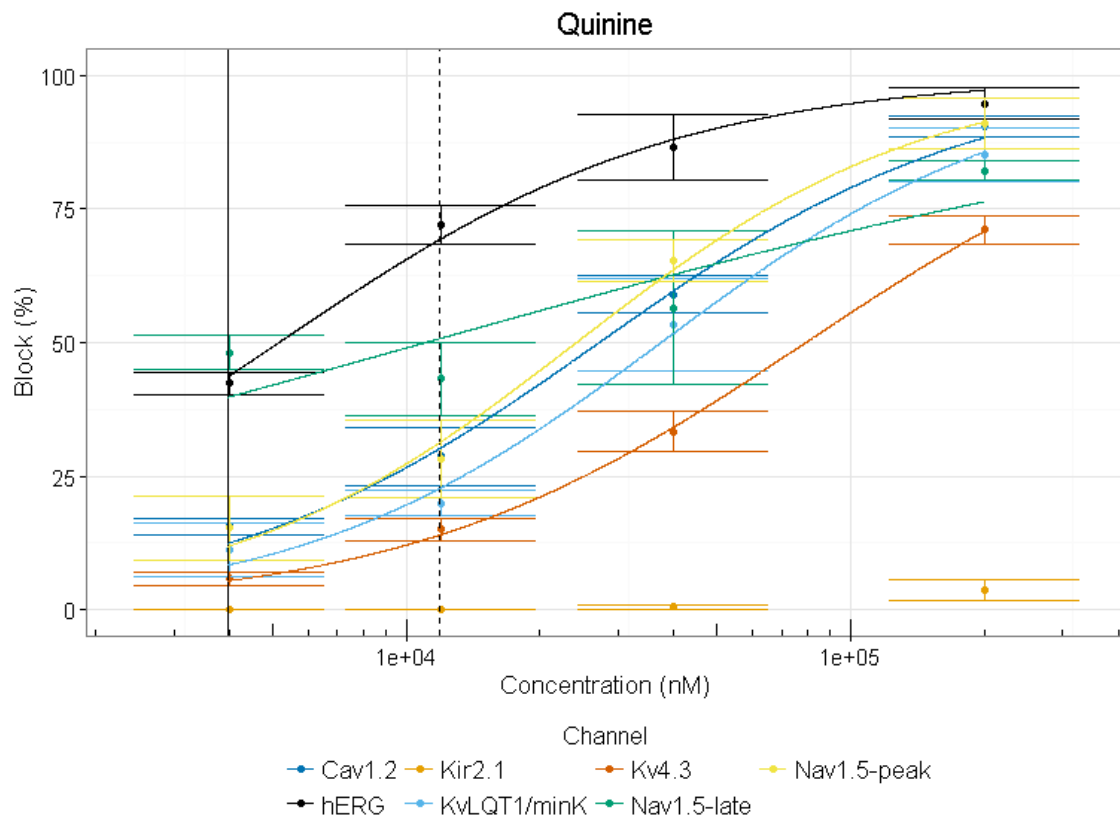


	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	-	343	-	3487	4899	-	-
h	-	1.0	-	1.3	1.4	-	-
Block (%) at							
Free Cmax	-	71.6	-	14.0	8.4	-	-
3X Free Cmax	-	88.7	-	39.9	28.9	-	-

Quinidine (Free Cmax = 842.9 nM)

quinine

current	4μM	12μM	40μM	200μM
hERG	40.1,46.7,40.3	74.5,76.9,65.1	92.2,93.0,74.4	97.0,98.2,89.2
X ± SEM	42.4 ± 2.2	72.2 ± 3.6	86.5 ± 6.1	94.8 ± 2.8
Nav1.5-peak	26.8,6.7,12.4	36.6,13.6,34.4	62.0,60.7,73.2	88.6,100,84.4
X ± SEM	15.3 ± 6.0	28.2 ± 7.3	65.3 ± 4.0	91.0 ± 4.7
Nav1.5-late	44.9,44.8,54.6	46.8,52.7,60.0	60.6,59.6,79.6,	81.6,79.8,87.6,79.7
X ± SEM	48.1 ± 3.3	53.2 ± 3.8	66.6 ± 6.5	82.2 ± 1.9
Cav1.2	18.1,15.8,12.7	30.7,37.0,18.2	63.4,61.4,52.1	94.1,87.6,89.4
X ± SEM	15.5 ± 1.6	28.6 ± 5.5	58.9 ± 3.5	90.9 ± 1.9
KvLQT1/mink	6.5,5.7,21.3	22.8,15.3,21.6	39.4,69.1,51.5	78.7,75.5,96.6,89.9
X ± SEM	8.8 ± 5.1	19.9 ± 2.3	53.3 ± 8.6	85.2 ± 4.9
Kv4.3	8.1, 5.6, 3.6	19.3, 12.7. 13.1	23.8, 37.1, 31.0, 41.4	66.7, 67.8, 66.2, 78.5, 76.7
X ± SEM	5.8 ± 1.3	15.0 ± 2.1	33.3 ± 3.8	71.2 ± 2.7
Kir2.1	0,0,0	0,0,0	0,1,3,0	6.8,4.2,0
X ± SEM	0 ± 0	0 ± 0	0.4 ± 0.4	3.7 ± 2.0



