

Table S5. Data generated during this study.

Control	Flupenthixol	GFP	Cre Negative
53.14775	2.667828111	2.099232	1.8285
49.38893	3.086868985	2.144204	2.1327
51.80305	1.7503937	2.865843	3.2794
46.58431	1.522068576	2.668221	2.2023
51.69445	2.128707987	2.659651	1.5319
34.86758	1.787914359	1.91627	2.1175
38.11447	1.910857611		7.4791
26.2983	2.409698436		8.3367
33.96649	1.755878489		4.6553
29.53085	2.234333535		4.9262
14.62131	2.413795669		7.2811
12.46431	2.570936734		4.4119
12.69833	2.200527709		4.567
11.91053	1.737604382		10.4148
14.83358			9.5706
3.389124			8.2926
29.61016			4.3059
25.39001			1.1583
21.19334			1.648
			1.8625
			1.2368
			1.6522
			1.5573

Table S5. Data generated during this study (continued).

Delta F/F		Rise time		Response Width	
Control	Amphetamine	Control	Amphetamine	Control	Amphetamine
53.14775	166.9391	4.295	6.533	18.787	19.899
49.38893	112.3418	3.654	5.9	13.591	18.252
51.80305	97.3278	4.59	6.464	18.404	18.718
46.58431	93.11432	2.924	9.691	9.377	22.37
51.69445	90.31734	4.937	6.408	19.33	18.697
34.86758	67.16142	4.744	5.606	18.929	19.245
38.11447	55.84874	4.523	3.952	19.097	17.224
26.2983	37.85231	3.303	4.49	8.133	17.662
33.96649	48.85161	4.133	3.909	11.401	17.298
29.53085	68.72813	4.737	6.391	18.638	19.461
14.62131	11.90906	4.317	5.162	11.771	18.601
12.46431	15.12109	3.219	6.397	14.288	13.022
12.69833	8.454579	1.96	4.436	6.202	17.261
11.91053	26.17169	1.662	4.041	4.723	17.633
14.83358	28.76416	4.612	1.515	18.752	4.26
3.389124	13.95962	5.091	5.554	16.494	8.516
29.61016	38.87875	4.312	5.747	11.651	20.076
25.39001	33.35715	4.376	4.998	8.589	18.963
21.19334	28.27916	4.164	4.706	12.812	18.752

Table S5. Data generated during this study (continued).

Control		Flupenthixol		SCH23390		Sulpiride		Cocktail	
Basal	DA	Basal	DA	Basal	DA	Basal	DA	Basal	DA
0.2	0.8	0.4	0.2	0.090909	0.272727	0.25	0.5	0.1875	0.4375
0	0.125	0.125	0.125	0.090909	0.363636	0	0.333333	0.352941	0.470588
0	0.5	0	0	0.133333	0.133333	0.111111	0.333333	0.3	0.35
0.125	0.25	0	0.125	0.272727	0.090909	0.111111	0.222222	0.166667	0.555556
0.181818	0.727273	0.090909	0.181818	0.214286	0.285714	0.090909	0.272727	0.1	0.4
0.333333	0.666667	0.111111	0.444444			0	0.4375	0.083333	0.333333
						0	0.214286	0.142857	0.47619
						0	0.375	0.190476	0.666667
						0.5	0.75	0.25	0.45
						0.222222	0.833333	0.157895	0.526316
						0.153846	0.538462	0.125	0.875
						0.333333	0.888889		
						0.15	0.9		
						0.1	0.7		

Table S5. Data generated during this study (continued).

Depression (%)	Ca2+ event probability
14.61812378	0.6
29.47550071	0.8
54.3702251	0.5
32.2137142	0.6
7.725715998	0.411764706
17.99652592	0.555555556
25.9691465	0.75
35.13102915	0.590909091
10.99340247	0.4
10.97056405	0.5
26.61090383	0.65
2.437109745	0
17.64607371	0.25
51.39302864	0.761904762
21.70728713	0.4
25.41816404	0.583333333
32.64218623	0.666666667
16.27091455	0.4
24.6047814	0.6

Table S5. Data generated during this study (continued).

