

Table S1. Comprehensive Protein Expression Data for 826 GPCRs

Family	Gene_names	Protein_names	Target name	WT-aa-count	Nt_BRIL constructs				ICL3_BRIL constructs			
					surface(%)	surface density	total(%)	total density	surface(%)	surface density	total(%)	total density
Rho-NonO	HTR1A ADRB2RL	5-hydroxytryptamine receptor 1A	5HT1A	422	53.85	50.98	96.15	288.23	80.65	64.56	96.30	504.39
Rho-NonO	HTR1B HTR1DB	5-hydroxytryptamine receptor 1	5HT1B	390	64.65	64.60	94.45	256.41	67.25	29.44	80.75	253.35
Rho-NonO	HTR1D HTR1DA	5-hydroxytryptamine receptor 1D	5HT1D	377	54.05	41.95	93.75	242.30	72.55	38.74	79.90	273.22
Rho-NonO	HTR1E	5-hydroxytryptamine receptor 1E	5HT1E	365	64.20	49.92	96.95	319.57	74.95	51.43	95.15	408.59
Rho-NonO	HTR1F HTR1EL	5-hydroxytryptamine receptor 1F	5HT1F	366	43.90	67.69	84.45	93.13	46.15	63.77	94.30	489.48
Rho-NonO	HTR2A HTR2	5-hydroxytryptamine receptor 2A	5HT2A	471	74.85	65.35	96.75	493.59	68.55	36.80	92.90	433.54
Rho-NonO	HTR2B	5-hydroxytryptamine receptor 2	5HT2B	481	66.10	46.45	95.15	375.80	74.20	41.40	96.80	406.14
Rho-NonO	HTR2C HTR1C	5-hydroxytryptamine receptor 2C	5HT2C	458	62.70	26.22	96.85	171.23	96.65	152.69	94.15	703.46
Rho-NonO	HTR4	5-hydroxytryptamine receptor 4	5HT4R	388	93.50	78.29	89.70	65.34	94.10	59.69	96.70	455.89
Rho-NonO	HTR5A	5-hydroxytryptamine receptor 5A	5HT5A	357	41.70	73.53	40.90	58.56	79.30	50.04	94.95	356.96
Rho-NonO	HTR6	5-hydroxytryptamine receptor 6	5HT6R	440	49.60	41.86	43.10	47.81	83.60	42.14	94.25	384.66
Rho-NonO	HTR7	5-hydroxytryptamine receptor 7	5HT7R	479	37.00	41.60	21.35	37.61	84.45	45.66	96.45	474.48
Rho-NonO	ADORA1	Adenosine receptor A1	AA1R	326	30.00	140.77	91.40	446.73	31.80	43.78	86.75	265.93
Rho-NonO	ADORA2A ADOA2A	Adenosine receptor A2a	AA2AR	412	96.20	184.82	81.20	211.41	91.45	142.46	77.90	286.44
Rho-NonO	ADORA2B	Adenosine receptor A2b	AA2BR	332	31.70	115.30	41.15	483.40	23.80	30.81	79.15	110.84
Rho-NonO	ADORA3 UNQ19	Adenosine receptor A3	AA3R	318	37.95	109.19	92.15	411.35	61.45	55.75	82.75	303.75
Rho-NonO	CHRM1	Muscarinic acetylcholine receptor 1	ACM1	460	15.40	89.98	23.80	460.58	83.05	43.12	23.50	227.02
Rho-NonO	CHRM2	Muscarinic acetylcholine receptor 2	ACM2	466	62.05	51.88	90.90	539.14	72.95	38.05	75.60	268.31
Rho-NonO	CHRM3	Muscarinic acetylcholine receptor 3	ACM3	590	50.65	56.72	76.35	611.62	46.50	45.90	78.45	303.67
Rho-NonO	CHRM4	Muscarinic acetylcholine receptor 4	ACM4	479	34.05	47.62	87.50	534.25	34.70	95.04	79.80	352.52
Rho-NonO	CHRM5	Muscarinic acetylcholine receptor 5	ACM5	532	39.45	55.07	73.95	495.26	88.05	74.31	79.00	402.79
Rho-NonO	MC2R ACTHR	Adrenocorticotrophic hormone receptor 2	ACTHR	297	32.90	163.80	90.00	450.20	37.30	84.49	81.35	467.05
Rho-NonO	ADRA1A ADRA1	Alpha-1A adrenergic receptor (A1)	ADA1A	466	71.60	52.31	97.25	404.13	83.75	43.50	94.70	462.76
Rho-NonO	ADRA1B	Alpha-1B adrenergic receptor (A1)	ADA1B	520	21.95	56.96	12.85	59.27	57.85	40.12	94.25	481.30
Rho-NonO	ADRA1D ADRA1	Alpha-1D adrenergic receptor (A1)	ADA1D	572	69.45	33.20	97.05	191.87	79.80	29.33	96.95	378.08
Rho-NonO	ADRA2A ADRA2	Alpha-2A adrenergic receptor (A2)	ADA2A	450	35.45	37.21	95.50	455.67	66.85	68.74	90.25	474.20
Rho-NonO	ADRA2B ADRA2	Alpha-2B adrenergic receptor (A2)	ADA2B	450	89.65	151.49	84.40	440.48	37.15	48.63	90.05	518.12
Rho-NonO	ADRA2C ADRA2	Alpha-2C adrenergic receptor (A2)	ADA2C	462	24.55	54.51	91.45	488.87	45.85	54.87	92.60	536.48
Rho-NonO	ADRB1 ADRB1R	Beta-1 adrenergic receptor (Beta-1)	ADRB1	477	79.35	55.61	97.95	465.69	93.30	70.93	94.90	299.99
Rho-NonO	ADRB2 ADRB2R	Beta-2 adrenergic receptor (Beta-2)	ADRB2	413	42.50	199.68	97.45	480.55	71.10	47.83	95.35	380.84
Rho-NonO	ADRB3 ADRB3R	Beta-3 adrenergic receptor (Beta-3)	ADRB3	408	40.20	54.57	56.60	58.21	80.60	50.44	94.50	515.67
Rho-NonO	AGTR1 AGTR1A	Type-1 angiotensin II receptor (Type-1)	AGTR1	359	75.50	67.27	95.20	103.98	84.45	51.22	98.50	331.40
Rho-NonO	AGTR2	Type-2 angiotensin II receptor (Type-2)	AGTR2	363	73.85	65.36	96.00	209.27	53.85	29.51	68.65	51.38
Rho-NonO	APLNR AGTRL1	Apelin receptor (Angiotensin receptor-like receptor 1)	APJ	380	84.55	124.83	93.50	249.72	88.30	88.01	84.30	421.49
Rho-NonO	BDKRB1 BRADYKININ	B1 bradykinin receptor (B1R) (BK1)	BKRB1	353	59.25	76.34	97.50	478.45	58.30	59.26	94.20	356.84
Rho-NonO	BDKRB2 BKR2	B2 bradykinin receptor (B2R) (BK2)	BKRB2	391	33.55	75.40	41.05	67.31	43.00	52.25	88.70	195.53
Rho-NonO	BRS3	Bombesin receptor subtype-3 (BRS3)	BRS3	399	48.35	21.48	6.70	37.36	95.90	64.81	95.65	664.52
Rho-NonO	C3AR1 AZ3B C3AR	C3a anaphylatoxin chemotactic receptor 1	C3AR	482	51.65	68.09	58.45	68.19	16.05	45.66	88.40	176.82
Rho-NonO	C5AR1 C5AR C5AR	C5a anaphylatoxin chemotactic receptor 1	C5AR	350	49.45	204.92	86.15	173.86	82.05	76.25	94.15	423.94

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Rho-NonO	GPR77 C5L2	C5a anaphylatoxin chemotactic r	C5ARL	337	50.80	41.87	59.70	48.54	43.05	106.14	79.50	131.22
Rho-NonO	CCBP2 CCR10 C	Chemokine-binding protein 2 (C-	CCBP2	384	52.10	27.03	79.60	59.44	37.00	32.97	90.55	199.36
Rho-NonO	CCKAR CCKRA	Cholecystokinin receptor type A	CCKAR	428	47.20	30.61	54.40	39.31	64.65	44.63	93.25	669.55
Rho-NonO	CCR1 CMKBR1 C	C-C chemokine receptor type 1 (	CCR1	355	49.95	152.79	96.15	948.77	36.30	62.03	91.75	661.19
Rho-NonO	CCR10 GPR2	C-C chemokine receptor type 10	CCR10	362	39.75	94.89	91.75	497.43	66.60	143.68	92.35	1,457.21
Rho-NonO	CCR2 CMKBR2	C-C chemokine receptor type 2 (	CCR2	374	57.50	98.02	92.90	183.37	29.30	55.70	92.40	523.45
Rho-NonO	CCR3 CMKBR3	C-C chemokine receptor type 3 (	CCR3	355	36.25	99.01	91.65	423.88	31.85	56.55	91.95	378.11
Rho-NonO	CCR4 CMKBR4	C-C chemokine receptor type 4 (	CCR4	360	38.55	73.60	78.40	178.57	25.90	57.37	83.45	269.39
Rho-NonO	CCR5 CMKBR5	C-C chemokine receptor type 5 (	CCR5	352	53.80	39.57	87.10	206.88	54.80	42.41	90.60	719.78
Rho-NonO	CCR6 CKRL3 CM	C-C chemokine receptor type 6 (	CCR6	374	50.65	58.37	96.95	266.20	35.25	66.08	90.10	338.70
Rho-NonO	CCR7 CMKBR7 E	C-C chemokine receptor type 7 (	CCR7	378	59.45	131.40	95.30	358.20	80.15	72.53	85.70	577.91
Rho-NonO	CCR8 CKRL1 CM	C-C chemokine receptor type 8 (	CCR8	355	62.80	68.07	88.15	163.24	68.65	32.26	63.50	166.59
Rho-NonO	CCR9 GPR28	C-C chemokine receptor type 9 (	CCR9	369	29.70	165.30	86.95	383.35	60.80	45.84	73.30	419.05
Rho-NonO	CCRL1 CCBP2 CC	C-C chemokine receptor type 11	CCRL1	350	65.50	30.10	98.75	428.67	75.20	20.36	95.05	280.37
Rho-NonO	CCRL2 CCR11 CC	C-C chemokine receptor-like 2 (C	CCRL2	344	64.15	66.81	98.20	678.50	67.95	39.97	95.75	420.05
Rho-NonO	CYSLTR1 CYSLT1	Cysteiny leukotriene receptor 1	CLTR1	337	58.50	80.71	97.50	531.50	38.10	54.89	90.30	446.04
Rho-NonO	CYSLTR2 CYSLT2	Cysteiny leukotriene receptor 2	CLTR2	346	42.30	35.94	65.25	45.82	76.65	28.05	92.10	224.49
Rho-NonO	CMKLR1 CHEMR	Chemokine-like receptor 1 (G-pro	CML1	373	82.80	50.80	93.25	88.44	37.35	32.94	45.35	34.94
Rho-NonO	CNR1 CNR	Cannabinoid receptor 1 (CB-R) (C	CNR1	472	20.00	73.39	53.05	242.89	63.15	46.63	87.60	240.68
Rho-NonO	CNR2	Cannabinoid receptor 2 (CB-2) (C	CNR2	360	47.15	57.47	88.45	230.52	45.85	39.53	78.05	237.97
Rho-NonO	CX3CR1 CMKBR1	CX3C chemokine receptor 1 (C-X-	CX3C1	355	45.70	38.40	76.30	75.44	44.25	43.72	94.50	258.51
Rho-NonO	CXCR1 CMKAR1	C-X-C chemokine receptor type 1	CXCR1	350	53.75	32.20	74.20	51.06	82.10	36.07	94.85	311.31
Rho-NonO	CXCR2 IL8RB	C-X-C chemokine receptor type 2	CXCR2	360	63.10	50.45	96.65	575.27	82.50	39.81	94.70	367.79
Rho-NonO	CXCR3 GPR9	C-X-C chemokine receptor type 3	CXCR3	368	39.85	58.11	89.45	101.61	75.60	50.20	95.65	426.26
Rho-NonO	CXCR4	C-X-C chemokine receptor type 4	CXCR4	352	50.55	52.06	79.20	86.18	44.35	151.25	95.75	639.41
Rho-NonO	CXCR5 BLR1 MD	C-X-C chemokine receptor type 5	CXCR5	372	43.00	30.28	67.80	50.86	48.30	82.98	96.30	623.18
Rho-NonO	CXCR6 BONZO S	C-X-C chemokine receptor type 6	CXCR6	342	50.75	26.02	61.00	44.82	52.05	144.11	88.35	562.63
Rho-NonO	CXCR7 CMKOR1	C-X-C chemokine receptor type 7	CXCR7	362	45.80	27.72	61.15	52.46	38.50	38.99	90.65	279.88
Rho-NonO	DRD1	D(1A) dopamine receptor (Dopa	DRD1	446	41.70	75.19	71.45	265.64	37.95	44.02	83.55	376.90
Rho-NonO	DRD2	D(2) dopamine receptor (Dopam	DRD2	443	31.60	40.77	68.50	203.86	75.05	66.53	69.60	345.61
Rho-NonO	DRD3	D(3) dopamine receptor (Dopam	DRD3	400	66.70	49.86	83.65	311.63	63.50	48.89	72.45	254.33
Rho-NonO	DRD4	D(4) dopamine receptor (D(2C) d	DRD4	467	76.10	86.21	80.95	378.23	79.60	187.29	81.65	405.73
Rho-NonO	DRD5 DRD1B DR	D(1B) dopamine receptor (D(5) d	DRD5	477	15.50	175.16	52.90	216.06	19.95	74.24	79.70	367.41
Rho-NonO	DARC FY GPD	Duffy antigen/chemokine recept	DUFFY	336	68.50	70.52	96.90	338.30	92.25	259.14	86.55	1,051.32
Rho-NonO	EDNRA ETA ETR	Endothelin-1 receptor (Endotheli	EDNRA	427	82.50	143.31	97.90	487.91	56.35	63.07	73.60	88.60
Rho-NonO	EDNRB ETRB	Endothelin B receptor (ET-B) (ET-	EDNRB	442	71.75	30.67	78.30	54.86	96.00	200.37	93.65	602.24
Rho-NonO	GPR37L1 ETBRL	Endothelin B receptor-like protei	ETBR2	481	92.90	68.07	59.70	53.97	76.30	32.98	96.10	104.00
Rho-NonO	FFAR1 GPR40	Free fatty acid receptor 1 (G-pro	FFAR1	300	68.65	175.22	97.55	1,034.22	27.20	202.63	40.55	98.88
Rho-NonO	FFAR2 GPR43	Free fatty acid receptor 2 (G-pro	FFAR2	330	52.10	55.18	68.00	75.53	26.00	27.23	20.80	25.58
Rho-NonO	FFAR3 GPR41	Free fatty acid receptor 3 (G-pro	FFAR3	346	71.70	215.18	96.35	246.62	20.80	47.08	34.85	34.01