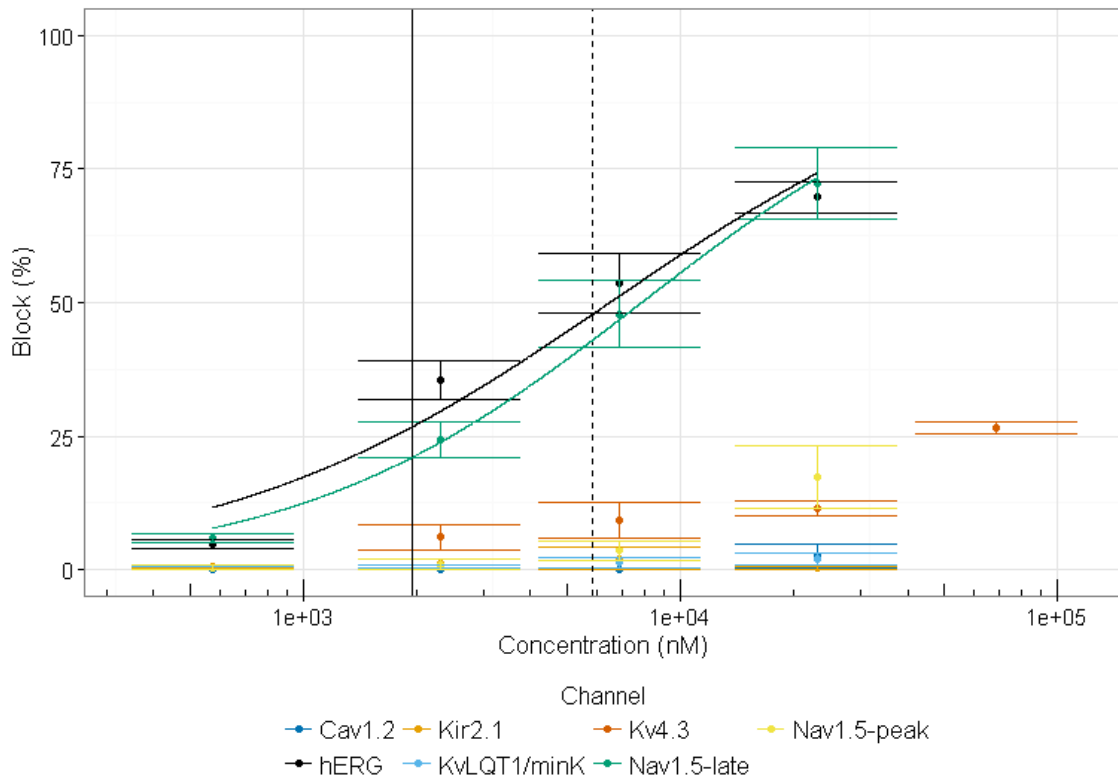
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	27178	5170	-	79254	37453	11053	24151
h	1.0	1.0	-	1.0	1.1	0.4	1.1
Block (%) at							
Free Cmax	12.3	43.5	-	5.3	8.3	39.6	11.8
3X Free Cmax	30.0	69.3	-	13.9	22.6	50.7	31.2

Quinine (Free Cmax = 3956.7 nM)

ranolazine

current	0.575μM	2.3μM	6.9μM	23μM	69μM
hERG	6.5, 5.7, 2.5, 4.2	39.8, 38.5, 28.1	42.9, 55.9, 61.9	64.5, 74.6, 70.3	-----
X ± SEM	4.7 ± 0.9	35.5 ± 3.7	53.6 ± 5.6	69.8 ± 2.9	-----
Nav1.5-peak	0, 0, 1.2	0, 0, 2.9	0, 4.4, 6.2	13.2, 10.0, 28.9	-----
X ± SEM	0.4 ± 0.4	1.0 ± 1.0	3.5 ± 1.8	17.4 ± 5.8	-----
Nav1.5-late	6.0,7.1,4.5	18.8,23.9,30.1	36.5,58.4,48.7	58.9,79.7,78.3	-----
X ± SEM	5.9 ± 0.8	24.3 ± 3.3	47.9 ± 6.3	72.3 ± 6.7	-----
Cav1.2	0,0,0	0,0,0	0,0,0	6.8,0.6,0	-----
X ± SEM	0 ± 0	0 ± 0	0 ± 0	2.5 ± 2.2	-----
KvLQT1/mink	0.7, 0, 0	1.0, 0, 0.8	3.0, 0, 0.9	2.5, 0, 3.8	-----
X ± SEM	0.2 ± 0.2	0.6 ± 0.3	1.3 ± 0.9	2.1 ± 1.1	-----
Kv4.3	-----	1.2, 9.0, 8.0	15.7, 5.2, 6.9	9.3, 11.4, 13.7	25.2, 28.8, 25.4
X ± SEM	-----	6.1 ± 2.5	9.3 ± 3.3	11.5 ± 1.3	26.5 ± 1.2
Kir2.1	0,0.4,1.2	0,3.0,0,	0,6.2,0,	0,0.8,0	-----
X ± SEM	0.5 ± 0.4	1.0 ± 1.0	2.1 ± 2.1	0.3 ± 0.3	-----

Ranolazine



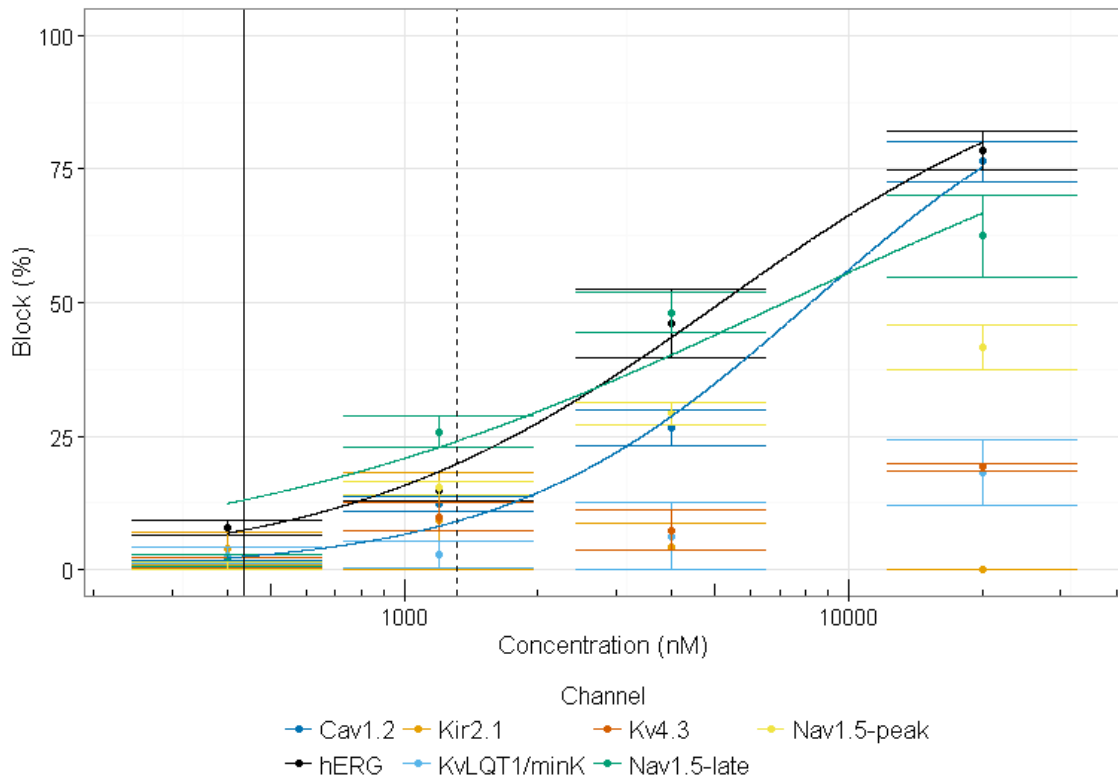
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	-	6490	-	-	-	7884	-
h	-	0.8	-	-	-	0.9	-
Block (%) at							
Free Cmax	-	26.7	-	-	-	21.2	-
3X Free Cmax	-	47.8	-	-	-	43.0	-