Depression (%)	Ca2+ event probability
0.5	28.76926068
0.333333333	20.48101461
0.3	19.37472815
0	3.038467547
0.333333333	20.87656155
0.333333333	19.45908114
0.5	36.62522297
0.285714286	32.46555756
0.444444444	40.47177969
0.25	10.17599736
0.375	15.63464851

Table S5. Data generated during this study (continued).

Calcium event probability					EPSC amplitude (%)						
Control		GDP Beta S		IP3R2KO		Control		GDP Beta S		IP3R2KO	
Basal	DA	Basal	DA	Basal	DA	Basal	DA	Basal	DA	Basal	DA
0	0.555556	0.125	0.375	0.222222	0.111111	88.77518	83.19037	112.4262	104.654	93.57559	66.29148
0	0.75	0.142857	0.142857	0	0	95.08214	98.98622	91.51111	79.96891	104.6821	102.6211
0.1	0.6	0.3	0.1	0	0	94.26148	56.78748	102.3852	135.544	95.89929	97.98475
0.227273	0.590909	0	0.1	0	0.272727	98.77379	81.78766	100.8503	123.4387	107.5286	108.036
0.2	0.4			0	0.4	89.2081	62.39598	92.74057	43.7023	99.84474	97.00925
0	0.6			0	0.1	124.9367	76.15972	117.2511	119.0846	90.30249	116.0245
0.222222	0.888889			0	0	93.8201	74.70047			100.101	91.83449
0.076923	0.846154			0.166667	0	96.19563	69.98151			93.76606	98.11352
0.066667	0.533333			0	0						
				0.166667	0						
				0	0						
				0.166667	0.166667						
				0	0						
				0	0						
				0.142857	0						

Table S5. Data generated during this study (continued).

GFAP D1 WT		GFAP D1 -/-		GFAP D1 WT		GFAP D1 -/-	
Basal	DA	Basal	DA	Basal	ATP	Basal	ATP
0.058824	0.529412	0.222222	0.166667	0	1	0	0.478261
0.142857	0.428571	0.363636	0.181818	0.117647	0.882353	0.069767	0.465116
0.102564	0.717949	0.266667	0.333333	0.058824	0.941176	0.1	0.5
0.179487	0.641026	0.125	0.625	0.3	0.7	0.04878	0.536585
0.117647	0.647059	0.222222	0.111111	0	1	0.185185	0.62963
		0.444444	0.333333	0	1	0.078947	0.605263
		0.25	0.375	0	1		
		0	0.333333	0	1		
		0	0.5	0	1		
				0.133333	0.8		

Table S5. Data generated during this study (continued).

GFAP D1 WT		GFAP D1 -/-	
Basal	DA	Basal	DA
106.6828	85.04125	96.81988	95.89937
108.8977	74.46239	97.61919	65.41243
98.03503	76.90264	100.5712	90.20531
100.7874	64.30788	102.8273	115.0616
107.2154	90.53338	91.11834	81.96839
111.8596	76.56349	95.67872	91.36782
105.0953	81.61427	103.3344	91.58317
105.1893	75.24182	99.28232	90.13654

Table S5. Data generated during this study (continued).

Control		CPT		Control		CPT	
Basal	DA	Basal	DA	Basal	optostim	Basal	optostim
0	0.6	0	0.4	0	1	0.142857	0.5
0.222222	0.888889	0	1	0.3	0.7	0	0.428571
0.076923	0.846154	0.307692	0.692308	0	0.25	0.375	0.75
0.066667	0.533333	0	0.466667	0.066667	0.533333	0.117647	0.352941
0.235294	0.588235	0.294118	0.588235	0.571429	0.428571	0.214286	0.428571
0.235294	0.411765	0.117647	0.529412	0.294118	0.411765		
				0	0.454545		
				0	0.5		
				0.142857	0.571429		
				0	0.666667		
				0.125	0.375		
				0	0.5		
				0.2	0.6		

Table S5. Data generated during this study (continued).