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Rho-NonO	FFAR4 GPR120	Free fatty acid receptor 4 (G-protein coupled receptor 120)	FFAR4	377	52.90	120.67	94.00	237.25	25.40	36.72	36.80	34.90
Rho-NonO	FPR1	fMet-Leu-Phe receptor (fMLP receptor)	FPR1	350	65.40	86.28	92.35	172.46	72.65	46.84	97.95	263.59
Rho-NonO	FPR2 FPRH1 FPRN	N-formyl peptide receptor 2 (FMRFPR2)	FPR2	351	65.95	76.60	94.40	111.69	47.60	37.96	75.70	60.65
Rho-NonO	FPR3 FPRH1 FPRN	N-formyl peptide receptor 3 (FMRFPR3)	FPR3	353	40.25	75.14	74.80	89.82	63.25	44.58	91.90	387.28
Rho-NonO	FSHR LGR1	Follicle-stimulating hormone receptor	FSHR	695	33.85	63.67	91.65	287.42	13.60	104.37	21.90	50.08
Rho-NonO	GALR1 GALNR1	Galanin receptor type 1 (GAL1-R)	GALR1	349	53.25	29.72	71.60	52.67	70.40	42.27	92.85	460.29
Rho-NonO	GALR2 GALNR2	Galanin receptor type 2 (GAL2-R)	GALR2	387	57.45	23.61	73.55	59.39	80.80	30.56	97.20	233.94
Rho-NonO	GALR3 GALNR3	Galanin receptor type 3 (GAL3-R)	GALR3	368	49.90	34.45	56.40	42.90	78.50	38.57	95.95	245.76
Rho-NonO	CCKBR CCKRB	Gastrin/cholecystokinin type B receptor	GASR	447	70.65	72.48	94.45	114.33	65.45	53.77	80.10	85.06
Rho-NonO	GHSR	Growth hormone secretagogue receptor	GHSR	366	43.90	113.14	96.90	616.74	68.45	33.92	92.75	189.21
Rho-NonO	GNRHR GRHR	Gonadotropin-releasing hormone receptor	GNRHR	328	32.65	54.20	35.90	51.82	53.65	66.68	86.05	312.53
Rho-NonO	GNRHR2	Putative gonadotropin-releasing hormone receptor	GNRR2	292	1.85	26.50	20.60	29.47	50.10	97.92	93.25	1,039.43
Rho-NonO	GPR101	Probable G-protein coupled receptor	GP101	508	83.05	84.24	87.20	88.21	37.75	61.95	61.75	55.42
Rho-NonO	GPR119	Glucose-dependent insulinotropic polypeptide receptor	GP119	335	37.20	65.82	69.35	538.83	48.50	26.55	54.90	112.80
Rho-NonO	GPR132 G2A	Probable G-protein coupled receptor	GP132	380	17.95	84.19	46.35	93.07	19.85	47.91	92.95	130.14
Rho-NonO	GPR135	Probable G-protein coupled receptor	GP135	494	65.80	77.97	94.70	284.17	83.30	284.71	93.35	1,084.53
Rho-NonO	GPR139 GPRG1	Probable G-protein coupled receptor	GP139	353	31.20	48.06	44.05	48.11	18.35	23.87	64.05	89.41
Rho-NonO	GPR141 PGR13	Probable G-protein coupled receptor	GP141	305	52.70	47.59	83.00	79.58	56.75	63.20	95.75	633.83
Rho-NonO	GPR142 PGR2	Probable G-protein coupled receptor	GP142	462	45.15	47.33	97.10	198.29	63.20	73.94	71.25	56.21
Rho-NonO	GPR143 OA1	G-protein coupled receptor 143	GP143	404	48.75	135.76	85.15	166.42	50.20	272.68	93.65	578.86
Rho-NonO	GPR146 PGR8	Probable G-protein coupled receptor	GP146	333	46.25	201.66	52.65	130.15	38.15	67.63	89.60	313.37
Rho-NonO	GPR148 BTR PG1	Probable G-protein coupled receptor	GP148	347	45.60	89.45	49.00	84.96	43.55	58.51	95.60	394.09
Rho-NonO	GPR149 PGR10	Probable G-protein coupled receptor	GP149	731	37.95	124.36	94.65	384.70	72.80	65.34	95.20	843.96
Rho-NonO	GPR150	Probable G-protein coupled receptor	GP150	434	44.35	90.98	96.10	380.82	59.15	68.61	93.45	279.06
Rho-NonO	GPR151 PGR7	Probable G-protein coupled receptor	GP151	419	58.10	44.65	89.85	113.53	49.50	46.66	81.20	97.60
Rho-NonO	GPR152 PGR5	Probable G-protein coupled receptor	GP152	470	51.00	191.76	61.60	137.07	52.25	41.82	85.55	103.82
Rho-NonO	GPR153 PGR1	Probable G-protein coupled receptor	GP153	609	56.80	84.62	88.30	212.56	85.80	38.57	86.65	231.40
Rho-NonO	GPR160 GPCR15	Probable G-protein coupled receptor	GP160	338	41.60	156.26	46.20	83.99	61.45	47.64	93.05	510.41
Rho-NonO	GPR161	G-protein coupled receptor 161	GP161	529	79.40	77.67	96.65	312.19	55.10	57.38	94.85	304.97
Rho-NonO	GPR162 GRCA	Probable G-protein coupled receptor	GP162	588	46.80	48.14	86.95	164.01	81.20	37.48	91.20	749.73
Rho-NonO	GPR171 H963	Probable G-protein coupled receptor	GP171	319	44.35	115.96	67.50	123.89	45.45	46.29	95.25	536.53
Rho-NonO	GPR173 SREB3	Probable G-protein coupled receptor	GP173	373	55.45	64.88	44.90	39.00	81.95	38.60	93.75	283.42
Rho-NonO	GPR174 FKSG79	Probable G-protein coupled receptor	GP174	333	42.80	110.95	79.25	121.37	53.40	55.34	93.95	241.15
Rho-NonO	GPR176	Probable G-protein coupled receptor	GP176	515	28.25	85.06	82.20	536.56	33.79	38.04	10.07	72.26
Rho-NonO	GPR182 ADMR	G-protein coupled receptor 182	GP182	404	57.80	132.08	98.15	611.55	42.15	47.08	87.55	183.79
Rho-NonO	GPR183 EB12	G-protein coupled receptor 183	GP183	361	46.80	32.72	52.95	35.12	42.40	48.18	93.55	351.97
Rho-NonO	GPBAR1 TGR5	G-protein coupled bile acid receptor	GPBAR	330	57.75	84.57	91.30	290.50	88.15	74.76	83.75	321.23
Rho-NonO		Putative G-protein coupled receptor	GPC39	272	81.55	84.91	97.75	536.43	53.55	58.69	77.10	85.46
Rho-NonO	GPER CEPR CMK	G-protein coupled estrogen receptor	GPER	375	41.25	36.62	56.50	47.87	46.70	126.32	97.10	601.99
Rho-NonO	GPR1	G-protein coupled receptor 1	GPR1	355	21.60	93.71	63.25	240.47	52.75	41.51	73.05	73.39

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Rho-NonO	GPR12	G-protein coupled receptor 12	GPR12	334	45.40	26.87	56.95	35.00	22.45	181.06	61.55	432.79
Rho-NonO	GPR15	G-protein coupled receptor 15 (E	GPR15	360	70.90	70.26	86.35	80.80	70.85	59.38	95.10	434.11
Rho-NonO	GPR17	Uracil nucleotide/cysteiny l leuko	GPR17	367	50.95	41.65	82.90	71.86	60.50	45.84	68.95	53.87
Rho-NonO	GPR18 GPCRW	N-arachidonyl glycine receptor (N	GPR18	331	67.85	67.07	96.70	495.52	67.05	32.28	95.65	445.66
Rho-NonO	GPR19	Probable G-protein coupled receptor	GPR19	415	70.65	78.25	93.60	97.69	46.10	49.72	95.80	377.15
Rho-NonO	GPR20	G-protein coupled receptor 20	GPR20	358	46.95	43.48	71.45	54.59	49.70	54.43	96.00	550.54
Rho-NonO	GPR21	Probable G-protein coupled rece	GPR21	349	63.40	89.69	81.80	441.82	34.25	23.91	57.40	48.31
Rho-NonO	GPR22	Probable G-protein coupled rece	GPR22	433	61.20	30.06	57.45	35.13	75.15	31.83	87.30	241.44
Rho-NonO	GPR25	Probable G-protein coupled rece	GPR25	361	31.85	81.30	56.70	94.02	53.85	42.73	93.55	489.07
Rho-NonO	GPR26	G-protein coupled receptor 26	GPR26	337	83.65	85.55	97.70	414.86	46.05	50.44	51.05	63.55
Rho-NonO	GPR27 SREB1	Probable G-protein coupled rece	GPR27	375	66.05	39.78	95.15	244.86	71.15	33.82	96.45	167.40
Rho-NonO	GPR3 ACCA	G-protein coupled receptor 3 (AC	GPR3	330	78.30	122.75	97.90	700.87	8.05	71.91	3.05	33.61
Rho-NonO	GPR31	12-(S)-hydroxy-5,8,10,14-eicosat	GPR31	319	68.90	57.98	92.45	72.12	52.45	111.26	98.45	439.11
Rho-NonO	GPR32	Probable G-protein coupled rece	GPR32	356	89.55	59.69	94.85	117.80	30.75	38.28	55.35	56.59
Rho-NonO	GPR33	Probable G-protein coupled rece	GPR33	333	76.90	38.22	97.85	274.40	69.40	129.90	83.15	176.40
Rho-NonO	GPR34	Probable G-protein coupled rece	GPR34	381	39.35	83.31	54.80	96.08	68.65	33.10	94.55	560.54
Rho-NonO	GPR35	G-protein coupled receptor 35 (K	GPR35	309	55.50	41.41	78.15	400.54	51.60	52.43	93.85	501.27
Rho-NonO	GPR37	Probable G-protein coupled rece	GPR37	613	66.45	112.63	98.10	909.40	31.75	19.87	75.95	152.88
Rho-NonO	GPR39	G-protein coupled receptor 39	GPR39	453	68.15	93.87	73.85	283.96	57.65	45.66	92.80	513.02
Rho-NonO	GPR4 GPR19	G-protein coupled receptor 4 (G-	GPR4	362	47.85	184.14	96.85	642.40	29.70	43.97	91.85	249.51
Rho-NonO	GPR42 GPR42P	G-protein coupled receptor 42	GPR42	346	33.75	108.75	61.10	137.01	30.85	46.76	88.90	311.73
Rho-NonO	GPR45	Probable G-protein coupled rece	GPR45	372	23.80	60.69	60.70	85.77	30.45	32.76	90.45	160.66
Rho-NonO	GPR52	Probable G-protein coupled rece	GPR52	361	78.65	95.46	98.00	526.15	46.95	50.75	97.95	215.58
Rho-NonO	GPR55	G-protein coupled receptor 55	GPR55	319	43.55	116.97	97.70	831.15	38.65	33.57	94.25	424.46
Rho-NonO	GPR6	G-protein coupled receptor 6 (Sp	GPR6	362	17.49	97.84	59.85	125.31	43.80	179.85	82.05	813.91
Rho-NonO	GPR61 BALGR	Probable G-protein coupled rece	GPR61	451	15.85	47.26	25.25	45.17	50.60	30.53	92.70	256.64
Rho-NonO	GPR62	Probable G-protein coupled rece	GPR62	368	61.55	40.14	96.80	403.00	49.10	126.65	94.95	974.51
Rho-NonO	GPR63 PSP24B	Probable G-protein coupled rece	GPR63	419	67.50	58.04	93.15	460.95	59.15	33.00	92.80	216.27
Rho-NonO	GPR75	Probable G-protein coupled rece	GPR75	540	19.20	85.92	21.35	53.69	60.65	38.11	95.05	395.18
Rho-NonO	GPR78 UNQ592	G-protein coupled receptor 78	GPR78	363	53.00	67.20	58.55	44.94	53.95	14.54	38.30	26.94
Rho-NonO	GPR82	Probable G-protein coupled rece	GPR82	336	82.75	91.45	96.60	382.24	26.90	51.58	52.20	83.33
Rho-NonO	GPR83 GPR72 K	Probable G-protein coupled rece	GPR83	423	58.90	31.72	77.10	38.94	83.05	36.32	95.25	221.01
Rho-NonO	GPR84 EX33	G-protein coupled receptor 84 (H	GPR84	396	53.00	63.67	61.45	52.67	51.55	44.87	51.85	39.75
Rho-NonO	GPR85 SREB2	Probable G-protein coupled rece	GPR85	370	90.20	65.28	97.65	529.95	75.70	46.62	84.55	289.26
Rho-NonO	GPR87 GPR95 F	G-protein coupled receptor 87 (C	GPR87	358	62.00	20.31	62.55	38.09	86.20	29.20	94.70	549.53
Rho-NonO	GPR88 STRG	Probable G-protein coupled rece	GPR88	384	66.25	53.39	96.10	700.64	75.40	145.85	91.50	583.08
Rho-NonO	GRPR	Gastrin-releasing peptide recept	GRPR	384	45.85	87.18	51.30	78.03	75.40	97.10	95.00	440.07
Rho-NonO	HCAR1 GPR104	Hydroxycarboxylic acid receptor	HCAR1	346	43.75	97.67	83.70	83.70	24.20	61.55	89.35	370.94
Rho-NonO	HCAR2 GPR109	Hydroxycarboxylic acid receptor	HCAR2	363	57.50	72.64	78.25	78.25	57.25	59.26	94.50	371.98
Rho-NonO	HCAR3 GPR109E	Hydroxycarboxylic acid receptor	HCAR3	387	41.15	57.43	67.80	67.80	63.65	84.79	95.85	587.19