Ranolazine (Free Cmax = 1948.2 nM)

ritonavir

current	0.4μM	1.2μM	4μM	20μM
hERG	5.6,7.4,10.3	13.9,12.2,18.0	52.2,31.7,39.5,60.7	78.7,84.1,68.5,82.6
X ± SEM	7.8 ± 1.4	14.7 ± 1.7	46.0 ± 6.5	78.5 ± 3.5
Nav1.5-peak	2.3,0,0	16.8,16.1,12.9	24.4,28.2,26.2,31.8,35.5	30.0,41.4,48.2,47.2
X ± SEM	0.8 ± 0.8	15.3 ± 1.2	29.2 ± 2.0	41.7 ± 4.2
Nav1.5-late	0,3.8,1.5	20.7,25.6,31.1	44.9,55.5,44.0	45.5,63.5,58.7,82.1
X ± SEM	1.8 ± 1.1	25.8 ± 3.0	48.1 ± 3.7	62.5 ± 7.6
Cav1.2	0.6,0,2.4	14.2,9.6,12.9	25.1,21.4,32.8	69.9,76.3,83.0
X ± SEM	1.0 ± 0.7	12.2 ± 1.4	26.4 ± 3.4	76.4 ± 3.8
KvLQT1/mink	6.1,0,0,6.7,0	10.0,1.2,0,0	18.7,0,0	24.5,24.1,5.8
X ± SEM	2.6 ± 1.6	2.8 ± 2.4	6.2 ± 6.2	18.1 ± 6.2
Kv4.3	0, 3.2, 0.8	15.0, 8.1, 6.6	1.1, 13.9, 7.2	20.2, 19.7, 17.6
X ± SEM	1.3 ± 1.0	9.9 ± 2.6	7.4 ± 3.7	19.2 ± 0.8
Kir2.1	9.9,0,1.5	0,27.3,0	0,13.0,0,	0,0,0
X ± SEM	3.8 ± 3.1	9.1 ± 9.1	4.3 ± 4.3	0 ± 0

Ritonavir



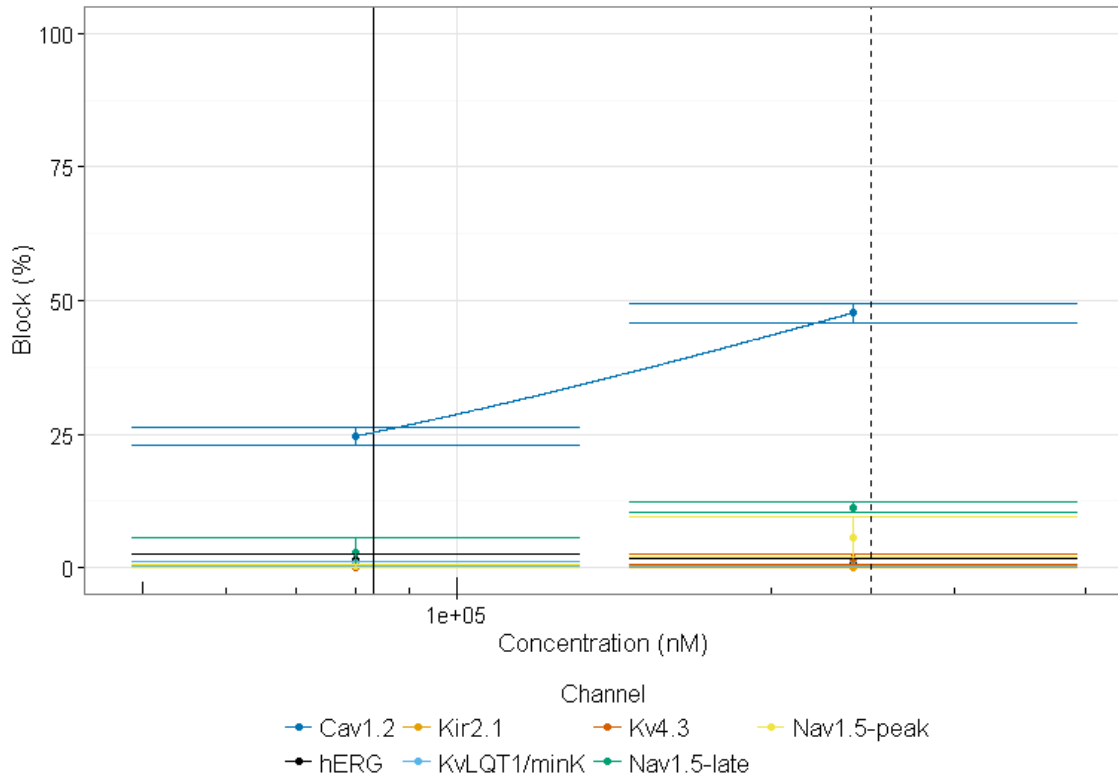
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	8228	5157	-	-	-	7175	-
h	1.3	1.0	-	-	-	0.7	-
Block (%) at							
Free Cmax	2.4	7.5	-	-	-	13.0	-
3X Free Cmax	9.0	19.8	-	-	-	23.9	-