Control		CPT		Control		CPT	
Basal	DA	Basal	DA	Basal	optostim	Basal	optostim
103.321	79.34477	99.2474	100.7827	97.32349	89.28188	103.8322	127.0774
115.6014	88.73804	97.59501	89.63879	102.3886	73.72979	99.19295	124.4721
105.6736	74.02824	95.64175	78.49945	97.60583	79.12344	97.453	110.5238
100.1677	58.80088	102.7911	91.94574	110.9022	85.09452	106.9087	106.1905
98.05042	68.95881	99.68179	91.00468	97.25588	84.9485	99.26712	118.2122
		87.87702	136.5055	79.72649	72.04496	108.3213	87.79015
				81.55314	63.37478	89.47568	92.5726

Table S5. Data generated during this study (continued).

Control		GDP Beta S		IP3R2-/-		Control		GDP Beta S		IP3R2-/-	
Basal	DA	Basal	DA	Basal	DA	Basal	Ado	Basal	Ado	Basal	Ado
117.9468	45.42202	105.2535	87.49669	101.0132	115.7684	105.5133	70.72601	101.684	96.84186	100.554	55.79598
117.0449	47.99377	101.2974	109.8268	98.03316	79.0088	120.0567	52.60589	104.261	60.69714	91.57067	33.82343
105.0502	56.93169	105.2651	63.75053	111.5078	104.721	106.7227	37.14749	96.92768	83.39698	105.8903	45.19191
87.79771	61.19096	101.3868	136.2964	102.3217	94.8364	83.32075	65.0866	89.42266	55.46701	103.333	12.33046
108.0697	49.75271	103.2559	114.1959	95.5462	91.40483	97.32644	76.26466	96.48958	53.81499	94.50997	31.33142
109.4728	77.22716	113.5077	91.39395	102.6763	89.68616	96.77847	68.03507	88.72408	61.21106	100.4462	70.76899
		111.5412	115.8862	106.0173	83.83891			95.51914	20.05751	92.59321	61.0561
		90.81312	96.00754					100.3078	91.72776		

Table S5. Data generated during this study (continued).

Control		CPT		mCherry	
Basal	CNO	Basal	CNO	Basal	CNO
0	0.285714	0.142857	0.285714	0.2	0.2
0.2	0.6	0.111111	0.666667	0.1	0.1
0.25	0.375	0	0.25	0	0.375
0.25	0.25	0	0.2	0.5	0.333333
0	0.2	0.285714	0.428571	0.2	0.2
				0.125	0.125

Table S5. Data generated during this study (continued).

Control		CPT		mCherry	
Basal	CNO	Basal	CNO	Basal	CNO
97.76788	87.54255	97.13926	114.7868	97.1457	96.67023
109.8818	43.74592	92.32671	86.1277	113.9719	100.9417
98.57805	93.02759	95.64005	93.95667	104.0873	110.6925
94.56076	88.93508	101.2651	106.6305	112.2495	86.98993
98.26294	88.50461	105.4892	119.4072	93.8887	107.9558
108.3545	16.5133	102.7087	99.32203	105.5306	111.9455
97.9978	71.90003	99.20436	102.9024		
97.23482	75.64903				
112.5848	77.69519				
111.6864	69.90516				

Table S5. Data generated during this study (continued).