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Rho-NonO	HRH1	Histamine H1 receptor (H1R) (HRH1)	HRH1	487	43.00	20.11	73.60	56.82	82.00	33.82	95.05	399.93
Rho-NonO	HRH2	Histamine H2 receptor (H2R) (HRH2)	HRH2	359	49.60	32.51	72.75	60.00	39.40	67.02	94.90	597.47
Rho-NonO	HRH3 GPCR97	Histamine H3 receptor (H3R) (HRH3)	HRH3	445	61.10	61.01	95.75	381.19	54.55	61.73	90.00	292.55
Rho-NonO	HRH4 GPCR105	Histamine H4 receptor (H4R) (HRH4)	HRH4	390	42.35	84.17	80.05	80.05	84.30	48.45	90.75	257.30
Rho-NonO	KISS1R AXOR12	KiSS-1 receptor (KiSS-1R) (G-prot)	KISSR	398	42.75	46.33	84.75	64.22	56.15	57.70	94.45	458.35
Rho-NonO	LGR4 GPR48	Leucine-rich repeat-containing G	LGR4	951	93.70	234.89	85.20	434.50	37.05	55.40	83.25	733.21
Rho-NonO	LGR5 GPR49 GPR49	Leucine-rich repeat-containing G	LGR5	907	50.95	115.34	91.10	251.50	33.05	66.82	73.95	487.35
Rho-NonO	LGR6 UNQ6427	Leucine-rich repeat-containing G	LGR6	967	79.90	142.22	58.20	463.09	31.65	31.97	73.10	337.13
Rho-NonO	LPAR1 EDG2 LPAR1	Lysophosphatidic acid receptor 1 (LPAR1)	LPAR1	364	9.40	18.51	15.02	18.82	87.05	57.72	84.10	284.37
Rho-NonO	LPAR2 EDG4 LPAR2	Lysophosphatidic acid receptor 2 (LPAR2)	LPAR2	351	40.75	133.75	93.35	521.12	37.50	44.62	98.20	1,194.63
Rho-NonO	LPAR3 EDG7 LPAR3	Lysophosphatidic acid receptor 3 (LPAR3)	LPAR3	353	53.85	30.05	87.50	271.47	63.00	37.70	93.15	396.08
Rho-NonO	LPAR4 GPR23 LPAR4	Lysophosphatidic acid receptor 4 (LPAR4)	LPAR4	370	36.05	67.86	69.85	87.02	40.55	60.18	95.25	778.37
Rho-NonO	LPAR5 GPR92 LPAR5	Lysophosphatidic acid receptor 5 (LPAR5)	LPAR5	372	46.20	51.83	76.70	81.46	53.10	72.23	95.70	461.89
Rho-NonO	LPAR6 P2RY5 LPAR6	Lysophosphatidic acid receptor 6 (LPAR6)	LPAR6	344	35.05	45.03	68.65	73.90	32.40	26.99	92.70	295.76
Rho-NonO	LHCGR LCGR LHCGR	Lutropin-choriogonadotropic hormone receptor (LHCGR)	LSHR	699	12.30	60.71	20.70	55.89	44.95	61.93	82.70	88.82
Rho-NonO	LTB4R BLT BLT1	Leukotriene B4 receptor 1 (LTB4R1)	LT4R1	352	68.00	38.78	84.90	47.52	63.95	26.82	80.10	61.01
Rho-NonO	LTB4R2 BLT2R BLT2	Leukotriene B4 receptor 2 (LTB4R2)	LT4R2	389	77.35	123.30	97.00	555.21	62.40	79.06	76.10	106.05
Rho-NonO	MAS1 MAS	Proto-oncogene Mas	MAS	325	46.65	103.46	92.65	394.28	68.70	37.96	94.90	277.41
Rho-NonO	MAS1L MRG	Mas-related G-protein coupled receptor (MRG)	MAS1L	378	37.20	57.35	41.00	45.77	57.15	62.82	93.30	327.09
Rho-NonO	MC3R	Melanocortin receptor 3 (MC3-R)	MC3R	323	18.00	30.54	74.15	267.94	9.55	44.62	29.00	51.60
Rho-NonO	MC4R	Melanocortin receptor 4 (MC4-R)	MC4R	332	55.60	41.92	60.30	116.13	18.00	30.32	80.45	233.86
Rho-NonO	MC5R	Melanocortin receptor 5 (MC5-R)	MC5R	325	71.25	55.39	88.40	144.24	36.70	56.80	88.00	419.03
Rho-NonO	MCHR1 GPR24 MCHR1	Melanin-concentrating hormone receptor (MCHR1)	MCHR1	422	50.95	88.05	76.90	112.78	62.00	36.18	96.30	347.40
Rho-NonO	MCHR2 GPR145 MCHR2	Melanin-concentrating hormone receptor (MCHR2)	MCHR2	340	36.80	84.87	73.55	97.67	63.70	51.71	93.45	437.31
Rho-NonO	MRGPRD MRGD	Mas-related G-protein coupled receptor (MRGPRD)	MRGRD	321	83.10	55.31	97.85	448.57	75.25	41.20	93.85	300.54
Rho-NonO	MRGPRE GPR16	Mas-related G-protein coupled receptor (MRGPRE)	MRGRE	311	84.10	87.87	71.20	67.19	88.55	107.69	82.05	304.58
Rho-NonO	MRGPRF GPR14	Mas-related G-protein coupled receptor (MRGPRF)	MRGRF	343	82.55	60.82	98.40	303.59	62.85	67.39	92.40	269.03
Rho-NonO	MRGPRG GPR16	Mas-related G-protein coupled receptor (MRGPRG)	MRGRG	289	52.35	43.13	84.60	106.10	49.50	15.63	84.70	32.31
Rho-NonO	MRGPRX1 MRGX1	Mas-related G-protein coupled receptor (MRGPRX1)	MRGX1	322	46.15	49.48	90.85	145.52	77.10	42.11	92.40	305.58
Rho-NonO	MRGPRX2 MRGX2	Mas-related G-protein coupled receptor (MRGPRX2)	MRGX2	330	52.60	53.13	94.40	379.54	77.40	30.42	91.50	232.06
Rho-NonO	MRGPRX3 MRGX3	Mas-related G-protein coupled receptor (MRGPRX3)	MRGX3	322	72.75	45.23	97.05	269.31	77.90	36.96	94.45	517.21
Rho-NonO	MRGPRX4 MRGX4	Mas-related G-protein coupled receptor (MRGPRX4)	MRGX4	322	66.25	123.95	72.35	67.34	44.35	91.82	75.30	81.96
Rho-NonO	MC1R MSHR	Melanocyte-stimulating hormone receptor (MSHR)	MSHR	317	41.65	115.44	89.80	312.94	51.75	58.34	70.70	211.88
Rho-NonO	MLNR GPR38 MLNR	Motilin receptor (G-protein coupled receptor) (MLNR)	MTLR	412	50.35	44.44	81.10	62.39	73.00	35.48	89.95	237.06
Rho-NonO	MTNR1A	Melatonin receptor type 1A (Melatonin receptor) (MTNR1A)	MTR1A	350	36.50	40.95	80.05	64.61	69.40	42.12	96.65	442.21
Rho-NonO	MTNR1B	Melatonin receptor type 1B (Melatonin receptor) (MTNR1B)	MTR1B	362	34.40	68.01	75.50	88.47	71.50	45.52	95.15	435.66
Rho-NonO	GPR50	Melatonin-related receptor (G-protein coupled receptor) (GPR50)	MTR1L	617	47.50	48.28	92.35	86.79	75.35	25.72	82.20	227.90
Rho-NonO	TACR1 NK1R TACR1	Substance-P receptor (SPR) (NK1R)	NK1R	407	76.15	53.93	94.85	111.81	53.00	25.70	74.95	56.13
Rho-NonO	TACR2 NK2R TACR2	Substance-K receptor (SKR) (NK2R)	NK2R	398	71.35	81.47	94.40	140.94	48.15	51.39	76.60	108.29
Rho-NonO	TACR3 NK3R TACR3	Neuromedin-K receptor (NKR) (NK3R)	NK3R	465	52.70	51.33	95.65	173.03	76.35	29.84	92.60	223.04

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					surface(%)	surface density	total(%)	total density	surface(%)	surface density	total(%)	total density
Rho-NonO	NMBR	Neuromedin-B receptor (NMB-R)	NMBR	390	29.00	53.98	68.30	67.76	77.30	46.03	95.00	485.58
Rho-NonO	NMUR1 GPR66	Neuromedin-U receptor 1 (NMU)	NMUR1	426	74.30	20.65	52.65	25.14	29.65	63.90	88.40	364.52
Rho-NonO	NMUR2 NMUR2R	Neuromedin-U receptor 2 (NMU)	NMUR2	415	53.20	49.75	86.10	85.48	43.65	24.92	81.00	31.04
Rho-NonO	NPBWR1 GPR7	Neuropeptides B/W receptor typ	NPBW1	328	50.70	163.37	97.45	578.37	49.50	114.52	92.00	424.59
Rho-NonO	NPBWR2 GPR8	Neuropeptides B/W receptor typ	NPBW2	333	42.45	89.37	96.30	430.84	30.90	47.06	90.45	156.73
Rho-NonO	NPFFR1 GPR147	Neuropeptide FF receptor 1 (G-p	NPFF1	430	40.65	75.27	82.50	101.50	48.75	34.37	94.15	497.46
Rho-NonO	NPFFR2 GPR74	Neuropeptide FF receptor 2 (G-p	NPFF2	522	51.60	96.94	98.15	314.74	28.50	43.53	87.35	245.40
Rho-NonO	NPSR1 GPR154	Neuropeptide S receptor (G-prot	NPSR1	371	75.25	113.39	97.25	484.33	44.85	47.55	71.35	82.47
Rho-NonO	NPY1R NPYR NP	Neuropeptide Y receptor type 1	NPY1R	384	29.30	76.03	83.60	144.32	89.45	64.89	89.90	309.37
Rho-NonO	NPY2R	Neuropeptide Y receptor type 2	NPY2R	381	12.30	63.24	43.45	92.15	20.20	29.82	79.90	270.60
Rho-NonO	PPYR1 NPY4R	Neuropeptide Y receptor type 4	NPY4R	375	32.35	118.66	75.75	111.71	31.40	44.04	89.85	233.94
Rho-NonO	NPY5R NPYR5	Neuropeptide Y receptor type 5	NPY5R	445	25.00	123.71	40.15	71.70	65.45	52.30	97.35	496.37
Rho-NonO	NPY6R NPY1RL Y	Putative neuropeptide Y recepto	NPY6R	290	66.20	75.54	94.00	200.50	55.65	24.33	97.45	141.70
Rho-NonO	NTSR1 NTRR	Neurotensin receptor type 1 (NT	NTR1	418	53.30	189.24	96.65	618.41	66.60	172.20	94.75	793.11
Rho-NonO	NTSR2	Neurotensin receptor type 2 (NT	NTR2	410	46.10	113.57	96.50	468.83	58.85	71.53	92.55	484.27
Rho-NonO	GPR68 OGR1	Ovarian cancer G-protein couple	OGR1	365	60.10	95.67	96.65	530.74	47.30	36.10	92.30	281.99
Rho-NonO	OPN3 ECPN	Opsin-3 (Encephalopsin) (Panops	OPN3	402	53.35	76.06	93.85	276.53	74.35	146.08	94.45	730.90
Rho-NonO	OPN4 MOP	Melanopsin (Opsin-4)	OPN4	478	45.20	82.98	84.80	123.83	71.15	107.04	91.10	456.15
Rho-NonO	OPN5 GPR136 P	Opsin-5 (G-protein coupled rece	OPN5	354	52.30	103.04	95.60	404.17	64.35	126.42	94.35	774.32
Rho-NonO	OPRD1 OPRD	Delta-type opioid receptor (D-O	OPRD	372	37.75	44.89	66.05	68.44	27.10	86.55	90.25	249.79
Rho-NonO	OPRK1 OPRK	Kappa-type opioid receptor (K-C	OPRK	380	19.15	48.10	72.45	91.54	39.35	26.44	74.15	229.09
Rho-NonO	OPRM1 MOR1	Mu-type opioid receptor (M-OR	OPRM	400	35.70	44.88	79.85	139.98	48.20	30.27	55.95	262.07
Rho-NonO	OPRL1 OOR ORL	Nociceptin receptor (Kappa-type	OPRX	370	50.35	63.50	96.65	273.03	51.35	32.81	90.25	281.40
Rho-NonO	OPN1SW BCP	Short-wave-sensitive opsin 1 (Blu	OPSD	348	89.85	92.19	93.30	800.47	91.45	55.30	86.05	1,035.60
Rho-NonO	RHO OPN2	Rhodopsin (Opsin-2)	OPSD	348	97.00	396.31	61.15	216.61	94.45	190.03	39.95	315.71
Rho-NonO	OPN1MW GCP;	Medium-wave-sensitive opsin 1	OPSG	364	93.10	97.20	95.75	177.12	95.70	227.89	84.05	308.09
Rho-NonO	OPN1LW RCP	Long-wave-sensitive opsin 1 (Rec	OPSR	364	60.60	77.81	93.00	151.03	93.90	141.82	86.80	417.43
Rho-NonO	RRH	Visual pigment-like receptor per	OPSX	337	71.50	75.97	93.85	179.45	42.25	36.90	64.45	79.31
Rho-NonO	HCRTR1	Orexin receptor type 1 (Ox-1-R)	OX1R	425	74.65	48.05	96.70	626.99	74.85	27.55	94.75	411.98
Rho-NonO	HCRTR2	Orexin receptor type 2 (Ox-2-R)	OX2R	444	54.55	78.79	81.35	90.45	50.80	26.76	87.00	255.64
Rho-NonO	OXER1 GPR170	Oxoecosanoid receptor 1 (5-oxo	OXER1	423	66.95	100.37	98.10	654.73	77.65	52.04	96.45	351.30
Rho-NonO	OXGR1 GPR80 G	2-oxoglutarate receptor 1 (Alpha	OXGR1	337	37.20	80.45	37.50	73.18	69.20	29.61	94.55	303.00
Rho-NonO	OXTR	Oxytocin receptor (OT-R)	OXYR	389	79.15	80.10	98.30	414.24	74.70	36.65	83.60	56.58
Rho-NonO	P2RY1	P2Y purinoceptor 1 (P2Y1) (ATP	P2RY1	373	43.85	52.19	70.75	76.83	74.40	26.52	93.25	190.27
Rho-NonO	P2RY2 P2RU1	P2Y purinoceptor 2 (P2Y2) (ATP r	P2RY2	377	50.80	40.28	82.25	81.84	81.30	41.28	97.05	330.88
Rho-NonO	P2RY4 NRU	P2Y purinoceptor 4 (P2Y4) (P2P)	P2RY4	365	52.40	50.64	79.45	85.49	79.55	44.67	97.05	295.01
Rho-NonO	P2RY6 PP2891	P2Y purinoceptor 6 (P2Y6)	P2RY6	328	67.70	70.83	96.55	449.18	68.65	56.12	96.50	266.45
Rho-NonO	P2RY8	P2Y purinoceptor 8 (P2Y8)	P2RY8	359	64.60	88.67	97.95	501.51	64.25	33.29	93.15	198.99
Rho-NonO	P2RY10	Putative P2Y purinoceptor 10 (P2	P2Y10	339	14.20	117.38	38.40	136.57	60.70	24.05	95.25	303.20
Rho-NonO	P2RY11	P2Y purinoceptor 11 (P2Y11)	P2Y11	374	78.55	111.37	97.70	587.06	68.40	35.86	84.65	74.01

