Supplementary Information

Study of two G-protien coupled receptor variants of human trace amine-associated receptor 5

Xiaoqiang Wang[1, 2], Karolina Corin[1], Cyrus Rich[1], Shuguang Zhang[1]*

[1]Center for Biomedical Engineering NE47-379, Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, MA 02139-4307, USA

[2]Center for Bioengineering and Biotechnology, China University of Petroleum (East China), Qingdao, Shandong 266555, China

Supplementary Table S1 A list of the detergents screened for optimal solubilization of hTAAR5/hTAAR5-T4L expressed in HEK293 cells.

#	Detergent	Type[1]	CMC (%)[2]	Conc.[3]	Spot intensity[4]	
					hTAAR5	hTAAR5-T4L
1	ANAMEG® -7	N	0.65	2%	30618	689136
2	ANAPOE®-20	N	0.0072	2%	374057	994686
3	ANAPOE®-35	N	0.001	2%	355730	1.15E+06
4	ANAPOE®-58	N	0.00045	2%	778246	1.49E+06
5	ANAPOE®-80	N	0.0016	2%	251668	169450
6	ANAPOE®-C10E6	N	0.025	2%	772387	1.34E+06
7	ANAPOE®-C10E9	N	0.053	2%	748110	1.12E+06
8	ANAPOE®-C12E8	N	0.0048	2%	553667	1.04E+06
9	ANAPOE®-C12E9	N	0.003	2%	650572	960332
10	ANAPOE®-C12E10	N	0.2	2%	690201	1.12E+06
11	ANAPOE®-C13E8	N	0.0055	2%	775478	2.09E+06
12	ANAPOE®-X-100	N	0.015	2%	838678	2.65E+06
13	ANAPOE®-X-114	N	0.011	2%	608554	1.98E+06

14	ANAPOE®-X-305	N	-	2%	260794	1.80E+06
15	ANAPOE®-X-405	N	0.16	2%	189679	1.00E+06
16	Big CHAP	N	0.25	2%	340206	1.11E+06
17	Big CHAP, deoxy	N	0.12	2%	232689	208108
18	CYGLU®-3	N	0.86	2%	117273	376914
19	CYMAL®-4	N	0.37	2%	322631	1.13E+06
20	CYMAL®-5	N	0.12	2%	371659	1.28E+06
21	CYMAL®-6	N	0.028	2%	430907	1.13E+06
22	CYMAL®-7	N	0.0099	2%	467208	1.45E+06
23	2,6-Dimethyl-4-heptyl-β-D-maltopyranoside	N	1.2	2%	348198	855457
24	2-Propyl-1-pentyl maltopyranoside	N	1.9	2%	350728	957226
25	MEGA-8	N	2.5	2%	276242	1.25E+06
26	n-Octyl-β-D-glucopyranoside	N	0.53	2%	292547	1.01E+06
27	n-Nonyl-β-D-glucopyranoside	N	0.2	2%	243281	640156
28	n-Octyl-β-D-maltopyranoside	N	0.89	2%	287913	1.47E+06
29	n-Nonyl-β-D-maltopyranoside	N	0.28	2%	353671	1.46E+06
30	n-Decyl-α-D-maltopyranoside	N	-	2%	328647	1.27E+06
31	n-Decyl-β-D-maltopyranoside	N	0.087	2%	353090	1.10E+06
32	n-Undecyl-α-D-maltopyranoside	N	0.029	2%	288165	1.63E+06
33	n-Undecyl-β-D-maltopyranoside	N	0.029	2%	390267	1.41E+06
34	n-Dodecyl-α-D-maltopyranoside	N	0.0076	2%	385036	913367
35	n-Dodecyl-β-D-maltopyranoside	N	0.0087	2%	381175	1.69E+06
36	n-Tridecyl-β-D-maltopyranoside	N	0.0017	2%	527213	1.62E+06
37	n-Heptyl-β-D-thioglucopyranoside	N	0.85	2%	294126	547516
38	n-Octyl-β-D-thiomaltopyranoside	N	0.4	2%	493796	1.36E+06
39	n-Nonyl-β-D-thiomaltopyranoside	N	0.15	2%	474915	1.40E+06
40	n-Decyl-β-D-thiomaltopyranoside	N	0.045	2%	376746	2.34E+06
41	n-Undecyl-β-D-thiomaltopyranoside	N	0.011	2%	307283	1.95E+06
42	n-Dodecyl-β-D-thiomaltopyranoside	N	0.0026	2%	530309	2.56E+06
43	Hexaethylene glycol monooctyl ether (C8E6)	N	0.39	2%	362365	983603
44	Octaethylene glycol monododecyl ether (C12E8)	N	0.0048	2%	368401	1.40E+06
45	Pentaethylene glycol monodecyl ether (C10E5)	N	0.031	2%	406874	1.26E+06
46	Tetraethylene glycol monooctyl ether (C8E4)	N	0.25	2%	528097	1.23E+06
47	Sucrose monododecanoate	N	0.016	2%	384706	2.10E+06
48	Dimethyldecylphosphine oxide	N	0.1	2%	537270	1.44E+06
49	HEGA-10	N	0.26	2%	239260	3.49E+06
50	NP-40	N	0.05-0.3	2%	218167	1.93E+06
51	Digitonin	N	-	2%	521877	654752
52	Deoxycholic acid, sodium salt	A	0.24	2%	468044	4.29E+06
53	Sodium cholate	A	0.41	2%	737516	1.77E+06
54	FOS-MEA®-8	A	0.59	2%	293293	1.42E+06
55	FOS-MEA®-10	A	0.15	2%	295125	3.05E+06
56	Sodium dodecanoyl sarcosine	A	0.42	2%	1.9E+06	5.42E+06
57	Decyltrimethylammonium chloride	C	0.07	2%	283045	448222
58	Dodecyltrimethylammonium chloride	C	0.0012	2%	662877	454906
59	Hexadecyltrimethylammonium chloride	C	0.000102	2%	1.85E+06	2.51E+06
60	Tetradecyltrimethylammonium chloride	C	0.0009	2%	1.47E+06	717319
61	ANZERGENT® 3-10	Z	1.2	2%	424561	634566
62	ANZERGENT® 3-12	Z	0.094	2%	851165	2.96E+06
63	ANZERGENT® 3-14	Z	0.007	2%	2.01E+06	1.93E+06
64	CHAPS	Z	0.49	2%	497201	1.52E+06
65	CHAPSO	Z	0.5	2%	480125	1.06E+06
66	C-DODECAFOS™	Z	0.77	2%	438576	1.67E+06