Control		Flupenthixol		IP3R2 ^{-/-}		CPT		GDP Beta 5		GFAP D1 WT		GFAP D1 ^{-/-}	
Basal	Amphetamine	Basal	Amphetamine	Basal	Amphetamine	Basal	Amphetamine	Basal	Amphetamine	Basal	Amphetamine	Basal	Amphetamine
0.268286	0.5365728	0.536573	0.643887	0.0625	0.0625	0.446429	0.568182	0.266667	0.233333	0.45	0.6	0.420673	0.420673
0.286172	0.7154304	0.429258	0.429258	0	0.083333	0.491071	0.669643	0.291667	0.333333	0.25	1.166667	0.778388	0.915751
0.429258	0.75120192	0.357715	0.286172	0	0.090909	0.382653	0.542092	0.136364	0.318182	0.35	0.65	0.581984	0.531377
0.551903	0.9811617	0.286172	0.381563	0	0	0.324675	0.649351	0.090909	0.090909	0.458333	0.666667	0.440705	0.721154
0.357715	1.00160256	0.4	0.2	0.083333	0.083333	0.565476	0.535714	0.264706	0.088235	0.375	0.875	0.420673	0.540865
0.686813	0.77266484			0.078947	0.026316	0.223214	0.78125			0.6	0.625	0.423077	0.480769
				0	0.025	0.487013	0.649351					0.5	0.625
				0	0	0.357143	0.982143					0.722222	0.388889
				0	0.0625	0.384615	0.423077					0.166667	0.416667
												0.1	0.75
												0.59375	0.625

Table S5. Data generated during this study (continued).

Control		Flupenthixol		IP3R2-/-		CPT		GDP Beta S		GFAP D1 WT		GFAP D1 -/-	
Basal	Amphetamine	Basal	Amphetamine	Basal	Amphetamine	Basal	Amphetamine	Basal	Amphetamine	Basal	Amphetamine	Basal	Amphetamine
91.0327	48.5152	84.8965	80.959	87.6861	83.7809	96.639	79.9867	98.62938	80.28075	78.97245	71.59714	98.1874	54.46558
97.2178	72.599	95.1718	90.548	86.7477	91.3217	98.6555	78.2654	94.67367	97.3015	127.8581	99.30721	117.8756	96.18133
109.8074	73.2314	111.7173	104.2648	119.7777	92.4428	84.3447	92.6572			92.21116	14.17229	99.0596	133.2104
95.234	36.6176	97.6513	99.4556	103.5341	106.4047	99.0358	98.06	100.2658	115.1305	93.3385	28.16996	110.2428	65.89503
107.1831	32.839	93.5308	104.0942	95.1931	91.3722	100.2292	117.2422	105.2615	115.5485	95.05407	88.86671	73.08353	152.4665
				94.4713	74.6118	93.4493	75.401	100.9429	88.3058	127.3423	154.7634		
						82.1446	73.6339	110.2376	110.9152	142.4925	42.94668		
										112.2577	67.27237		
										108.3097	75.58816		

Table S5. Data generated during this study (continued).

WT		IP3R2-/-		GFAP D1 WT		GFAP D1 -/-	
Saline	Amphetamine	Saline	Amphetamine	Saline	Amphetamine	Saline	Amphetamine
55.8505	448.649	54.1855	364.68	95.7295	220.675	59.252	215.678
47.2705	538.192	45.552	475.762	49.099	378.441	89.246	374.633
57.942	541.32	52.75	153.538	40.732	380.196	70.9715	306.976
38.5405	526.715	32.514	129.415	89.755	581.995	47.1595	375.394
50.809	547.253	54.761	278.792	52.456	641.769	60.524	144.167
35.883	199.354	68.045	65.79	92.398	552.761	89.188	262.073
73.7675	236.22	89.06	71.132				
27.369	301.989	48.747	162.727				
30.7645	523.525	24.8965	113.142				
36.8275	506.788	66.6705	81.444				
39.308	535.573	29.556	273.436				
11.0865	482.98	44.34	440.421				
36.2645	493.641	19.151	442.802				
33.8285	516.488	52.799	233.033				
65.248	552.489	34.713	181.567				
41.43	465.081	39.526	477.154				

Table S5. Data generated during this study (continued).

PPR

Basal	DA
0.827019	1.305886
0.727926	1.134316
1.077141	1.19785
0.898342	1.320826
1.288747	1.448357
1.221299	1.292144
1.084328	1.519335
1.044243	1.157295
1.045655	1.346037
1.319643	1.035434
0.884268	1.290911
1.406836	2.087199
1.172719	1.502968
1.135525	1.648872
1.425705	1.771223

Table S5. Data generated during this study (continued).

