

S3 Dataset: Individual peak current and current area (net charge) values in HEK293 cells expressing human or rat $\alpha 7$ nAChR determined by patch clamp electrophysiology.

Rat $\alpha 7$ nAChR/HEK293 cells: BMS-933043 Peak Current normalized to 3 mM ACh				
0.1 μ M	0.011578	0.010832	0.012359	0.013095
0.3 μ M	0.04784	0.028294	0.032838	0.036686
1 μ M	0.08082	0.071105	0.073558	0.074896
3 μ M	0.155794	0.151942	0.165138	0.13648
10 μ M	0.2731	0.29042	0.295206	0.215272
Rat $\alpha 7$ nAChR/HEK293 cells: BMS-933043 Net Charge (Current Area) normalized to 300 μ M ACh				
0.1 μ M	0.00864	-0.014	0.059171	0.087701
0.3 μ M	0.413801	0.285276	0.473938	0.525558
1 μ M	0.717234	0.355507	0.662611	0.654857
3 μ M	0.791905	0.479351	0.667657	0.656892
10 μ M	0.826588	0.463709	0.732215	0.667285

Human $\alpha 7$ nAChR/HEK293 cells: BMS-933043 Peak Current normalized to 3 mM ACh							
0.1 μ M	0.005961	0.006675	0.008382	0.007317	0.006875	0.005721	0.00606
0.3 μ M	0.026371	0.023027	0.023888	0.024376	0.029505	0.03259	0.027371
1 μ M	0.054785	0.032937	0.043924	0.05131	0.085041	0.080244	0.072721
3 μ M	0.126023	0.099704	0.109235	0.099127	0.19658	0.201977	0.18297
10 μ M	0.216951	0.153151	0.170151	0.177877	0.333392	0.298713	0.30045
Human $\alpha 7$ nAChR/HEK293 cells: BMS-933043 Net Charge (Current Area) normalized to 300 μ M ACh							
0.1 μ M	0.019825	0.013184	0.038657	0.037817	0.022826	0.013267	0.038558
0.3 μ M	0.349601	0.36236	0.321236	0.321544	0.295406	0.357581	0.414317
1 μ M	0.695221	0.630407	0.655398	0.612181	0.619044	0.659231	0.812854
3 μ M	0.794676	0.779117	0.765452	0.70252	0.69028	0.699137	0.88799
10 μ M	0.80353	0.753716	0.796899	0.763672	0.722352	0.678848	0.882297

Rat $\alpha 7$ nAChR/HEK293 cells: NS-6740 Inhibition of BMS-933043 Peak Current normalized to BMS-933043 10 μ M alone						
10 nM	1.119375	1.054216	0.873004	1.024836	1.218392	1.26404
30 nM	1.065267	1.128172	1.034426	1.099443	1.466008	0.918053
100 nM	1.201133	1.193386	1.131201	0.996583	1.193301	1.047291
300 nM	1.080938	0.455813	0.828201	0.196243	0.331568	0.197239
1 μ M	0.096116	0.087506	0.101631	0.096465	0.170634	0.061213
3 μ M	0.054793	0.084062	0.113831	0.060629	0.090642	0.044333
Rat $\alpha 7$ nAChR/HEK293 cells: NS-6740 Inhibition of BMS-933043 Net Charge (Current Area) normalized to BMS-933043 10 μ M alone						
10 nM	0.936133	1.053484	1.037169	1.061256	1.326628	1.336793

30 nM	0.823193	0.964182	0.851603	1.057142	1.360053	0.761557
100 nM	0.872405	0.941266	1.090588	0.886582	1.080852	1.082328
300 nM	0.869644	0.370161	0.746063	0.150527	0.186606	0.211792
1 μ M	0.047941	0.064529	0.132148	0.068485	0.059664	0.059869
3 μ M	-0.00202	-0.01005	-0.01049	0.007827	0.00378	0.007194

Human α 7 nAChR/HEK293 cells: EVP-6124 Peak Current normalized to 3 mM ACh				
0.03 μ M	0.023095	0.030321	0.023284	0.013159
0.1 μ M	0.048497	0.067042	0.097102	0.041302
0.3 μ M	0.071567	0.107206	0.154024	0.076664
1 μ M	0.127042	0.144738	0.254666	0.142149
3 μ M	0.187737	0.244068	0.383192	0.255804
10 μ M	0.243764	0.265356	0.462654	0.303426
Human α 7 nAChR/HEK293 cells: EVP-6124 Net Charge (Current Area) normalized to 300 μ M ACh				
0.03 μ M	0.163264	0.206418	0.115292	0.134195
0.1 μ M	0.840485	1.081258	0.847891	0.872342
0.3 μ M	1.200793	1.30184	1.444892	1.418354
1 μ M	1.413753	1.498727	1.608322	1.442349
3 μ M	1.219895	1.197068	1.303621	1.069781
10 μ M	0.34903	0.405457	0.393906	0.326985

Rat α 7 nAChR/HEK293 cells: TC-5619 Peak Current normalized to 3mM ACh			
0.001 μ M	0.003543	0.011618	0.003662
0.003 μ M	0.003116	0.008701	0.005453
0.01 μ M	0.006073	0.007536	0.009875
0.03 μ M	0.020042	0.015667	0.021391
0.1 μ M	0.054081	0.04485	0.051832
0.3 μ M	0.159873	0.12415	0.114915
1 μ M	0.276001	0.257587	0.267948
3 μ M	0.4166	0.427866	0.455481
10 μ M	0.484663	0.485054	0.673182
Rat α 7 nAChR/HEK293 cells: TC-5619 Net Charge (Current Area) normalized to 300 μ M ACh			
0.001 μ M	0.012908	0.179462	0.008199
0.003 μ M	-0.00013	0.032411	0.001885
0.01 μ M	0.000016	0.002188	-0.00959
0.03 μ M	0.149155	0.14684	0.202789
0.1 μ M	0.687896	0.723864	0.848076
0.3 μ M	1.092841	1.106901	1.105128
1 μ M	1.241725	1.14323	1.297158
3 μ M	1.233945	1.270866	1.311737
10 μ M	1.226251	1.317075	1.306027