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Rho-NonO	P2RY12 HORK3	P2Y purinoceptor 12 (P2Y12) (G-protein coupled)	P2Y12	342	40.80	71.45	89.00	401.70	51.75	179.70	88.95	770.32
Rho-NonO	P2RY13 GPR86	P2Y purinoceptor 13 (P2Y13) (G-protein coupled)	P2Y13	354	20.43	58.42	49.15	27.72	79.65	27.37	96.10	537.48
Rho-NonO	P2RY14 GPR105	P2Y purinoceptor 14 (P2Y14) (G-protein coupled)	P2Y14	338	58.45	70.07	75.55	72.61	77.05	96.87	95.50	731.41
Rho-NonO	F2R CF2R PAR1	Proteinase-activated receptor 1	PAR1	425	84.40	53.04	88.25	102.36	92.85	47.53	86.25	101.03
Rho-NonO	F2RL1 GPR11	Proteinase-activated receptor 2	PAR2	397	73.35	77.42	98.05	271.61	62.30	23.53	95.20	238.78
Rho-NonO	F2RL2 PAR3	Proteinase-activated receptor 3	PAR3	374	86.30	101.69	98.15	434.04	76.45	24.05	94.80	151.66
Rho-NonO	F2RL3 PAR4	Proteinase-activated receptor 4	PAR4	385	27.25	198.29	60.15	178.65	75.60	48.13	95.55	285.13
Rho-NonO	PTGDR	Prostaglandin D2 receptor (PGD)	PD2R	359	77.95	72.90	90.25	80.85	74.10	41.01	95.55	651.73
Rho-NonO	PTGDR2 CRTH2	Prostaglandin D2 receptor 2 (Chemokine)	PD2R2	395	42.60	62.95	48.70	69.91	86.30	88.87	98.05	690.59
Rho-NonO	PTGER1	Prostaglandin E2 receptor EP1 subtype	PE2R1	402	65.75	56.68	97.40	266.64	62.50	81.21	96.35	905.06
Rho-NonO	PTGER2	Prostaglandin E2 receptor EP2 subtype	PE2R2	358	40.80	115.00	60.40	122.48	63.05	231.11	96.25	923.72
Rho-NonO	PTGER3	Prostaglandin E2 receptor EP3 subtype	PE2R3	390	38.40	34.56	23.70	32.48	77.70	45.55	95.10	469.19
Rho-NonO	PTGER4 PTGER2	Prostaglandin E2 receptor EP4 subtype	PE2R4	488	71.20	128.93	96.70	565.99	53.05	66.41	92.35	678.18
Rho-NonO	PTGFR	Prostaglandin F2-alpha receptor	PF2R	359	40.65	41.93	37.95	44.63	54.75	35.63	79.95	394.18
Rho-NonO	PTGIR PRIPR	Prostacyclin receptor (Prostaglandin I2)	PI2R	386	77.00	143.18	97.90	436.95	61.85	134.47	93.65	667.38
Rho-NonO	PROKR1 GPR73	Prokineticin receptor 1 (PK-R1) (G-protein coupled)	PKR1	393	41.65	115.44	89.80	312.94	30.95	71.41	95.75	218.21
Rho-NonO	PROKR2 GPR73L	Prokineticin receptor 2 (PK-R2) (G-protein coupled)	PKR2	384	64.20	69.33	92.35	138.97	46.55	49.85	60.95	59.04
Rho-NonO	PRLHR GPR10 G	Prolactin-releasing peptide receptor	PRLHR	370	42.20	46.73	85.55	85.36	45.10	25.34	95.60	485.01
Rho-NonO	GPR65 TDAG8	Psychosine receptor (G-protein coupled)	PSYR	337	9.20	127.49	47.85	148.03	49.15	19.80	93.95	141.85
Rho-NonO	PTAFR PAFR	Platelet-activating factor receptor	PTAFR	342	27.25	109.38	50.70	112.80	51.95	24.15	91.85	300.18
Rho-NonO	QRFPR GPR103	Pyroglutamylated RFamide peptide receptor	QRFPR	431	28.55	115.61	48.10	118.01	55.40	25.54	94.05	228.88
Rho-NonO	RGR	RPE-retinal G protein-coupled receptor	RGR	291	83.30	277.40	97.75	924.27	37.45	61.75	45.10	63.87
Rho-NonO	RXFP3 RLN3R1	Relaxin-3 receptor 1 (RLN3 receptor)	RL3R1	469	47.20	99.67	68.40	111.80	84.55	60.30	95.80	548.73
Rho-NonO	RXFP4 GPR100	Relaxin-3 receptor 2 (RLN3 receptor)	RL3R2	374	29.00	90.19	46.05	98.52	71.35	81.47	94.40	140.94
Rho-NonO	RXFP1 LGR7	Relaxin receptor 1 (Leucine-rich repeat)	RXFP1	757	25.95	93.95	36.20	70.67	50.90	55.33	76.05	267.84
Rho-NonO	RXFP2 GPR106	Relaxin receptor 2 (G-protein coupled)	RXFP2	754	57.60	103.32	70.90	73.77	61.25	67.33	87.75	149.91
Rho-NonO	S1PR1 CHEDG1	Sphingosine 1-phosphate receptor 1	S1PR1	382	81.50	46.72	90.35	249.48	94.50	133.40	62.30	209.51
Rho-NonO	S1PR2 EDG5	Sphingosine 1-phosphate receptor 2	S1PR2	353	36.40	72.22	77.70	227.05	31.85	48.90	76.90	429.97
Rho-NonO	S1PR3 EDG3	Sphingosine 1-phosphate receptor 3	S1PR3	378	40.95	70.50	42.85	46.28	63.25	37.68	92.85	237.91
Rho-NonO	S1PR4 EDG6	Sphingosine 1-phosphate receptor 4	S1PR4	384	34.95	35.59	69.30	292.29	65.25	47.21	85.30	675.09
Rho-NonO	S1PR5 EDG8	Sphingosine 1-phosphate receptor 5	S1PR5	398	69.15	55.86	63.45	47.05	89.10	48.42	88.40	258.49
Rho-NonO	SSTR1	Somatostatin receptor type 1 (SSR)	SSR1	391	73.70	80.49	96.00	608.24	46.45	46.67	62.40	47.78
Rho-NonO	SSTR2	Somatostatin receptor type 2 (SSR)	SSR2	369	53.60	49.95	74.80	170.50	79.95	47.91	53.00	245.07
Rho-NonO	SSTR3	Somatostatin receptor type 3 (SSR)	SSR3	418	79.55	43.55	93.05	229.36	38.40	38.16	53.30	45.14
Rho-NonO	SSTR4	Somatostatin receptor type 4 (SSR)	SSR4	388	71.10	81.83	96.45	605.11	58.15	48.54	73.45	51.07
Rho-NonO	SSTR5	Somatostatin receptor type 5 (SSR)	SSR5	364	56.75	39.86	89.05	324.78	34.45	53.10	53.50	52.42
Rho-NonO	SUCNR1 GPR91	Succinate receptor 1 (G-protein coupled)	SUCR1	334	69.90	80.32	92.85	129.48	38.90	35.94	62.50	64.90
Rho-NonO	TBXA2R	Thromboxane A2 receptor (TXA2)	TA2R	343	34.90	35.63	72.20	191.75	58.75	118.23	92.40	749.28
Rho-NonO	TAAR1 TA1 TAR	Trace amine-associated receptor 1	TAAR1	339	53.50	57.78	89.95	91.37	27.20	27.89	46.50	30.31
Rho-NonO	TAAR2 GPR58	Trace amine-associated receptor 2	TAAR2	351	61.95	64.51	84.95	80.45	44.50	29.72	60.55	35.66

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Family	Gene_names	Protein_names	Target name	WT-aa-count	Nt_BRIL constructs				ICL3_BRIL constructs			
					surface(%)	surface density	total(%)	total density	surface(%)	surface density	total(%)	total density
Rho-NonO	TAAR3 GPR57	Putative trace amine-associated	TAAR3	343	21.95	175.75	51.60	216.37	48.30	35.00	91.85	188.30
Rho-NonO	TAAR5 PNR	Trace amine-associated receptor	TAAR5	337	70.50	60.83	94.15	108.11	75.05	44.31	98.05	309.58
Rho-NonO	TAAR6 TA4 TAR	Trace amine-associated receptor	TAAR6	345	60.80	89.25	89.65	136.25	33.75	27.92	39.50	28.19
Rho-NonO	TAAR8 GPR102	Trace amine-associated receptor	TAAR8	342	59.70	80.27	87.60	139.91	42.25	31.63	58.95	44.19
Rho-NonO	TAAR9 TA3 TAR	Trace amine-associated receptor	TAAR9	348	47.15	75.77	81.10	121.29	39.80	25.23	40.85	39.79
Rho-NonO	TRHR	Thyrotropin-releasing hormone r	TRFR	398	87.70	59.48	98.20	402.50	88.85	72.71	97.35	296.30
Rho-NonO	TSHR LGR3	Thyrotropin receptor (Thyroid-st	TSHR	764	18.40	49.48	27.30	56.04	68.25	33.01	89.95	391.72
Rho-NonO	UTS2R GPR14	Urotensin-2 receptor (UR-2-R) (G	UR2R	389	71.35	44.42	93.80	73.47	83.60	135.67	90.40	156.75
Rho-NonO	AVPR1A AVPR1	Vasopressin V1a receptor (V1aR)	V1AR	418	62.35	112.68	87.35	135.29	74.05	78.58	82.75	107.34
Rho-NonO	AVPR1B AVPR3	Vasopressin V1b receptor (V1bR)	V1BR	424	75.90	182.08	97.65	711.95	28.35	93.54	96.00	521.59
Rho-NonO	AVPR2 ADHR DI	Vasopressin V2 receptor (V2R) (A	V2R	371	76.50	161.99	97.05	580.85	55.50	67.43	79.95	121.16
Rho-NonO	VN1R2 V1RL2	Vomeronasal type-1 receptor 2 (	VN1R2	395	42.15	62.49	82.20	382.79	64.20	86.60	94.95	560.50
Rho-NonO	VN1R3 V1RL3 FK	Vomeronasal type-1 receptor 3 (	VN1R3	311	63.85	95.42	95.60	546.82	56.05	22.02	93.25	89.19
Rho-NonO	VN1R4 V1RL4	Vomeronasal type-1 receptor 4 (	VN1R4	301	45.80	70.87	45.15	46.46	67.55	19.60	93.10	79.06
Rho-NonO	VN1R5 V1RL5	Vomeronasal type-1 receptor 5 (	VN1R5	357	34.25	79.84	36.85	60.10	55.10	20.94	81.60	51.80
Rho-NonO	VN1R17P VNRL4	Putative vomeronasal receptor-li	VNRL4	208	63.35	130.96	97.15	447.86	55.90	58.71	90.65	132.61
Rho-NonO	XCR1 CXCR1 G	Chemokine XC receptor 1 (G-pro	XCR1	333	34.40	25.65	58.90	45.17	57.20	44.61	95.60	354.10
Rho-NonO	VN1R1 V1RL1 V	Vomeronasal type-1 receptor 1 (	VN1R1	353	37.10	67.15	93.15	327.02	60.30	38.18	96.70	299.60
Rho-Olf	OR10A2 OR10A2	Olfactory receptor 10A2 (HP4) (C	O10A2	303	59.95	138.47	96.40	617.80	39.90	28.65	93.25	99.06
Rho-Olf	OR10A3	Olfactory receptor 10A3 (HTPCR)	O10A3	314	77.30	128.03	97.65	937.93	5.30	30.03	11.25	47.05
Rho-Olf	OR10A4 OR10A4	Olfactory receptor 10A4 (HP2) (C	O10A4	315	17.65	187.54	49.25	97.41	16.80	20.12	45.10	23.24
Rho-Olf	OR10A5 OR10A5	Olfactory receptor 10A5 (HP3) (C	O10A5	317	41.30	86.86	58.70	84.75	7.05	42.63	12.70	19.82
Rho-Olf	OR10A6	Olfactory receptor 10A6 (Olfacto	O10A6	314	53.75	83.76	97.45	691.59	63.50	21.52	76.85	49.89
Rho-Olf	OR10A7	Olfactory receptor 10A7 (Olfacto	O10A7	316	34.25	53.64	91.55	690.76	39.20	19.02	76.85	24.10
Rho-Olf	OR10AC1P OR10	Putative olfactory receptor 10AC	O10AC	325	41.00	70.89	53.75	63.47	18.20	28.22	47.10	74.13
Rho-Olf	OR10AD1 OR10	Olfactory receptor 10AD1 (Olfact	O10AD	317	60.10	175.57	94.35	397.82	21.90	20.15	93.00	119.88
Rho-Olf	OR10AG1	Olfactory receptor 10AG1 (Olfact	O10AG	301	40.55	81.13	53.50	64.70	49.40	28.22	93.50	64.72
Rho-Olf	OR10C1 OR10C2	Olfactory receptor 10C1 (Hs6M1-	O10C1	312	28.10	170.49	63.20	127.51	30.65	24.32	95.20	54.45
Rho-Olf	OR10D3 OR10D3	Putative olfactory receptor 10D3	O10D3	312	16.70	101.72	30.85	95.86	10.55	18.36	21.25	16.25
Rho-Olf	OR10D4P OR10D	Putative olfactory receptor 10D4	O10D4	298	64.85	137.82	97.00	611.71	39.85	18.91	88.25	54.96
Rho-Olf	OR10G2	Olfactory receptor 10G2	O10G2	310	42.70	116.46	93.90	230.36	13.95	29.80	64.15	76.97
Rho-Olf	OR10G3	Olfactory receptor 10G3 (Olfacto	O10G3	313	52.00	123.97	91.05	292.92	25.20	43.49	60.90	48.17
Rho-Olf	OR10G4	Olfactory receptor 10G4 (Olfacto	O10G4	311	18.85	160.48	54.85	102.37	24.25	30.98	66.25	33.76
Rho-Olf	OR10G6 OR10G6	Olfactory receptor 10G6 (Olfacto	O10G6	332	21.45	88.50	35.15	68.54	45.60	17.52	64.60	16.98
Rho-Olf	OR10G7	Olfactory receptor 10G7 (Olfacto	O10G7	311	17.70	135.30	55.50	101.47	15.00	17.34	17.70	20.17
Rho-Olf	OR10G8	Olfactory receptor 10G8 (Olfacto	O10G8	311	65.35	75.33	97.45	796.14	21.35	34.08	70.25	34.87
Rho-Olf	OR10G9 OR10G9	Olfactory receptor 10G9 (Olfacto	O10G9	311	28.15	88.80	58.65	91.52	22.50	52.46	89.75	70.41
Rho-Olf	OR10H1	Olfactory receptor 10H1 (Olfacto	O10H1	318	48.45	159.05	71.40	113.83	23.70	25.29	52.35	35.25
Rho-Olf	OR10H2	Olfactory receptor 10H2 (Olfacto	O10H2	315	66.55	177.94	76.15	209.70	42.95	43.62	73.45	222.45