Ritonavir (Free Cmax = 436.9 nM)

rufinamide

current	80μM	240μM	800μM	4000μM
hERG	0, 3.9, 0	2.7, 0, 0	Not soluble	Not soluble
X ± SEM	1.3 ± 1.3	0.9 ± 0.9		
Nav1.5-peak	0.9,0,0	2.0,1.8,13.4	Not soluble	Not soluble
X ± SEM	0.3 ± 0.3	5.7 ± 3.8		
Nav1.5-late	0,8.2,0	13.2,10.2,10.4	Not soluble	Not soluble
X ± SEM	2.7 ± 2.7	11.3 ± 1.0		
Cav1.2	24.9,27.3,21.7	51.1,47.1,45.0	Not soluble	Not soluble
X ± SEM	24.6 ± 1.6	47.7 ± 1.8		
KvLQT1/mink	0.4,0.2,1.7	1.3,0,0,4.8	Not soluble	Not soluble
X ± SEM	0.8 ± 0.5	1.5 ± 1.1		
Kv4.3	0, 0, 0.2	0, 1.3, 3.5	Not soluble	Not soluble
X ± SEM	0.07 ± 0.07	1.6 ± 1.0		
Kir2.1	0,0,0	0,0,0	Not soluble	Not soluble
X ± SEM	0 ± 0	0 ± 0		

Rufinamide



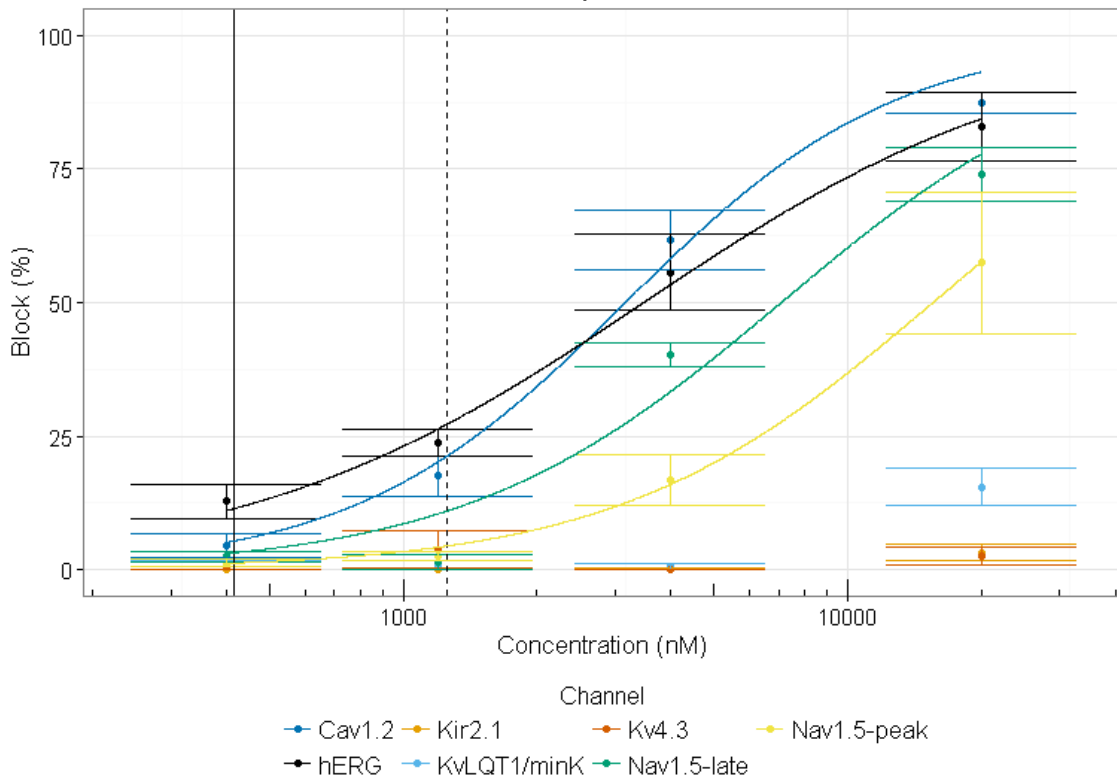
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	264448	-	-	-	-	-	-
h	0.9	-	-	-	-	-	-
Block (%) at							
Free Cmax	25.2	-	-	-	-	-	-
3X Free Cmax	48.6	-	-	-	-	-	-

Rufinamide (Free Cmax = 83126.9 nM)

saquinavir

current	0.4 μ M	1.2 μ M	4 μ M	20 μ M
hERG	7.1,18.4,12.7	24.2,28.1,16.9,25.9	69.0,47.9,66.5,39.4	86.8,85.2,95.0,64.6
X \pm SEM	12.7 \pm 3.3	26.3 \pm 3.6	55.7 \pm 7.2	82.9 \pm 6.5
Nav1.5-peak	1.1,0,2.6	2.0,1.5,4.2	12.1,26.3,12.0	44.4,84.1,43.7
X \pm SEM	1.2 \pm 0.8	2.6 \pm 0.8	16.8 \pm 4.8	57.4 \pm 13.4
Nav1.5-late	0.7,4.2,2.3	4.3,0,0	44.2,36.7,39.7	78.1,64.1,79.8
X \pm SEM	2.4 \pm 1.0	1.4 \pm 1.4	40.2 \pm 2.2	74.0 \pm 5.0
Cav1.2	6.9,0,6.7	13.5,14.1,24.9	68.9,50.7,65.4	90.8,87.4,84.2
X \pm SEM	4.5 \pm 2.3	17.5 \pm 3.7	61.7 \pm 5.6	87.5 \pm 1.9
KvLQT1/mink	0, 2.6, 0	0, 2.7, 0	0, 1.8, 0	12.2, 22.4, 11.8
X \pm SEM	0.9 \pm 0.9	0.9 \pm 0.9	0.6 \pm 0.6	15.5 \pm 3.5
Kv4.3	0, 2.0, 0	0, 0.4, 10.7	0, 0, 0.07	0, 0, 8.3, 0, 4.2
X \pm SEM	0.7 \pm 0.7	3.7 \pm 3.5	0.02 \pm 0.02	2.5 \pm 1.7
Kir2.1	0,0,0	0,0,0	1.6,0,0.5	5.1,0,4.3
X \pm SEM	0 \pm 0	0 \pm 0	0.7 \pm 0.5	3.1 \pm 1.6