67	CYCLOFOS™-4	Z	0.45	2%	291426	1.99E+06
68	CYCLOFOS™-5	Z	0.15	2%	512757	2.04E+06
69	CYCLOFOS™-6	Z	0.094	2%	1.41E+06	2.72E+06
70	CYCLOFOS™-7	Z	0.022	2%	2.13E+06	4.38E+06
71	FOS-CHOLINE®-9	Z	1.2	2%	652975	2.21E+06
72	FOS-CHOLINE®-10	Z	0.35	2%	508954	3.56E+06
73	FOS-CHOLINE®-11	Z	0.062	2%	1.15E+06	1.93E+06
74	FOS-CHOLINE®-12	Z	0.047	2%	2.07E+06	4.32E+06
75	FOS-CHOLINE®-13	Z	0.027	2%	2.34E+06	5.60E+06
76	FOS-CHOLINE®-14	Z	0.0046	2%	2.76E+06	5.65E+06
77	FOS-CHOLINE®-15	Z	0.0027	2%	2.92E+06	4.91E+06
78	FOS-CHOLINE®-16	Z	0.00053	2%	3.2E+06	5.16E+06
79	FOS-CHOLINE®-ISO-9	Z	0.99	2%	323143	311119
80	FOS-CHOLINE®-ISO-11	Z	0.9	2%	285656	771092
81	FOS-CHOLINE®-ISO-11-6U	Z	0.87	2%	283335	237371
82	FOS-CHOLINE®-UNSAT-11-10	Z	0.21	2%	1.21E+06	3.55E+06
83	FOSFEN™-9	Z	0.014	2%	1.38E+06	4.54E+06
84	NOPOL-FOS™	Z	1.4	2%	376439	282978
85	PMAL™-C8	Z	-	2%	831850	261830
86	PMAL™-C10	Z	-	2%	539048	929154
87	n-Decyl-N,N-dimethylglycine	Z	0.46	2%	428334	1.39E+06
88	n-Dodecyl-N,N-dimethylglycine	Z	0.041	2%	1.44E+06	2.99E+06
89	n-Dodecyl-β-iminodipropionic acid,monosodium salt	Z	-	2%	3.42E+06	5.60E+06
90	n-Tetradecyl-N,N-dimethylamine-N-oxide (TDAO)	Z	0.0075	2%	2.81E+06	3.28E+06
91	n-Dodecyl-N,N-dimethylamine-N-oxide (DDAO)	Z	0.0023	2%	1.98E+06	1.91E+06
92	Digitonin (8%) + Cholate (2%)	M			657521	2.43E+06
93	CHAPS (6%) + CHS (1.2%) + DDM (10%)	M			345564	1.07E+06
94	CHAPS (10%) + CHS (2%) + DDM (2%)	M			223362	827653
95	CHAPS (10%) + CHS (2%)	M			308560	993897
96	CHAPS (10%) + OG (1%)	M			307931	787697

1. Detergent type: N (non-ionic detergent), A (anionic detergent), C (cationic detergent), Z (zwitter-ionic detergent) and M (detergent mixture);

2. CMC (critical micelle concentration) in H_2O from www.anatrace.com.

3. Concentration of detergents used during the detergent screen.

4. The intensity of each dot quantified by spot densitometry after Dot blot analysis against rho1D4 tag.