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					surface(%)	surface density	total(%)	total density	surface(%)	surface density	total(%)	total density
Rho-Olf	OR10H3	Olfactory receptor 10H3 (Olfacto	O10H3	316	56.40	131.56	93.25	205.47	60.20	52.95	92.15	85.31
Rho-Olf	OR10H4	Olfactory receptor 10H4 (Olfacto	O10H4	316	21.30	76.09	42.05	106.71	4.95	47.84	6.05	32.56
Rho-Olf	OR10H5	Olfactory receptor 10H5 (Olfacto	O10H5	315	78.00	129.47	96.50	397.10	52.40	37.82	91.45	339.15
Rho-Olf	OR10J1	Olfactory receptor 10J1 (Olfacto	O10J1	320	63.70	55.87	97.20	656.48	13.45	46.11	85.45	158.82
Rho-Olf	OR10J3 OR10J3P	Olfactory receptor 10J3	O10J3	329	21.70	50.85	76.95	119.82	38.15	17.50	88.10	27.45
Rho-Olf	OR10J4 OR10J4P	Olfactory receptor 10J4	O10J4	311	9.80	160.25	23.20	82.91	19.70	22.38	58.50	24.86
Rho-Olf	OR10J5	Olfactory receptor 10J5 (Olfacto	O10J5	309	74.75	74.34	89.50	1,671.49	9.75	36.27	67.75	69.07
Rho-Olf	OR10J6P OR10J6	Putative olfactory receptor 10J6	O10J6	276	54.20	131.36	95.30	526.27	25.75	19.87	88.25	51.10
Rho-Olf	OR10K1	Olfactory receptor 10K1 (Olfacto	O10K1	313	47.15	77.18	94.05	394.08	25.05	42.88	92.90	146.59
Rho-Olf	OR10K2	Olfactory receptor 10K2 (Olfacto	O10K2	312	51.10	45.33	95.55	484.22	8.90	24.99	91.85	40.43
Rho-Olf	OR10P1 OR10P1P	Olfactory receptor 10P1 (Olfacto	O10P1	313	31.70	122.36	46.25	77.38	19.45	31.79	52.15	40.29
Rho-Olf	OR10Q1	Olfactory receptor 10Q1 (Olfacto	O10Q1	319	47.60	336.62	57.25	206.74	9.40	20.40	63.60	38.51
Rho-Olf	OR10R2	Olfactory receptor 10R2 (Olfacto	O10R2	335	42.85	67.13	91.55	483.58	42.50	16.76	87.50	40.22
Rho-Olf	OR10S1	Olfactory receptor 10S1 (Olfacto	O10S1	331	19.40	70.33	41.90	86.71	37.85	25.45	94.35	64.50
Rho-Olf	OR10T2	Olfactory receptor 10T2 (Olfacto	O10T2	314	46.10	56.11	96.00	502.81	29.70	14.27	83.15	28.12
Rho-Olf	OR10V1	Olfactory receptor 10V1 (Olfacto	O10V1	309	69.55	82.24	85.45	1,010.96	17.25	19.45	49.25	39.97
Rho-Olf	OR10W1 OR10W1P	Olfactory receptor 10W1 (Olfacto	O10W1	305	72.05	156.49	97.85	802.78	21.70	22.88	57.55	29.50
Rho-Olf	OR10X1 OR10X1P	Olfactory receptor 10X1 (Olfacto	O10X1	326	94.35	137.14	94.20	403.51	34.45	15.50	83.60	98.89
Rho-Olf	OR10Z1	Olfactory receptor 10Z1 (Olfacto	O10Z1	313	34.25	68.59	90.95	365.62	7.75	52.79	57.00	19.46
Rho-Olf	OR11A1 OR11A1P	Olfactory receptor 11A1 (Hs6M1)	O11A1	315	75.20	127.67	97.65	942.10	25.95	31.87	97.55	109.05
Rho-Olf	OR11G2	Olfactory receptor 11G2 (Olfacto	O11G2	345	37.80	78.54	42.85	58.52	7.10	16.80	10.05	16.74
Rho-Olf	OR11H1	Olfactory receptor 11H1 (Olfacto	O11H1	326	74.85	126.80	96.85	906.18	41.00	13.90	54.40	19.63
Rho-Olf	OR11H2 C14orf1	Olfactory receptor 11H2 (Olfacto	O11H2	326	76.20	133.12	97.25	909.89	23.41	21.66	61.75	31.60
Rho-Olf	OR11H4	Olfactory receptor 11H4 (Olfacto	O11H4	324	34.75	85.48	47.20	64.00	37.25	23.78	94.10	76.61
Rho-Olf	OR11H6	Olfactory receptor 11H6 (Olfacto	O11H6	330	75.05	175.22	97.95	727.86	8.50	39.07	17.00	29.38
Rho-Olf	OR11H7 OR11H7P	Olfactory receptor 11H7 (Olfacto	O11H7	314	35.30	92.73	92.45	420.30	17.90	28.13	95.40	62.83
Rho-Olf	OR11H12	Olfactory receptor 11H12	O11HC	326	30.75	51.94	80.30	134.55	45.30	13.82	49.30	23.34
Rho-Olf	OR11L1	Olfactory receptor 11L1	O11L1	322	43.35	69.38	91.25	377.57	18.40	34.50	92.00	95.44
Rho-Olf	OR12D2	Olfactory receptor 12D2 (Hs6M1)	O12D2	307	42.80	82.20	92.05	188.28	25.30	22.99	60.00	55.98
Rho-Olf	OR12D3	Olfactory receptor 12D3 (Hs6M1)	O12D3	316	35.40	71.67	44.20	75.23	32.35	21.84	53.95	18.96
Rho-Olf	OR13A1	Olfactory receptor 13A1 (Olfacto	O13A1	328	46.00	76.55	93.25	735.16	18.25	24.07	63.55	62.39
Rho-Olf	OR13C2	Olfactory receptor 13C2 (Olfacto	O13C2	318	40.35	53.49	59.40	50.48	15.00	26.32	88.15	65.57
Rho-Olf	OR13C3	Olfactory receptor 13C3 (Olfacto	O13C3	347	14.60	109.57	25.60	70.07	46.85	25.09	72.65	72.10
Rho-Olf	OR13C4	Olfactory receptor 13C4 (Olfacto	O13C4	318	40.90	134.14	82.95	174.07	14.20	22.26	75.75	33.53
Rho-Olf	OR13C5	Olfactory receptor 13C5 (Olfacto	O13C5	318	31.65	146.32	94.50	617.64	38.05	28.85	96.05	73.38
Rho-Olf	OR13C8	Olfactory receptor 13C8	O13C8	320	10.10	58.37	19.25	52.43	22.40	89.60	75.70	62.21
Rho-Olf	OR13C9	Olfactory receptor 13C9 (Olfacto	O13C9	318	22.35	58.02	90.10	518.76	37.15	18.33	88.50	97.83
Rho-Olf	OR13D1	Olfactory receptor 13D1 (Olfacto	O13D1	346	24.45	44.47	87.25	672.43	23.25	15.00	48.95	27.15
Rho-Olf	OR13F1	Olfactory receptor 13F1 (Olfacto	O13F1	319	25.20	62.73	52.80	58.56	7.60	79.36	8.80	16.79
Rho-Olf	OR13G1	Olfactory receptor 13G1 (Olfacto	O13G1	307	33.85	79.62	69.60	84.03	21.75	31.08	76.70	54.84

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Family	Gene_names	Protein_names	Target name	WT-aa-count	Nt_BRIL constructs				ICL3_BRIL constructs			
					surface(%)	surface density	total(%)	total density	surface(%)	surface density	total(%)	total density
Rho-Olf	OR13H1	Olfactory receptor 13H1 (Olfacto	O13H1	308	64.05	153.34	88.45	148.07	14.70	29.69	46.80	16.76
Rho-Olf	OR13J1	Olfactory receptor 13J1 (Olfacto	O13J1	312	59.25	229.33	95.95	520.31	44.90	58.07	95.80	98.43
Rho-Olf	OR14A2 OR5AX	Olfactory receptor 14A2 (Olfacto	O14A2	314	50.80	192.61	88.15	172.85	15.70	32.86	58.20	62.65
Rho-Olf	OR14A16 OR5A	Olfactory receptor 14A16 (Olfact	O14AG	309	43.90	113.95	81.35	577.76	47.15	23.53	81.75	82.02
Rho-Olf	OR14C36 OR5BF	Olfactory receptor 14C36 (Olfact	O14CZ	312	57.90	52.47	97.25	815.43	52.20	33.50	92.40	230.30
Rho-Olf	OR14I1 OR5BU1	Olfactory receptor 14I1 (Olfacto	O14I1	311	55.20	82.72	96.95	522.35	42.45	41.51	82.40	134.23
Rho-Olf	OR14J1 OR5U1	Olfactory receptor 14J1 (Hs6M1-	O14J1	321	30.20	95.49	54.90	83.15	16.80	49.46	62.85	88.02
Rho-Olf	OR14K1 OR5AY1	Olfactory receptor 14K1 (Olfacto	O14K1	314	40.85	168.22	92.55	548.97	38.85	22.19	82.60	87.55
Rho-Olf	OR14L1P OR5AV	Putative olfactory receptor 14L1	O14L1	308	12.15	72.92	35.70	57.09	9.70	41.55	35.40	17.58
Rho-Olf	OR2A12 OR2A12	Olfactory receptor 2A12 (Olfacto	O2A12	310	44.25	62.88	84.35	160.32	21.75	33.16	31.85	34.34
Rho-Olf	OR2A14 OR2A14	Olfactory receptor 2A14 (OST182	O2A14	310	69.35	111.05	89.75	510.42	23.78	511.65	49.38	356.63
Rho-Olf	OR2A25 OR2A25	Olfactory receptor 2A25 (Olfacto	O2A25	310	24.20	184.84	49.75	139.64	47.20	22.65	93.25	60.17
Rho-Olf	OR2AE1 OR2AE2	Olfactory receptor 2AE1 (Olfacto	O2AE1	323	55.20	74.59	93.65	249.01	35.45	28.52	83.05	81.72
Rho-Olf	OR2AG1 OR2AG	Olfactory receptor 2AG1 (HT3) (C	O2AG1	316	21.30	120.62	41.35	108.02	19.40	22.32	93.20	37.38
Rho-Olf	OR2AG2 OR2AG	Olfactory receptor 2AG2	O2AG2	316	19.80	132.94	32.65	77.13	10.45	35.49	87.10	32.45
Rho-Olf	OR2AJ1 OR2AJ1	Olfactory receptor 2AJ1	O2AJ1	328	35.75	62.36	81.85	181.74	45.55	13.49	50.50	14.37
Rho-Olf	OR2AK2 OR2AK	Olfactory receptor 2AK2 (Olfacto	O2AK2	335	70.10	208.45	78.55	162.78	10.90	30.65	87.20	41.69
Rho-Olf	OR2AP1 OR2AP	Olfactory receptor 2AP1 (Olfacto	O2AP1	309	28.05	73.11	43.45	57.62	20.15	24.72	75.55	55.26
Rho-Olf	OR2AT4	Olfactory receptor 2AT4 (Olfacto	O2AT4	320	25.75	289.60	46.95	115.83	15.95	20.56	63.75	25.07
Rho-Olf	OR2T10	Olfactory receptor 2T10 (Olfacto	O2T10	312	16.85	91.33	45.35	66.09	10.60	37.27	27.30	37.34
Rho-Olf	OR2T11	Olfactory receptor 2T11 (Olfacto	O2T11	316	37.95	56.71	91.60	663.22	33.20	20.90	75.55	58.19
Rho-Olf	OR2T12	Olfactory receptor 2T12 (Olfacto	O2T12	320	70.95	92.95	90.30	1,363.52	20.65	21.83	81.75	80.88
Rho-Olf	OR2T27	Olfactory receptor 2T27 (Olfacto	O2T27	317	50.15	320.15	94.45	979.57	26.60	30.11	91.80	58.49
Rho-Olf	OR2T29	Olfactory receptor 2T29	O2T29	315	60.55	138.48	96.50	377.46	36.80	11.77	44.10	13.80
Rho-Olf	OR2T33	Olfactory receptor 2T33 (Olfacto	O2T33	320	38.95	68.72	47.58	56.27	22.55	26.03	49.10	28.09
Rho-Olf	OR2T34	Olfactory receptor 2T34 (Olfacto	O2T34	318	45.80	184.30	59.45	113.23	54.45	95.25	96.30	414.02
Rho-Olf	OR2T35	Olfactory receptor 2T35 (Olfacto	O2T35	323	34.40	75.59	54.75	55.16	55.15	25.71	86.90	171.61
Rho-Olf	OR4A15	Olfactory receptor 4A15 (Olfacto	O4A15	344	43.85	97.17	59.95	80.07	42.45	22.28	94.15	44.83
Rho-Olf	OR4A16	Olfactory receptor 4A16 (Olfacto	O4A16	328	23.55	74.77	77.55	154.63	14.80	20.90	63.05	33.66
Rho-Olf	OR4A47	Olfactory receptor 4A47 (Olfacto	O4A47	309	26.65	95.06	44.15	81.89	54.25	32.29	80.80	92.28
Rho-Olf	OR4C45	Olfactory receptor 4C45	O4C45	311	64.60	110.22	92.85	383.50	26.65	25.52	65.90	31.14
Rho-Olf	OR4C46	Olfactory receptor 4C46	O4C46	309	32.55	54.78	86.15	235.87	15.10	28.46	82.10	74.77
Rho-Olf	OR4F15	Olfactory receptor 4F15 (Olfacto	O4F15	312	38.60	156.21	47.20	89.79	22.90	30.21	63.35	58.96
Rho-Olf	OR4F17 OR4F11	Olfactory receptor 4F17 (Olfacto	O4F17	305	46.60	171.82	61.45	182.51	5.20	60.28	43.30	33.26
Rho-Olf	OR4F21 OR4F21	Olfactory receptor 4F21	O4F21	312	27.10	109.90	46.25	72.85	33.45	22.84	43.75	21.40
Rho-Olf	OR51A2	Olfactory receptor 51A2	O51A2	313	34.10	57.11	80.35	150.01	32.00	33.26	89.40	39.08
Rho-Olf	OR51A4	Olfactory receptor 51A4	O51A4	313	57.75	83.12	95.85	451.79	13.50	19.93	43.15	24.63
Rho-Olf	OR51A7	Olfactory receptor 51A7 (Olfacto	O51A7	312	66.10	117.18	90.80	179.70	11.40	18.36	37.80	28.52
Rho-Olf	OR51B2 OR51B	Olfactory receptor 51B2 (Odoran	O51B2	312	77.75	118.85	95.70	335.42	50.80	20.25	68.00	30.86
Rho-Olf	OR51B4	Olfactory receptor 51B4 (Odoran	O51B4	310	64.60	116.56	97.90	549.11	20.40	23.15	95.10	71.07