Saquinavir



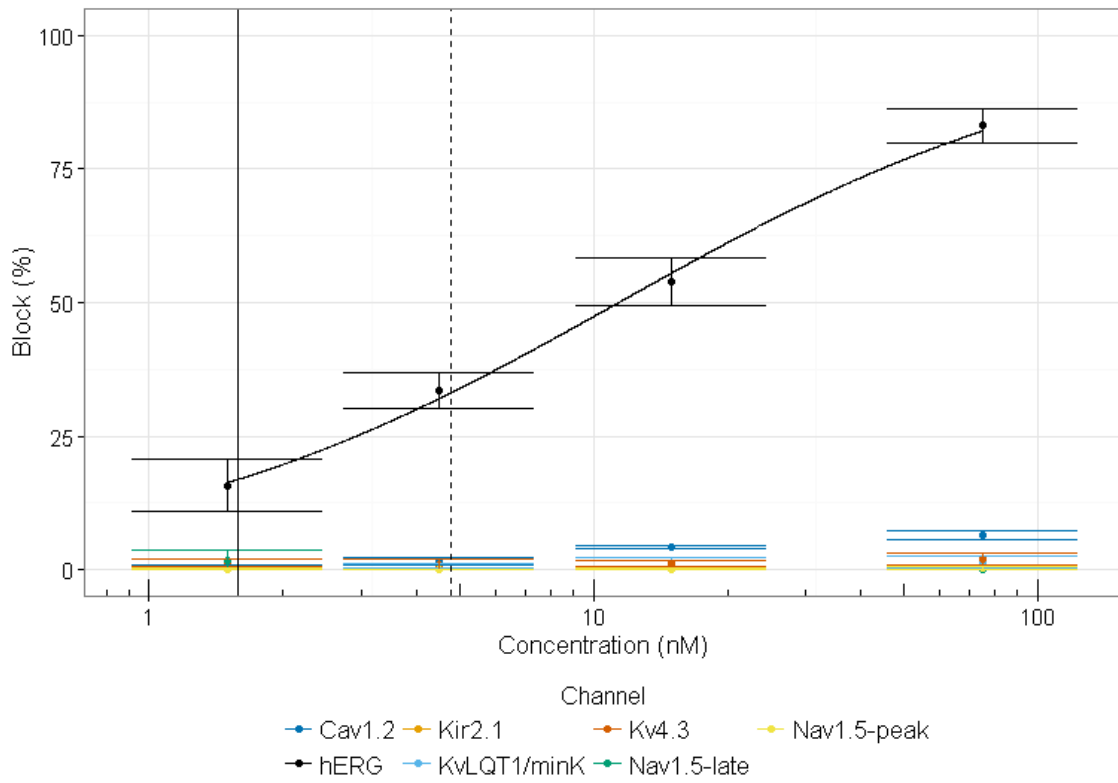
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	3161	3477	-	-	-	7088	15568
h	1.4	1.0	-	-	-	1.2	1.2
Block (%) at							
Free Cmax	5.3	11.3	-	-	-	3.1	1.2
3X Free Cmax	21.2	27.1	-	-	-	10.9	4.4

Saquinavir (Free Cmax = 417.2 nM)

sertindole

current	1.5nM	4.5nM	15nM	75nM
hERG	7.2, 15.7, 24.3	27.1, 35.0, 38.6	47.6, 51.3, 62.8	77.4, 83.7, 88.2
X ± SEM	15.7 ± 4.9	33.6 ± 3.4	53.9 ± 4.6	83.1 ± 3.1
Nav1.5-peak	0.4, 0, 0	0, 0, 0	0, 0, 0.4	1.0, 0, 0
X ± SEM	0.1 ± 0.1	0 ± 0	0.1 ± 0.1	0.3 ± 0.3
Nav1.5-late	0,0,0	5.0,0,1.5	1.5,0,3.0	0,4.9,1.0
X ± SEM	0 ± 0	0.5 ± 0.5	1.5 ± 0.9	2.0 ± 1.5
Cav1.2	1.3,0.3,0,	2.0,2.5,0,	3.5,4.4,4.4	5.3,8.2,6.1
X ± SEM	0.5 ± 0.4	1.5 ± 0.8	4.1 ± 0.3	6.5 ± 0.9
KvLQT1/mink	0,0,0	1.2,0,0.8	0.3,0,3.3	0.9,0,3.7
X ± SEM	0 ± 0	0.7 ± 0.4	1.2 ± 1.1	1.5 ± 1.1
Kv4.3	0, 2.1, 2.0	0, 0, 2.9	0, 2.0, 1.4	0, 3.7, 2.1
X ± SEM	1.4 ± 0.7	1.0 ± 1.0	1.1 ± 0.6	1.9 ± 1.1
Kir2.1	0,0,0.3	0,0,0	0,0,0	0,0,0
X ± SEM	0.1 ± 0.1	0 ± 0	0 ± 0	0 ± 0

Sertindole



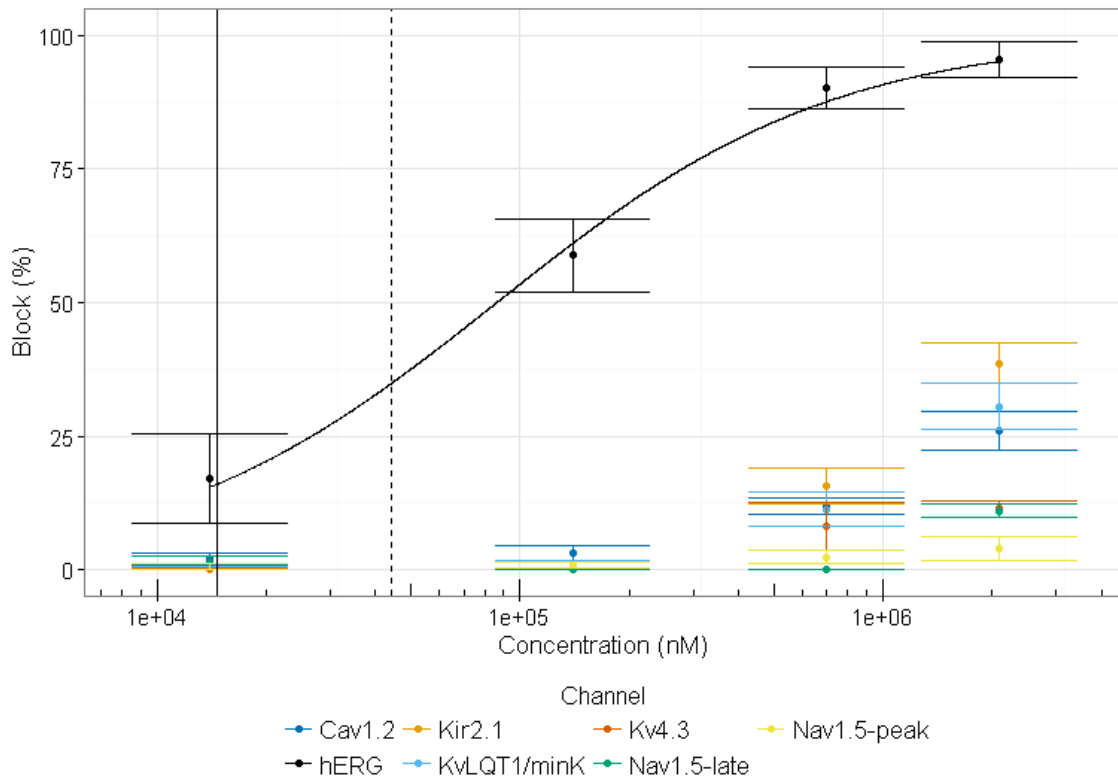
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	-	11	-	-	-	-	-
h	-	0.8	-	-	-	-	-
Block (%) at							
Free Cmax	-	16.9	-	-	-	-	-
3X Free Cmax	-	33.0	-	-	-	-	-

