SUPPORTING INFORMATION

Data from individual experiments for the 20 Validation Drugs.

Drug	Well number	Mean Well $P_{7.4}$ A to B [1] + GF120918 (nm/sec) [2]	Mean $P_{7.4}$ (nm/sec)[3]	Mean Well $P_{5.5}$ A to B + GF120918 (nm/sec)	Mean $P_{5.5}$ (nm/sec)	Efflux Ratio in Absence of GF120918 at pH 7.4
Acyclovir	1	26	20 ± 4.8	15	14 ± 2.7	0.9
	2	20		10		
	3	16		15		
Amoxicillin	1	11	9.7± 1.3	13	10± 2.6	1.1
	2	8.3		10		
	3	10		7.4		
Atenolol	1	16	12 ± 3.6	5.5	8.0 ± 4.3	1.1
	2	9.9		5.5		
	3	9.5		13		
Carbamazepine	1	556	652 ± 125	758	675 ± 86	0.6
	2	792		585		
	3	606		683		
Cimetidine	1	11	13 ± 1.6	7.6	8.9 ± 4.5	3.4
	2	12		5.1		
	3	14		13		
Hydrochlorothiazide	1	10	11 ± 2.1	6.0	7.6 ± 2.6	1.0
	2	9.2		10		
	3	13		6.1		
Ketoprofen	1	164	156 ± 15	805	805 ± 30	0.9
	2	166		775		

	3	138		835		
Labetalol	1 2 3	208 201 194	201 ± 7.0	42 42 40	42 ± 1.1	14
Lisinopril	1 2 3	6.0 5.0 9.0	6.7 ± 2.1	2.2 3.4 3.9	3.2 ± 0.90	0.4
Metoprolol	1 2 3	424 405 402	410 ± 12	23 56 66	48 ± 22	0.8
Minoxidil	1 2 3	26 25 28	26 ± 1.2	26 26 26	26 ± 0.25	1.3
Nadolol	1 2 3	16 9.9 8.3	11 ± 4.0	4.8 6.9 12	8.0 ± 3.9	1.0
Naproxen	1 2 3	378 319 235	311 ± 72	977 1095 1284	1119 ± 154	0.7
Pindolol	1 2 3	273 284 243	266 ± 21	48 42 61	50 ± 9.7	1.1
Propranolol	1 2 3	666 357 320	447 ± 190	- 55 56	56 ± 1.2	0.4
Ranitidine	1	11	7.5 ± 3.3	7.0	5.5 ± 1.7	1.6

	2 3	6.8 4.7		6.0 3.6		
Sulpiride	1 2 3	20 14 13	16 ± 3.8	8.3 8.8 9.2	8.9 ± 0.29	0.9
Theophylline	1 2 3	305 329 276	303 ± 26	290 331 330	317 ± 23	0.9
Trimethoprim	1 2 3	189 142 168	166 ± 24	62 63 60	61 ± 2.8	3.4
Verapamil	1 2 3	286 263 240	263 ± 23	52 49 58	53 ± 4.5	0.8

1. A=apical direction, B=basolateral direction

2. The mean individual well passive permeability value (P_x) at pH 5.5 ($P_{5.5}$) and pH 7.4 ($P_{7.4}$) was calculated using the mean permeability values from each the 60, 90 and 120 minute time points.

3. The mean passive permeability value (P_x) at pH 5.5 ($P_{5.5}$) and pH 7.4 ($P_{7.4}$) was calculated using the mean individual well permeability values (n=3 wells).