Control		Flupenthixol		Control		SCH 23390		Control		Sulpiride	
Basal	DA	Basal	DA	Basal	DA	Basal	DA	Basal	DA	Basal	DA
119.1514	79.02314	100.2812	82.8999	100.7593	89.21174	107.4718	85.62986	83.19984	58.97581	87.03761	76.62556
100.0475	74.88247	108.0238	91.85354	95.9491	36.24758	106.4735	79.70456	114.2778	47.32199	97.08973	83.82918
96.40207	77.20193	117.8146	126.2928	111.2329	99.88655	92.38937	104.7582	102.4862	102.535	91.07503	79.6681
94.65293	61.21143	91.53386	97.05616	92.12442	85.27266	99.67893	107.6867	93.57801	109.2147	71.03329	71.30417
73.3883	33.51489	120.0665	91.60165	94.73566	73.94991	78.25075	90.36721	90.66655	55.55619	92.26849	70.65437
89.71623	82.42344			105.0992	58.3073	101.6597	85.33279	120.4888	87.31202	100.4122	77.45865
				90.86116	79.82136	98.00596	98.5692	88.21714	74.87293	115.1088	75.35873
				94.896	73.5591			108.0658	64.04697	97.44521	66.70343
				92.83863	75.39522						

Table S5. Data generated during this study (continued).

PPR

Basal	Optostim.
1.430563	2.064296
0.988661	1.278554
1.206182	2.161098
1.190766	1.393161
0.80536	0.994798
0.956659	1.096569
1.128978	1.259884
0.861455	0.952731
1.227877	1.487389
1.130269	1.21656
0.506169	0.609392
1.108004	1.61091
0.844278	1.133829
1.461306	1.614615

Table S5. Data generated during this study (continued).

Control		Flupenthixol		Control		SCH 23390		Control		Sulpiride		Cre negative	
Basal	Optostim.	Basal	Optostim.	Basal	Optostim.	Basal	Optostim.	Basal	Optostim.	Basal	Optostim.	Basal	Optostim.
112.4507	72.02403	99.69447	107.9047	88.96651	79.52762	101.806	94.03843	111.3721	69.38784	87.46336	78.19816	100.295	86.53996
96.82199	82.80856	108.1819	97.62601	84.40978	69.4737	98.85531	102.9493	97.99998	53.59177	95.77654	97.8289	94.65033	93.17604
103.2959	83.69163	101.9897	105.8229	115.5056	65.20099	103.3508	77.42823	94.84919	75.07005	98.72135	83.2615	105.8993	122.3132
99.72943	79.35344	105.7498	91.00054	95.91514	70.61565	118.1401	102.7438	97.23144	69.38241	101.2688	71.08504	99.15153	104.088
				103.4814	71.23074	99.1807	114.7358	116.3066	67.53444	110.0888	59.52822	100	112.0014
						107.7766	119.0358	97.10237	93.01485	97.84574	65.81466	98.67446	92.77224

Table S5. Data generated during this study (continued).

Δ Amplitude

SKF	SKF + SCH
-26.4838	-5.76E-04
-23.7896	2.577551
-15.8114	4.452819
-16.7677	1.484178

Table S5. Data generated during this study (continued).

Δ Amplitude

GFAP-D1-WT	GFAP-D1-/-
3.942024087	-16.4852211
-0.032400109	4.02123118
-22.47912502	-1.79851263
3.682490459	-21.9797067
-1.533473726	1.47630868
-23.78956163	-24.7006982
-21.6015225	-3.97085063
-26.4837696	-32.0355033
-15.81135109	-16.7677438
-13.19597013	-2.49203595
4.105910028	3.20318033
-0.353764102	-16.7372145
-22.50166136	

Table S5. Data generated during this study (continued).

PPR

Basal	CON
1.209268	1.220438
1.519933	2.266671
0.850332	1.13874
1.569293	1.733554
0.938139	1.064037
0.487327	1.806149
1.083496	1.683109
1.123366	1.71125
1.334996	1.259686
1.493277	2.037717