Sertindole (Free Cmax = 1.6 nM)

sotalol

current	14 μ M	140 μ M	700 μ M	2100 μ M
hERG	33.7,7.2,10.4	70.9,47.2,58.6	97.6,84.2,89.2	99.7,88.9,97.7
X \pm SEM	17.1 \pm 8.4	58.9 \pm 6.9	90.3 \pm 3.9	95.9 \pm 3.3
Nav1.5-peak	0,1.4,0.3	0,1.8,0.7	0,2.6,4.3	0,3.9,7.8
X \pm SEM	0.6 \pm 0.4	0.8 \pm 0.5	2.3 \pm 1.3	3.9 \pm 2.3
Nav1.5-late	0,0,0	0,0,0.4	0,3,0,0	15.4,11.8,5.2
X \pm SEM	0 \pm 0	0.1 \pm 0.1	1.0 \pm 1.0	10.8 \pm 3.0
Cav1.2	3.6,0,2.4	4.8,0,4.1	13.5,8.6,13.4	32.1,19.3,26.6
X \pm SEM	2.0 \pm 1.1	3.0 \pm 1.5	11.8 \pm 1.6	26.0 \pm 3.7
KvLQT1/mink	0,0.9,0	0.4,2.3,0	17.6,5.5,15.8,6.1	33.1,22.2,36.4
X \pm SEM	0.3 \pm 0.3	0.9 \pm 0.7	11.3 \pm 3.2	30.6 \pm 4.3
Kv4.3	0.6, 0, 0	0.3, 0, 0.1	16.1, 7.7, 0.5	15.9, 8.7, 11.0, 9.9
X \pm SEM	0.2 \pm 0.2	0.1 \pm 0.09	8.1 \pm 4.5	11.4 \pm 1.8
Kir2.1	0,0,0	0,0,0	15.6,21.6,9.7	38.6,45.2,32.0
X \pm SEM	0 \pm 0	0 \pm 0	15.6 \pm 3.4	38.6 \pm 3.8

Sotalolol



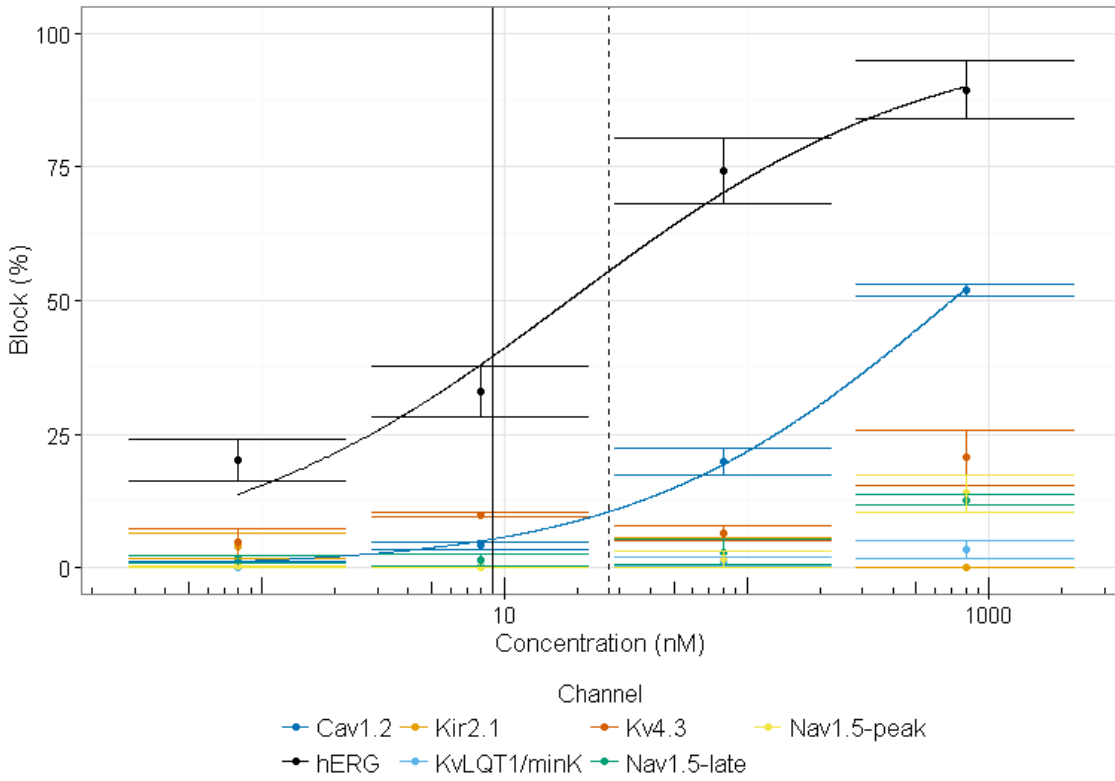
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	-	86369	-	-	-	-	-
h	-	0.9	-	-	-	-	-
Block (%) at							
Free Cmax	-	15.9	-	-	-	-	-
3X Free Cmax	-	34.7	-	-	-	-	-