Table S1. Comprehensive Protein Expression Data for 826 GPCRs

Family	Gene_names	Protein_names	Target name	WT-aa-count	Nt_BRIL constructs				ICL3_BRIL constructs			
					surface(%)	surface density	total(%)	total density	surface(%)	surface density	total(%)	total density
Rho-Olf	OR51B5	Olfactory receptor 51B5 (Odoran	O51B5	312	53.55	100.04	93.95	397.63	15.55	43.60	12.95	30.77
Rho-Olf	OR51B6	Olfactory receptor 51B6 (Odoran	O51B6	312	59.25	91.41	94.80	305.11	36.40	42.02	93.80	155.56
Rho-Olf	OR51D1	Olfactory receptor 51D1 (Olfacto	O51D1	324	38.95	123.39	44.20	76.98	58.15	33.89	83.00	151.93
Rho-Olf	OR51E1 GPR164	Olfactory receptor 51E1 (D-GPCR	O51E1	317	38.25	70.86	90.55	317.18	24.65	17.76	35.20	14.03
Rho-Olf	OR51E2 PSGR	Olfactory receptor 51E2 (HPRAJ)	O51E2	320	54.85	113.97	90.75	178.51	12.45	48.61	36.35	21.95
Rho-Olf	OR51F1 OR51F1	Olfactory receptor 51F1	O51F1	319	38.70	140.31	69.50	105.05	12.55	19.82	61.90	42.50
Rho-Olf	OR51F2	Olfactory receptor 51F2 (Olfacto	O51F2	342	13.15	114.34	26.60	91.89	5.55	19.69	38.60	25.55
Rho-Olf	OR51G1 OR51G1	Olfactory receptor 51G1 (Olfacto	O51G1	321	79.90	35.41	97.35	257.84	40.15	28.92	37.60	27.75
Rho-Olf	OR51G2	Olfactory receptor 51G2 (Olfacto	O51G2	314	61.00	171.58	95.90	719.47	43.80	33.15	94.80	54.97
Rho-Olf	OR51H1P OR51H1	Putative olfactory receptor 51H1	O51H1	302	52.60	69.24	94.85	259.91	39.50	47.00	87.25	123.05
Rho-Olf	OR51I1	Olfactory receptor 51I1 (Odorant	O51I1	314	54.75	125.90	58.55	77.24	51.40	23.49	71.55	110.87
Rho-Olf	OR51I2	Olfactory receptor 51I2 (Odorant	O51I2	312	42.70	203.69	92.00	476.96	46.55	17.50	85.35	50.88
Rho-Olf	OR51J1 OR51J1	Olfactory receptor 51J1 (Odorant	O51J1	316	41.40	76.43	96.85	839.51	23.00	14.79	51.65	15.34
Rho-Olf	OR51L1	Olfactory receptor 51L1 (Olfacto	O51L1	315	35.70	71.41	41.45	67.11	20.30	26.76	95.75	62.46
Rho-Olf	OR51M1	Olfactory receptor 51M1 (Odoran	O51M1	315	33.95	72.16	95.40	242.76	8.00	66.58	52.00	29.36
Rho-Olf	OR51Q1	Olfactory receptor 51Q1	O51Q1	317	62.10	117.09	90.00	176.66	22.60	29.65	53.50	23.52
Rho-Olf	OR51S1	Olfactory receptor 51S1 (Olfacto	O51S1	323	36.15	171.42	82.45	218.53	19.95	37.26	56.20	29.89
Rho-Olf	OR51T1	Olfactory receptor 51T1 (Olfacto	O51T1	327	31.80	100.61	51.85	69.05	36.15	28.33	66.55	27.92
Rho-Olf	OR51V1 OR51V1	Olfactory receptor 51V1 (Odoran	O51V1	321	40.30	124.96	95.00	403.31	54.30	24.47	93.45	149.80
Rho-Olf	OR52A1	Olfactory receptor 52A1 (HPFH1)	O52A1	312	35.50	66.68	91.65	364.98	15.95	37.11	56.70	48.76
Rho-Olf	OR52A4	Putative olfactory receptor 52A4	O52A4	304	18.30	114.75	93.95	412.07	29.65	14.25	79.75	28.22
Rho-Olf	OR52A5	Olfactory receptor 52A5 (Odoran	O52A5	316	26.30	78.15	36.85	64.26	30.45	37.24	91.85	34.17
Rho-Olf	OR52B2	Olfactory receptor 52B2 (Olfacto	O52B2	323	61.40	226.45	71.65	177.44	11.05	19.88	73.00	99.05
Rho-Olf	OR52B4	Olfactory receptor 52B4 (Olfacto	O52B4	314	36.00	87.10	35.90	73.99	32.80	20.86	81.70	91.95
Rho-Olf	OR52B6	Olfactory receptor 52B6 (Olfacto	O52B6	335	31.90	74.51	45.75	73.10	28.10	46.90	67.75	66.58
Rho-Olf	OR52D1	Olfactory receptor 52D1 (Odoran	O52D1	318	35.25	166.68	60.75	106.10	33.25	170.00	94.50	472.72
Rho-Olf	OR52E1 OR52E1	Olfactory receptor 52E1	O52E1	308	58.25	85.72	95.50	726.75	22.50	17.80	81.55	25.33
Rho-Olf	OR52E2	Olfactory receptor 52E2	O52E2	325	24.05	51.71	48.55	61.18	16.05	29.52	42.35	21.38
Rho-Olf	OR52E4	Olfactory receptor 52E4 (Olfacto	O52E4	312	43.75	69.89	96.55	399.48	33.40	31.43	84.05	112.00
Rho-Olf	OR52E5	Olfactory receptor 52E5	O52E5	315	21.40	145.66	31.65	144.28	13.20	34.12	52.00	40.30
Rho-Olf	OR52E6	Olfactory receptor 52E6 (Olfacto	O52E6	313	30.40	83.35	46.35	78.10	13.10	19.21	30.45	17.84
Rho-Olf	OR52E8	Olfactory receptor 52E8 (Olfacto	O52E8	317	57.60	84.22	87.70	150.24	31.95	26.17	54.60	18.52
Rho-Olf	OR52H1	Olfactory receptor 52H1 (Olfacto	O52H1	320	23.50	103.57	42.30	90.27	20.05	46.36	92.10	44.17
Rho-Olf	OR52I1	Olfactory receptor 52I1 (Olfacto	O52I1	324	43.70	80.17	95.95	509.63	16.10	22.09	63.10	33.42
Rho-Olf	OR52I2	Olfactory receptor 52I2 (Olfacto	O52I2	350	14.50	146.78	50.50	58.76	15.45	20.42	58.35	31.12
Rho-Olf	OR52J3	Olfactory receptor 52J3 (Olfacto	O52J3	311	25.85	62.22	49.75	139.64	4.65	16.52	8.60	15.17
Rho-Olf	OR52K1	Olfactory receptor 52K1 (Olfacto	O52K1	314	56.25	134.72	93.55	664.63	43.55	20.05	56.00	18.21
Rho-Olf	OR52K2	Olfactory receptor 52K2 (Olfacto	O52K2	314	46.50	81.87	95.85	498.76	8.90	17.52	5.60	19.42
Rho-Olf	OR52L1	Olfactory receptor 52L1 (Olfacto	O52L1	329	38.85	140.84	87.25	340.39	21.75	18.13	81.05	107.03
Rho-Olf	OR52L2P OR52L2	Putative olfactory receptor 52L2	O52L2	319	65.00	181.67	97.50	880.05	45.80	27.33	91.95	63.27

Table S1. Comprehensive Protein Expression Data for 826 GPCRs

Family	Gene_names	Protein_names	Target name	WT-aa-count	Nt_BRIL constructs				ICL3_BRIL constructs			
					surface(%)	surface density	total(%)	total density	surface(%)	surface density	total(%)	total density
Rho-Olf	OR52M1 OR52M1	Olfactory receptor 52M1 (Olfacto	O52M1	317	56.75	112.71	89.25	174.13	8.20	46.18	30.45	24.52
Rho-Olf	OR52N1	Olfactory receptor 52N1 (Olfacto	O52N1	320	8.75	50.90	61.20	156.48	45.05	18.56	88.10	58.48
Rho-Olf	OR52N2	Olfactory receptor 52N2 (Olfacto	O52N2	321	22.70	66.39	44.55	74.56	16.40	28.88	42.10	20.16
Rho-Olf	OR52N4	Olfactory receptor 52N4 (Olfacto	O52N4	321	32.90	49.42	52.85	71.69	17.75	39.85	91.20	106.22
Rho-Olf	OR52N5	Olfactory receptor 52N5 (Olfacto	O52N5	324	38.70	117.44	53.20	77.54	27.85	24.84	61.95	52.67
Rho-Olf	OR52P1P OR52P1	Putative olfactory receptor 52P1	O52P1	321	54.15	47.01	97.80	533.83	20.65	25.44	76.45	26.16
Rho-Olf	OR52R1	Olfactory receptor 52R1 (Olfacto	O52R1	315	26.50	112.42	86.25	316.16	29.30	21.23	75.90	20.31
Rho-Olf	OR52W1 OR52W1	Olfactory receptor 52W1 (Olfacto	O52W1	320	27.85	230.81	41.75	127.84	25.95	25.64	57.35	21.35
Rho-Olf	OR52Z1 OR52Z1	Olfactory receptor 52Z1	O52Z1	297	17.05	109.21	32.70	103.80	26.15	28.47	90.30	86.15
Rho-Olf	OR56A1	Olfactory receptor 56A1 (Olfacto	O56A1	318	54.60	64.17	46.85	69.43	48.80	21.73	93.45	38.67
Rho-Olf	OR56A3 OR56A3	Olfactory receptor 56A3 (Olfacto	O56A3	315	55.05	76.31	3.15	24.55	36.15	50.45	24.60	23.53
Rho-Olf	OR56A4	Olfactory receptor 56A4 (Olfacto	O56A4	313	80.30	155.94	97.90	801.58	52.70	14.24	56.60	14.48
Rho-Olf	OR56A5 OR56A5	Olfactory receptor 56A5	O56A5	313	60.00	74.78	92.25	252.51	36.10	14.53	75.35	20.95
Rho-Olf	OR56B1 OR56B1	Olfactory receptor 56B1 (Olfacto	O56B1	324	29.25	93.91	48.20	85.10	21.70	19.81	65.80	39.57
Rho-Olf	OR56B2P	Putative olfactory receptor 56B2	O56B2	322	15.45	39.54	20.00	35.28	21.35	20.01	31.40	16.17
Rho-Olf	OR56B4	Olfactory receptor 56B4 (Olfacto	O56B4	319	54.00	240.02	96.90	883.37	38.40	17.97	88.65	48.50
Rho-Olf	OR5AC1 OR5AC1	Olfactory receptor 5AC1 (Olfacto	O5AC1	307	71.70	96.63	91.95	133.22	49.60	72.70	70.35	43.60
Rho-Olf	OR5AC2	Olfactory receptor 5AC2 (HSA1)	O5AC2	309	37.00	68.72	45.70	66.92	58.40	32.39	97.25	147.73
Rho-Olf	OR5AK2	Olfactory receptor 5AK2	O5AK2	309	31.40	43.25	81.95	145.48	31.65	14.38	42.10	18.85
Rho-Olf	OR5AK3P OR5AK3	Putative olfactory receptor 5AK3	O5AK3	298	21.80	54.55	83.15	354.14	8.35	15.68	74.35	32.59
Rho-Olf	OR5AL1 OR5AL1	Olfactory receptor 5AL1 (Olfacto	O5AL1	328	21.90	66.16	34.00	55.38	28.33	16.09	58.70	30.00
Rho-Olf	OR5AN1	Olfactory receptor 5AN1 (Olfacto	O5AN1	311	59.60	101.99	96.60	880.81	27.70	28.63	70.20	23.57
Rho-Olf	OR5AP2	Olfactory receptor 5AP2	O5AP2	316	53.80	57.98	93.90	454.51	10.80	32.55	36.65	18.27
Rho-Olf	OR5AR1	Olfactory receptor 5AR1 (Olfacto	O5AR1	310	11.20	83.21	24.45	79.93	10.95	44.53	88.65	34.72
Rho-Olf	OR5AS1	Olfactory receptor 5AS1 (Olfacto	O5AS1	324	58.50	125.09	92.75	325.43	14.10	34.00	49.80	32.51
Rho-Olf	OR5AU1	Olfactory receptor 5AU1 (Olfacto	O5AU1	362	24.05	158.08	39.95	58.76	17.80	58.21	95.25	108.11
Rho-Olf	OR5H14	Olfactory receptor 5H14	O5H14	310	59.00	112.55	93.80	607.97	30.80	31.28	81.50	189.79
Rho-Olf	OR5H15	Olfactory receptor 5H15	O5H15	313	64.45	165.93	93.10	217.81	26.55	27.06	57.85	22.21
Rho-Olf	OR6C65	Olfactory receptor 6C65	O6C65	312	39.50	63.51	87.85	180.35	22.50	26.84	92.60	40.44
Rho-Olf	OR6C68	Olfactory receptor 6C68	O6C68	312	38.55	89.25	93.60	296.43	27.75	28.88	94.30	77.48
Rho-Olf	OR6C70	Olfactory receptor 6C70	O6C70	312	59.55	143.06	87.75	1,573.84	10.46	220.63	24.54	150.52
Rho-Olf	OR6C74	Olfactory receptor 6C74	O6C74	312	43.20	143.00	67.90	125.17	21.15	34.71	90.40	40.04
Rho-Olf	OR6C75	Olfactory receptor 6C75	O6C75	312	38.90	109.32	49.65	87.07	21.20	23.29	33.20	30.77
Rho-Olf	OR6C76	Olfactory receptor 6C76	O6C76	312	37.45	49.61	88.60	275.09	14.30	16.09	77.65	54.55
Rho-Olf	OR7E24 OR7E24	Olfactory receptor 7E24 (Olfacto	O7E24	339	12.15	94.14	87.10	852.24	32.40	17.33	64.75	52.99
Rho-Olf	OR1A1	Olfactory receptor 1A1 (Olfactory	OR1A1	309	35.40	141.95	86.95	1,358.96	54.80	20.78	73.85	78.76
Rho-Olf	OR1A2	Olfactory receptor 1A2 (Olfactory	OR1A2	309	29.10	53.39	73.70	521.63	9.85	20.39	55.95	35.40
Rho-Olf	OR1B1	Olfactory receptor 1B1 (Olfactory	OR1B1	318	23.75	135.80	79.05	197.78	16.20	42.29	20.75	37.82
Rho-Olf	OR1C1	Olfactory receptor 1C1 (Olfactory	OR1C1	314	37.40	61.75	86.15	151.11	47.05	14.61	58.30	18.66
Rho-Olf	OR1D2 OLF1R1	Olfactory receptor 1D2 (Olfactory	OR1D2	312	30.60	137.45	49.75	70.44	44.75	40.25	97.50	166.71

Table S1. Comprehensive Protein Expression Data for 826 GPCRs

Family	Gene_names	Protein_names	Target name	WT-aa-count	Nt_BRIL constructs				ICL3_BRIL constructs			
					surface(%)	surface density	total(%)	total density	surface(%)	surface density	total(%)	total density
Rho-Olf	OR1D4	Olfactory receptor 1D4 (Olfactory receptor 1D4)	OR1D4	311	32.60	150.96	92.60	558.87	39.90	28.65	93.25	99.06
Rho-Olf	OR1D5	Olfactory receptor 1D5 (Olfactory receptor 1D5)	OR1D5	312	74.30	199.47	97.00	523.82	25.60	76.46	79.50	246.09
Rho-Olf	OR1E1 OR1E5 O	Olfactory receptor 1E1 (Olfactory receptor 1E1)	OR1E1	314	41.70	113.09	56.95	103.20	16.30	70.94	27.00	29.24
Rho-Olf	OR1E2 OR1E4	Olfactory receptor 1E2 (Olfactory receptor 1E2)	OR1E2	323	63.30	371.73	96.35	696.62	36.50	18.20	80.35	50.16
Rho-Olf	OR1E3 OR1E3P	Olfactory receptor 1E3 (Olfactory receptor 1E3)	OR1E3	343	33.80	93.80	45.80	75.53	50.90	20.16	92.35	63.48
Rho-Olf	OR1F1 OLFMF O	Olfactory receptor 1F1 (Olfactory receptor 1F1)	OR1F1	312	14.60	103.20	29.45	71.06	19.80	26.87	54.65	29.77
Rho-Olf	OR1F2P OR1F2	Putative olfactory receptor 1F2 (Olfactory receptor 1F2)	OR1F2	312	42.05	353.19	56.95	213.24	12.10	19.26	66.30	66.70
Rho-Olf	OR1F12 OR1F12	Olfactory receptor 1F12 (Hs6M1-12)	OR1FC	337	14.35	264.80	31.65	99.33	12.70	20.42	40.80	34.35
Rho-Olf	OR1G1 OR1G2	Olfactory receptor 1G1 (Olfactory receptor 1G1)	OR1G1	313	18.25	87.01	37.65	96.27	16.45	25.43	91.10	97.49
Rho-Olf	OR1I1	Olfactory receptor 1I1 (Olfactory receptor 1I1)	OR1I1	355	16.95	75.18	32.45	74.42	22.20	67.33	90.55	88.41
Rho-Olf	OR1J1	Olfactory receptor 1J1 (Olfactory receptor 1J1)	OR1J1	322	73.80	177.42	97.75	973.39	11.00	47.58	15.95	43.77
Rho-Olf	OR1J2 OR1J3 OR	Olfactory receptor 1J2 (HSA5) (HSA5)	OR1J2	313	22.05	208.95	85.65	245.96	24.85	22.29	58.95	30.03
Rho-Olf	OR1J4	Olfactory receptor 1J4 (HTPCRX0)	OR1J4	313	49.65	256.03	87.70	1,812.69	9.50	336.79	34.32	224.29
Rho-Olf	OR1K1	Olfactory receptor 1K1	OR1K1	316	17.50	174.52	33.15	106.53	16.85	15.13	79.70	25.25
Rho-Olf	OR1L1 OR1L2	Olfactory receptor 1L1 (Olfactory receptor 1L1)	OR1L1	360	56.40	213.27	72.90	190.66	11.05	35.02	92.60	40.40
Rho-Olf	OR1L3	Olfactory receptor 1L3 (Olfactory receptor 1L3)	OR1L3	324	30.75	98.17	42.45	103.78	50.85	25.88	95.65	60.23
Rho-Olf	OR1L4 OR1L5	Olfactory receptor 1L4 (OST046)	OR1L4	311	38.60	86.84	49.20	86.07	10.30	33.65	66.90	21.45
Rho-Olf	OR1L6 OR1L7	Olfactory receptor 1L6 (Olfactory receptor 1L6)	OR1L6	347	65.45	184.97	93.75	362.82	23.60	28.02	64.80	35.94
Rho-Olf	OR1L8	Olfactory receptor 1L8 (Olfactory receptor 1L8)	OR1L8	309	78.65	148.55	96.50	635.06	31.85	24.45	91.60	44.58
Rho-Olf	OR1M1	Olfactory receptor 1M1 (Olfactory receptor 1M1)	OR1M1	313	27.40	102.26	39.20	72.74	32.60	29.88	69.65	36.49
Rho-Olf	OR1N1 OR1N3	Olfactory receptor 1N1 (Olfactory receptor 1N1)	OR1N1	311	27.50	95.87	88.75	250.00	41.95	18.12	88.10	84.93
Rho-Olf	OR1N2	Olfactory receptor 1N2 (Olfactory receptor 1N2)	OR1N2	330	36.85	101.86	50.65	81.65	19.60	36.58	94.40	77.03
Rho-Olf	OR1P1 OR1P1P	Olfactory receptor 1P1 (Olfactory receptor 1P1)	OR1P1	330	35.70	142.92	57.40	96.91	53.20	15.26	42.35	20.36
Rho-Olf	OR1Q1 OR1Q2 O	Olfactory receptor 1Q1 (OST226)	OR1Q1	314	49.65	120.33	96.30	581.49	12.60	31.27	68.35	21.17
Rho-Olf	OR1S1	Olfactory receptor 1S1 (Olfactory receptor 1S1)	OR1S1	325	42.45	87.00	82.80	109.22	39.95	23.06	71.30	41.68
Rho-Olf	OR1S2	Olfactory receptor 1S2 (Olfactory receptor 1S2)	OR1S2	325	48.35	114.51	66.00	120.80	31.20	34.38	73.80	33.50
Rho-Olf	OR2A1; OR2A42	Olfactory receptor 2A1/2A42 (Olfactory receptor 2A1)	OR2A1	310	32.60	101.90	91.80	306.26	9.10	20.01	30.95	17.50
Rho-Olf	OR2A2 OR2A17	Olfactory receptor 2A2 (Olfactory receptor 2A2)	OR2A2	318	69.75	90.56	97.35	451.08	43.45	24.36	95.30	72.54
Rho-Olf	OR2A4 OR2A10	Olfactory receptor 2A4 (Olfactory receptor 2A4)	OR2A4	310	52.00	47.90	94.30	218.38	54.85	21.62	86.75	50.45
Rho-Olf	OR2A5 OR2A26	Olfactory receptor 2A5 (Olfactory receptor 2A5)	OR2A5	311	79.65	143.74	98.45	538.18	58.80	39.43	95.05	245.27
Rho-Olf	OR2A7	Olfactory receptor 2A7 (Olfactory receptor 2A7)	OR2A7	310	69.70	152.93	97.40	603.36	49.30	21.46	78.60	51.00
Rho-Olf	OR2B2 OR2B9	Olfactory receptor 2B2 (Hs6M1-12)	OR2B2	357	22.75	70.41	43.20	57.28	18.75	26.81	72.50	35.65
Rho-Olf	OR2B3 OR2B3P	Putative olfactory receptor 2B3 (Olfactory receptor 2B3)	OR2B3	313	57.00	148.02	73.00	101.99	20.95	24.03	48.35	26.44
Rho-Olf	OR2B6 OR2B1 O	Olfactory receptor 2B6 (Hs6M1-13)	OR2B6	313	14.95	55.39	32.25	57.39	12.55	19.55	23.20	16.64
Rho-Olf	OR2B8P OR2B8	Putative olfactory receptor 2B8 (Olfactory receptor 2B8)	OR2B8	312	32.80	62.97	71.40	542.45	9.95	31.86	38.60	37.92
Rho-Olf	OR2B11	Olfactory receptor 2B11	OR2BB	317	51.00	70.31	61.45	66.87	50.50	19.83	84.55	29.09
Rho-Olf	OR2C1 OR2C2P	Olfactory receptor 2C1 (OLFmf3)	OR2C1	312	53.35	81.20	92.15	330.57	43.00	18.45	78.25	58.21
Rho-Olf	OR2C3 OR2C4 O	Olfactory receptor 2C3 (Olfactory receptor 2C3)	OR2C3	320	34.40	62.33	96.00	471.23	23.15	33.71	87.15	26.82
Rho-Olf	OR2D2 OR2D1	Olfactory receptor 2D2 (HB2) (Olfactory receptor 2D2)	OR2D2	308	34.85	102.93	61.35	86.44	20.55	25.78	48.45	17.29
Rho-Olf	OR2D3	Olfactory receptor 2D3 (Olfactory receptor 2D3)	OR2D3	330	8.70	40.67	43.20	171.93	26.45	35.66	68.00	80.88

Table S1. Comprehensive Protein Expression Data for 826 GPCRs

Family	Gene_names	Protein_names	Target name	WT-aa-count	Nt_BRIL constructs				ICL3_BRIL constructs			
					surface(%)	surface density	total(%)	total density	surface(%)	surface density	total(%)	total density
Rho-Olf	OR2F1 OLF3 OR2F2	Olfactory receptor 2F1 (Olfactory receptor 2F1)	OR2F1	317	69.50	253.80	79.10	182.53	33.40	37.56	75.45	103.69
Rho-Olf	OR2F2	Olfactory receptor 2F2 (Olfactory receptor 2F2)	OR2F2	317	45.65	86.11	60.50	71.77	41.80	20.31	78.40	43.96
Rho-Olf	OR2G2	Olfactory receptor 2G2 (Olfactory receptor 2G2)	OR2G2	317	71.65	60.70	92.75	223.37	42.00	17.85	70.15	41.42
Rho-Olf	OR2G3	Olfactory receptor 2G3 (Olfactory receptor 2G3)	OR2G3	309	18.70	69.76	46.25	56.59	25.70	30.13	90.20	41.31
Rho-Olf	OR2G6	Olfactory receptor 2G6 (Olfactory receptor 2G6)	OR2G6	316	15.80	87.16	31.45	61.00	16.75	32.95	88.20	40.86
Rho-Olf	OR2H1 OR2H6 OR2H7	Olfactory receptor 2H1 (Hs6M1-1)	OR2H1	316	33.35	70.76	92.40	547.08	40.25	17.66	86.35	63.35
Rho-Olf	OR2H2 FAT11 OLF3	Olfactory receptor 2H2 (Hs6M1-2)	OR2H2	312	57.15	134.03	95.45	650.82	12.10	40.59	62.85	31.84
Rho-Olf	OR2I1P OR2I2 OLF3	Putative olfactory receptor 2I1 (F)	OR2I1	316	73.40	126.15	97.60	566.18	25.20	16.59	70.20	33.22
Rho-Olf	OR2J1 OR2J1P	Olfactory receptor 2J1 (Hs6M1-4)	OR2J1	312	40.70	94.60	95.60	502.87	37.95	27.64	87.65	29.29
Rho-Olf	OR2J2	Olfactory receptor 2J2 (Hs6M1-6)	OR2J2	312	25.85	109.02	36.45	66.69	43.85	12.72	23.65	17.77
Rho-Olf	OR2J3	Olfactory receptor 2J3 (Hs6M1-3)	OR2J3	311	33.60	158.91	78.80	189.92	24.75	39.88	60.20	33.21
Rho-Olf	OR2K2 OR2AR1P	Olfactory receptor 2K2 (HTPCRHO)	OR2K2	345	31.05	57.95	57.95	68.81	6.75	31.86	26.60	21.40
Rho-Olf	OR2L2 OR2L12 OLF3	Olfactory receptor 2L2 (HTPCRHO)	OR2L2	312	27.70	63.61	39.25	60.65	32.50	17.56	63.95	35.93
Rho-Olf	OR2L3	Olfactory receptor 2L3 (Olfactory receptor 2L3)	OR2L3	312	35.85	56.42	94.40	571.96	18.80	18.09	84.55	28.60
Rho-Olf	OR2L5 OR2L11	Olfactory receptor 2L5 (Olfactory receptor 2L5)	OR2L5	312	30.85	71.41	88.15	307.51	16.60	28.45	80.50	38.20
Rho-Olf	OR2L8	Olfactory receptor 2L8 (Olfactory receptor 2L8)	OR2L8	312	30.30	107.25	44.00	69.27	17.25	31.68	77.95	46.15
Rho-Olf	OR2L13 OR2L14	Olfactory receptor 2L13 (Olfactory receptor 2L13)	OR2LD	312	36.35	121.83	45.85	109.06	16.50	19.13	70.50	72.55
Rho-Olf	OR2M2	Olfactory receptor 2M2 (OST423)	OR2M2	347	23.55	51.85	39.10	59.73	43.75	15.59	39.90	15.11
Rho-Olf	OR2M3 OR2M3P	Olfactory receptor 2M3 (Olfactory receptor 2M3)	OR2M3	312	78.65	155.49	98.20	957.74	14.40	25.10	27.85	22.02
Rho-Olf	OR2M4	Olfactory receptor 2M4 (HTPCRHO)	OR2M4	311	36.70	76.25	51.90	55.18	52.70	19.63	94.45	34.04
Rho-Olf	OR2M5 OR2M5P	Olfactory receptor 2M5 (Olfactory receptor 2M5)	OR2M5	312	67.15	160.33	96.30	498.56	17.95	19.63	52.60	17.81
Rho-Olf	OR2M7	Olfactory receptor 2M7 (Olfactory receptor 2M7)	OR2M7	312	25.35	150.98	82.75	257.71	18.40	33.50	96.30	55.58
Rho-Olf	OR2S2	Olfactory receptor 2S2 (Olfactory receptor 2S2)	OR2S1	319	48.10	94.29	97.45	550.73	46.05	32.24	96.30	155.78
Rho-Olf	OR2T1	Olfactory receptor 2T1 (Olfactory receptor 2T1)	OR2T1	369	33.10	75.58	46.80	70.31	22.00	36.61	72.80	146.09
Rho-Olf	OR2T2 OR2T2P	Olfactory receptor 2T2 (Olfactory receptor 2T2)	OR2T2	324	53.40	174.98	94.45	464.52	19.55	34.74	93.30	105.59
Rho-Olf	OR2T3	Olfactory receptor 2T3 (Olfactory receptor 2T3)	OR2T3	318	38.45	236.51	59.75	131.93	48.75	98.84	98.00	543.57
Rho-Olf	OR2T4	Olfactory receptor 2T4 (Olfactory receptor 2T4)	OR2T4	348	12.95	133.75	30.55	90.52	10.80	29.64	26.35	22.74
Rho-Olf	OR2T5	Olfactory receptor 2T5 (Olfactory receptor 2T5)	OR2T5	315	71.95	120.02	98.10	549.76	25.30	29.91	84.30	38.76
Rho-Olf	OR2T6 OR2T6P	Olfactory receptor 2T6 (OST703)	OR2T6	308	35.00	140.80	56.75	106.18	38.25	21.13	67.70	28.33
Rho-Olf	OR2T7 OR2T7P	Olfactory receptor 2T7 (OST723)	OR2T7	308	31.85	81.36	56.40	78.02	35.70	22.55	92.65	56.59
Rho-Olf	OR2T8 OR2T8P	Olfactory receptor 2T8 (Olfactory receptor 2T8)	OR2T8	312	32.10	72.64	53.45	67.74	38.45	29.77	89.50	26.27
Rho-Olf	OR2V1	Olfactory receptor 2V1 (Olfactory receptor 2V1)	OR2V1	315	69.60	107.62	97.55	614.16	32.05	26.20	92.85	33.78
Rho-Olf	OR2V2 OR2V3	Olfactory receptor 2V2 (Olfactory receptor 2V2)	OR2V2	315	27.05	91.88	40.15	74.08	14.60	20.15	39.85	21.59
Rho-Olf	OR2W1	Olfactory receptor 2W1 (Hs6M1-1)	OR2W1	320	42.35	93.86	93.70	401.43	41.95	22.09	93.00	64.66
Rho-Olf	OR2W3 OR2W3P	Olfactory receptor 2W3 (Olfactory receptor 2W3)	OR2W3	314	31.55	76.23	67.65	73.37	20.35	30.91	74.20	38.45
Rho-Olf	OR2W5 OR2W5P	Putative olfactory receptor 2W5 (Olfactory receptor 2W5)	OR2W5	320	25.40	220.38	91.55	512.87	16.00	28.04	88.40	115.09
Rho-Olf	OR2W6P OR2W6P	Putative olfactory receptor 2W6 (Olfactory receptor 2W6)	OR2W6	318	18.15	106.34	69.75	677.44	33.10	16.92	96.15	48.73
Rho-Olf	OR2Y1	Olfactory receptor 2Y1 (Olfactory receptor 2Y1)	OR2Y1	311	26.50	78.09	39.70	69.97	37.05	23.38	89.30	82.88
Rho-Olf	OR2Z1 OR2Z2	Olfactory receptor 2Z1 (Olfactory receptor 2Z1)	OR2Z1	314	57.80	74.67	95.25	1,002.21	27.15	24.12	86.25	45.54
Rho-Olf	OR3A1 OLFRA03	Olfactory receptor 3A1 (Olfactory receptor 3A1)	OR3A1	315	42.85	72.90	93.40	783.51	15.90	23.77	62.05	25.25