Sotalolol (Free Cmax = 14686.4 nM)

terfenadine

current	0.8nM	8nM	80nM	800nM
hERG	27.4,18.9,13.8	45.5,22.8,30.4,33.5	85.9,72.4,64.5	96.2,78.6,93.6
X ± SEM	20.0 ± 4.0	33.1 ± 4.7	74.3 ± 6.3	89.5 ± 5.5
Nav1.5-peak	0.1, 0, 0.5	0, 0, 0	0, 0, 4.7	16.8, 21.6, 12.3, 5.1
X ± SEM	0.2 ± 0.2	0 ± 0	1.6 ± 1.6	14.0 ± 3.5
Nav1.5-late	0,0,6.1	0,7.9,6.1	0,8.9,0	15.5,23.4,9.8
X ± SEM	2.0 ± 2.0	4.7 ± 2.4	3.0 ± 3.0	16.2 ± 3.9
Cav1.2	3.8,1.4,0,	4.5,2.7,5.2	24.0,15.5,20.1	49.7,53.1,53.2
X ± SEM	1.7 ± 1.1	3.5 ± 1.4	19.9 ± 2.5	52.0 ± 1.2
KvLQT1/mink	0, 0.05, 0	0.6, 0, 0	0.5, 2.6, 0	0, 4.0, 5.9
X ± SEM	0.02 ± 0.02	0.2 ± 0.2	1.0 ± 0.8	3.3 ± 1.7
Kv4.3	0, 5.3, 8.9	10.3, 10.1, 9.0	4.3, 9.1, 6.3	28.5, 22.1, 11.1
X ± SEM	4.7 ± 2.6	9.8 ± 0.4	6.6 ± 1.4	20.5 ± 5.1
Kir2.1	8.2,3.9,0,	0,0,0	0,8.6,0	0,0,0
X ± SEM	4.0 ± 2.4	0 ± 0	2.9 ± 2.9	0 ± 0

Terfenadine



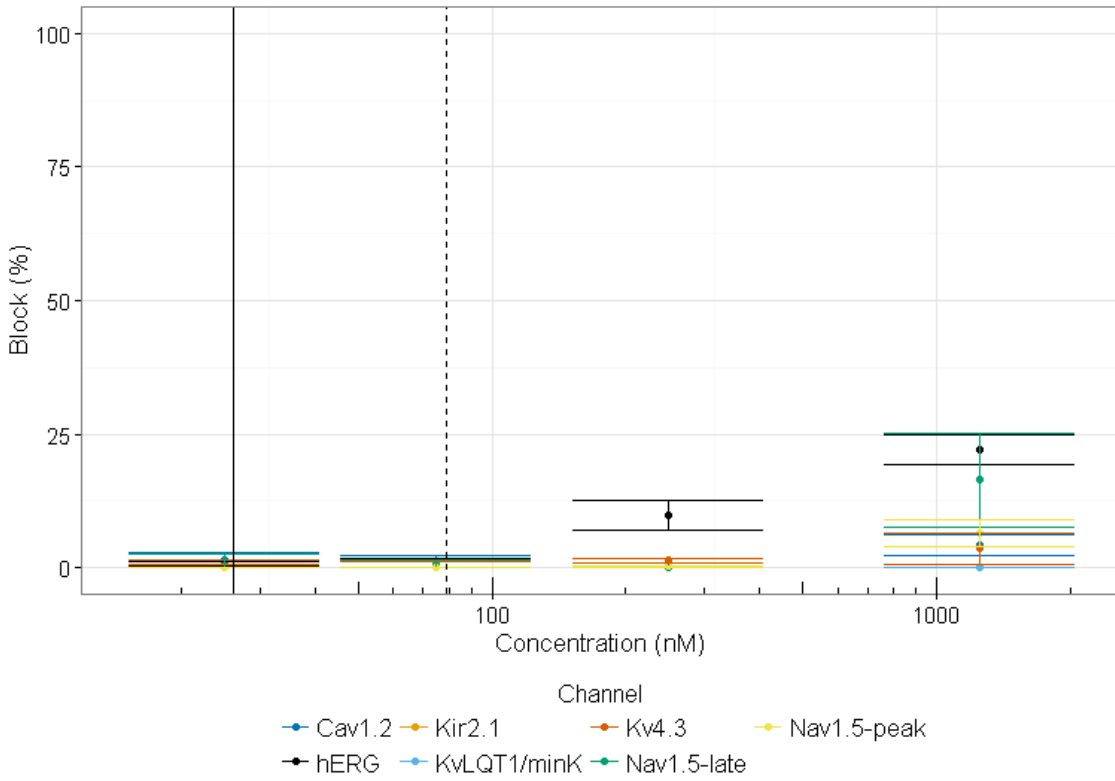
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	700	19	-	-	-	-	-
h	0.7	0.6	-	-	-	-	-
Block (%) at							
Free Cmax	5.3	39.5	-	-	-	-	-
3X Free Cmax	10.4	55.5	-	-	-	-	-

Terfenadine (Free Cmax = 9.0 nM)

toremefine

current	0.025 μ M	0.075 μ M	0.250 μ M	1.250 μ M
hERG	0.8,0.4,1.9,0	0,2.4,0,	14.7,9.4,5.3	27.2,21.3,17.9
X \pm SEM	0.8 \pm 0.4	0.8 \pm 0.8	9.8 \pm 2.7	22.1 \pm 2.7
Nav1.5-peak	0.1,0,0	0,0,0	0.6,0,0	11.2,2.8,5.1
X \pm SEM	0.03 \pm 0.03	0 \pm 0	0.2 \pm 0.2	6.4 \pm 2.5
Nav1.5-late	0,0,0	0,0,0	1.4,0,0	5.9,11.1,24.8
X \pm SEM	0 \pm 0	0 \pm 0	0.5 \pm 0.5	13.9 \pm 5.6
Cav1.2	0,0.09,4.1	3.4,0,0,	0.8,0,2.3	2.4,0,3.5,3.7,11.8
X \pm SEM	1.4 \pm 1.3	1.1 \pm 1.1	1.0 \pm 0.7	4.3 \pm 2.0
KvLQT1/mink	0,2.1,0	0,0.05,0	0,0,0	0,0,0
X \pm SEM	0.7 \pm 0.7	0.02 \pm 0.02	0 \pm 0	0 \pm 0
Kv4.3	1.7, 0.5, 0.5	1.7, 0.2, 0.03	1.9, 1.4, 0.6	2.1, 0, 12.2, 0
X \pm SEM	0.9 \pm 0.4	0.6 \pm 0.5	1.3 \pm 0.4	3.6 \pm 2.9
Kir2.1	0,0,0	0,0,0	0,0,0	0,0,0
X \pm SEM	0 \pm 0	0 \pm 0	0 \pm 0	0 \pm 0

Toremifene



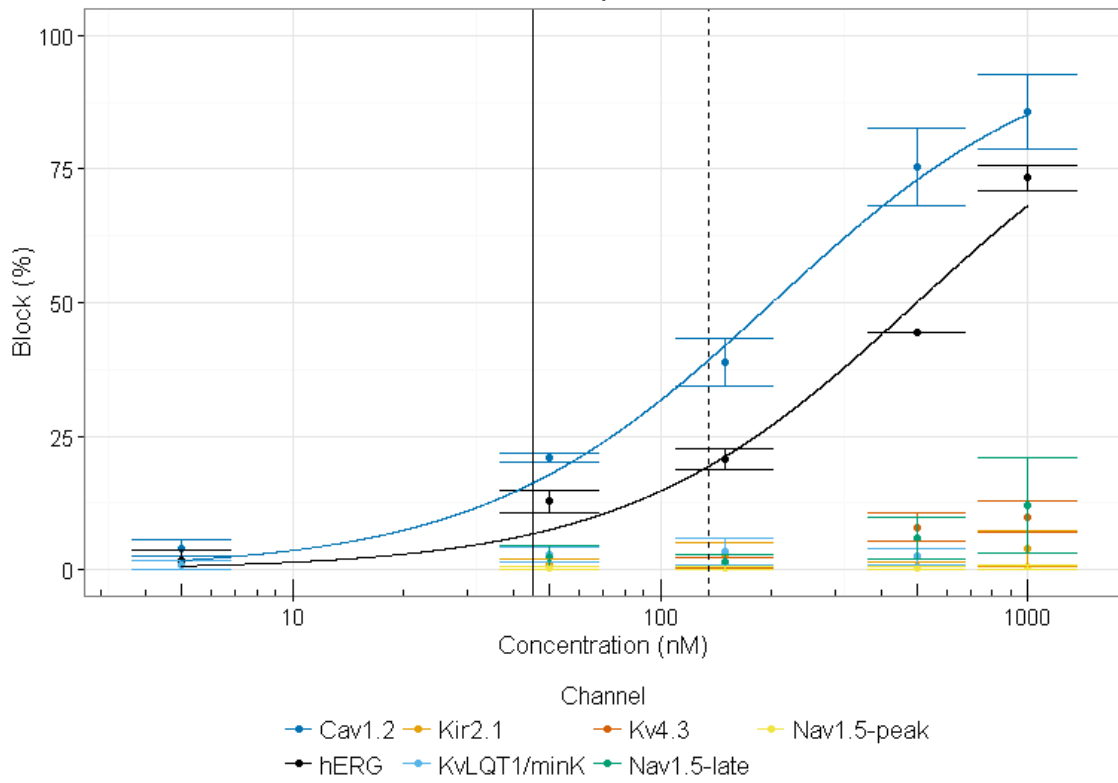
	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	-	-	-	-	-	-	-
h	-	-	-	-	-	-	-
Block (%) at							
Free Cmax	-	-	-	-	-	-	-
3X Free Cmax	-	-	-	-	-	-	-

Toremifene (Free Cmax = 26.3 nM)

verapamil

current	5nM	50nM	150nM	500nM	1000nM
hERG	0,3.6	8.5,15.4,14.3	18.8,18.5,24.8	44.4,44.4,44.5	77.2,74.1,68.7
X ± SEM	1.8	12.7 ± 2.1	20.7 ± 2.1	44.4 ± 0.03	73.3 ± 2.5
Nav1.5-peak	-----	0.8, 0, 0	0.3, 0.6, 0	0.8, 0, 0	1.2, 0.2, 0
X ± SEM	-----	0.3 ± 0.3	0.3 ± 0.2	0.3 ± 0.3	0.5 ± 0.4
Nav1.5-late		8.1,0,0	9.0,0,0	6.4,0,0	6.6,0,0
X ± SEM		2.7 ± 2.7	3.0 ± 3.0	2.1 ± 2.1	2.2 ± 2.2
Cav1.2	6.5,4.3,1.1	22.6,20.9,19.4	50.5,28.9,40.1,35.9	89.8,67.2,68.9	99.6,77.7,79.7
X ± SEM	4.0 ± 1.6	21.0 ± 0.9	38.9 ± 4.5	75.3 ± 7.3	85.7 ± 7.0
KvLQT1/mink	0, 0, 2.7	0, 3.4, 4.7	0, 1.6, 8.2	0, 1.8, 5.4	-----
X ± SEM	0.9 ± 0.9	2.7 ± 1.4	3.3 ± 2.5	2.4 ± 1.6	-----
Kv4.3	-----	0.9, 0, 0	0.9, 3.2, 0	8.4, 12.2, 3.2	5.8, 15.6, 8.2
X ± SEM	-----	0.3 ± 0.3	1.4 ± 1.0	7.9 ± 2.6	9.9 ± 3.0
Kir2.1	-----	0,2.9,0	0,9.1,2.2,0	0,1.9,0	0,10.6,1.0
X ± SEM	-----	1.0 ± 1.0	2.8 ± 2.2	0.6 ± 0.6	3.9 ± 3.4

Verapamil



.	Cav1.2	hERG	Kir2.1	Kv4.3	KvLQT1/minK	Nav1.5-late	Nav1.5-peak
IC50	202	499	-	-	-	-	-
h	1.1	1.1	-	-	-	-	-
Block (%) at							
Free Cmax	16.1	6.6	-	-	-	-	-
3X Free Cmax	39.1	19.2	-	-	-	-	-

Verapamil (Free Cmax = 45.0 nM)