Table S1. Comprehensive Protein Expression Data for 826 GPCRs

Family	Gene_names	Protein_names	Target name	WT-aa-count	Nt_BRIL constructs				ICL3_BRIL constructs			
					surface(%)	surface density	total(%)	total density	surface(%)	surface density	total(%)	total density
Rho-Olf	OR3A2 OLFRA04	Olfactory receptor 3A2 (Olfactory)	OR3A2	321	22.45	130.02	92.00	818.21	17.15	27.92	42.60	18.93
Rho-Olf	OR3A3 OR3A6 C	Olfactory receptor 3A3 (Olfactory)	OR3A3	321	53.00	67.55	95.05	1,092.87	20.75	23.63	68.25	26.75
Rho-Olf	OR3A4P OR3A4	Putative olfactory receptor 3A4 (	OR3A4	348	17.35	229.15	88.80	649.98	33.20	17.84	88.90	70.44
Rho-Olf	OR4A4P	Putative olfactory receptor 4A4 (	OR4A4	299	43.50	83.58	4.30	60.88	10.55	19.44	50.10	28.39
Rho-Olf	OR4A5	Olfactory receptor 4A5 (Olfactory)	OR4A5	315	21.25	65.90	48.30	61.14	11.35	19.25	16.35	16.36
Rho-Olf	OR4A8P OR4A8	Putative olfactory receptor 4A8 (	OR4A8	315	29.35	144.74	91.75	399.45	34.05	25.93	87.20	37.00
Rho-Olf	OR4B1	Olfactory receptor 4B1 (OST208)	OR4B1	309	30.35	62.87	56.00	64.98	34.00	22.34	93.80	63.49
Rho-Olf	OR4C3	Olfactory receptor 4C3 (Olfactory)	OR4C3	302	51.00	151.08	92.75	283.71	38.15	23.68	73.95	155.35
Rho-Olf	OR4C5	Olfactory receptor 4C5 (Olfactory)	OR4C5	326	32.65	121.12	80.15	137.97	39.00	35.99	71.15	59.50
Rho-Olf	OR4C6	Olfactory receptor 4C6 (Olfactory)	OR4C6	309	34.75	74.68	87.40	447.69	40.55	17.32	80.65	32.08
Rho-Olf	OR4C11 OR4C11	Olfactory receptor 4C11 (Olfacto)	OR4CB	310	59.95	69.14	96.50	515.12	20.65	31.32	86.40	45.47
Rho-Olf	OR4C12	Olfactory receptor 4C12 (Olfacto)	OR4CC	309	63.20	206.11	69.85	122.97	16.45	18.09	84.85	40.91
Rho-Olf	OR4C13	Olfactory receptor 4C13 (Olfacto)	OR4CD	309	62.65	162.24	96.40	782.55	18.50	32.21	79.75	36.99
Rho-Olf	OR4C15	Olfactory receptor 4C15 (Olfacto)	OR4CF	316	67.55	144.50	95.25	388.41	13.40	39.05	60.40	43.78
Rho-Olf	OR4C16	Olfactory receptor 4C16 (Olfacto)	OR4CG	310	35.30	104.18	50.60	86.10	46.10	31.83	74.75	74.56
Rho-Olf	OR4D1 OR4D3	Olfactory receptor 4D1 (Olfactory)	OR4D1	310	72.45	113.10	93.85	973.12	13.80	37.09	61.50	58.26
Rho-Olf	OR4D2	Olfactory receptor 4D2 (B-lymph)	OR4D2	307	61.30	302.29	72.35	231.51	17.70	24.03	95.80	71.94
Rho-Olf	OR4D5	Olfactory receptor 4D5 (Olfactory)	OR4D5	318	28.95	108.44	35.20	111.16	15.15	33.24	95.75	80.70
Rho-Olf	OR4D6	Olfactory receptor 4D6 (Olfactory)	OR4D6	314	9.45	122.85	24.65	93.05	57.05	48.79	78.15	307.06
Rho-Olf	OR4D9	Olfactory receptor 4D9 (Olfactory)	OR4D9	314	27.70	129.47	57.35	86.16	17.25	30.74	54.25	20.52
Rho-Olf	OR4D10 OR4D10	Olfactory receptor 4D10 (Olfacto)	OR4DA	311	29.10	55.92	52.50	48.59	42.25	26.17	90.05	51.51
Rho-Olf	OR4D11 OR4D11	Olfactory receptor 4D11	OR4DB	311	26.25	93.52	61.35	93.84	47.40	13.02	28.00	35.99
Rho-Olf	OR4E1 OR4E1P	Olfactory receptor 4E1 (Olfactory)	OR4E1	316	24.90	100.76	92.80	389.63	36.55	19.03	82.50	68.31
Rho-Olf	OR4E2	Olfactory receptor 4E2 (Olfactory)	OR4E2	313	28.50	57.79	51.10	56.02	13.25	24.79	5.40	67.96
Rho-Olf	OR4F3; OR4F16;	Olfactory receptor 4F3/4F16/4F2	OR4F3	312	19.65	50.01	39.00	59.80	39.65	37.33	50.05	31.45
Rho-Olf	OR4F4	Olfactory receptor 4F4 (HS14a-1-	OR4F4	305	10.65	80.15	27.60	70.65	8.75	75.71	45.05	31.34
Rho-Olf	OR4F5	Olfactory receptor 4F5	OR4F5	305	23.45	59.54	46.75	70.30	19.00	30.37	12.25	35.43
Rho-Olf	OR4F6 OR4F12	Olfactory receptor 4F6 (Olfactory)	OR4F6	312	73.90	99.63	97.50	413.30	16.70	43.65	10.60	21.57
Rho-Olf		Putative olfactory receptor GPCR	OR4FL	273	44.30	116.95	94.50	634.97	32.50	35.35	70.55	40.69
Rho-Olf	OR4K1	Olfactory receptor 4K1 (Olfactory)	OR4K1	311	21.30	45.22	33.70	45.81	14.85	28.43	96.40	58.85
Rho-Olf	OR4K2	Olfactory receptor 4K2 (Olfactory)	OR4K2	314	24.50	179.18	55.10	105.62	9.45	16.87	13.40	17.02
Rho-Olf	OR4K3 OR4K3P	Olfactory receptor 4K3 (Olfactory)	OR4K3	315	25.60	79.48	31.25	73.26	16.40	33.19	63.35	72.29
Rho-Olf	OR4K5	Olfactory receptor 4K5 (Olfactory)	OR4K5	323	46.15	107.44	58.20	75.70	56.85	25.16	96.70	67.96
Rho-Olf	OR4K13	Olfactory receptor 4K13 (Olfacto)	OR4KD	304	30.40	71.58	46.05	67.37	23.15	23.73	91.00	47.59
Rho-Olf	OR4K14	Olfactory receptor 4K14 (Olfacto)	OR4KE	310	44.75	90.11	95.65	426.24	25.10	26.02	91.00	63.03
Rho-Olf	OR4K15	Olfactory receptor 4K15 (Olfacto)	OR4KF	348	27.05	137.92	78.15	167.93	6.45	55.36	30.70	21.79
Rho-Olf	OR4K17	Olfactory receptor 4K17 (Olfacto)	OR4KH	315	71.90	136.78	95.95	430.18	46.75	14.30	52.70	19.86
Rho-Olf	OR4L1 OR4L2P	Olfactory receptor 4L1 (Olfactory)	OR4L1	312	62.90	194.60	97.65	785.73	43.00	15.77	64.05	17.94
Rho-Olf	OR4M1	Olfactory receptor 4M1 (Olfactory)	OR4M1	313	13.15	65.51	28.15	53.63	17.30	48.07	47.40	32.61
Rho-Olf	OR4M2	Olfactory receptor 4M2 (Olfactory)	OR4M2	313	49.85	110.24	95.95	671.89	21.45	22.39	91.70	35.27

Table S1. Comprehensive Protein Expression Data for 826 GPCRs

Family	Gene_names	Protein_names	Target name	WT-aa-count	Nt_BRIL constructs				ICL3_BRIL constructs			
					surface(%)	surface density	total(%)	total density	surface(%)	surface density	total(%)	total density
Rho-Olf	OR4N2	Olfactory receptor 4N2 (Olfactory receptor 4N2)	OR4N2	307	49.35	63.48	92.40	584.73	49.35	63.48	92.40	584.73
Rho-Olf	OR4N4	Olfactory receptor 4N4 (Olfactory receptor 4N4)	OR4N4	316	17.50	97.15	33.90	59.30	50.05	19.62	96.20	43.28
Rho-Olf	OR4N5	Olfactory receptor 4N5 (Olfactory receptor 4N5)	OR4N5	308	39.00	48.55	91.35	131.95	22.65	15.56	62.30	25.45
Rho-Olf	OR4P4 OR4P3P	Olfactory receptor 4P4 (Olfactory receptor 4P4)	OR4P4	312	59.95	99.52	94.20	327.80	16.55	14.88	4.50	16.10
Rho-Olf	OR4Q2 OR4Q2P	Olfactory receptor 4Q2 (Olfactory receptor 4Q2)	OR4Q2	313	13.75	67.13	30.15	63.33	14.50	36.12	93.70	84.58
Rho-Olf	OR4Q3 C14orf11	Olfactory receptor 4Q3 (Olfactory receptor 4Q3)	OR4Q3	313	56.10	119.96	96.35	518.72	27.70	29.73	61.00	29.95
Rho-Olf	OR4S1	Olfactory receptor 4S1 (Olfactory receptor 4S1)	OR4S1	309	22.35	105.24	38.40	75.82	30.60	34.82	57.95	30.03
Rho-Olf	OR4S2 OR4S2P	Olfactory receptor 4S2 (Olfactory receptor 4S2)	OR4S2	311	62.85	239.17	78.75	197.77	15.95	24.44	67.50	74.36
Rho-Olf	OR4X1	Olfactory receptor 4X1 (Olfactory receptor 4X1)	OR4X1	305	45.45	71.90	96.15	387.55	8.15	40.52	56.25	62.31
Rho-Olf	OR4X2	Olfactory receptor 4X2 (Olfactory receptor 4X2)	OR4X2	303	59.05	157.63	65.90	144.33	11.45	17.75	55.70	39.17
Rho-Olf	OR5A1 OR5A1P	Olfactory receptor 5A1 (OST181)	OR5A1	315	66.60	124.51	97.25	768.19	40.30	83.51	86.80	127.18
Rho-Olf	OR5A2	Olfactory receptor 5A2 (Olfactory receptor 5A2)	OR5A2	324	67.40	79.71	96.20	949.26	27.20	21.04	72.70	69.69
Rho-Olf	OR5B2	Olfactory receptor 5B2 (OST073)	OR5B2	309	37.20	124.72	91.85	346.94	28.60	31.76	36.40	19.60
Rho-Olf	OR5B3 OR5B13	Olfactory receptor 5B3 (Olfactory receptor 5B3)	OR5B3	314	39.90	66.55	96.75	479.46	4.05	38.85	83.60	26.78
Rho-Olf	OR5B12 OR5B12C	Olfactory receptor 5B12 (Olfactory receptor 5B12)	OR5BC	314	34.50	62.74	92.45	754.39	33.45	16.90	77.10	42.79
Rho-Olf	OR5B17 OR5B20	Olfactory receptor 5B17 (Olfactory receptor 5B17)	OR5BH	314	44.05	99.50	56.70	90.62	18.10	18.73	58.15	43.41
Rho-Olf	OR5B21	Olfactory receptor 5B21	OR5BL	309	17.85	167.59	91.45	581.28	7.45	21.33	19.25	27.15
Rho-Olf	OR5C1 OR5C2P	Olfactory receptor 5C1 (Olfactory receptor 5C1)	OR5C1	320	35.65	159.40	95.75	895.73	33.00	25.45	79.55	44.79
Rho-Olf	OR5D13	Olfactory receptor 5D13 (Olfactory receptor 5D13)	OR5DD	314	30.35	113.84	89.10	481.51	19.75	21.73	28.90	17.87
Rho-Olf	OR5D14	Olfactory receptor 5D14 (Olfactory receptor 5D14)	OR5DE	314	65.80	136.77	97.95	576.19	40.15	24.55	91.85	60.67
Rho-Olf	OR5D16	Olfactory receptor 5D16 (Olfactory receptor 5D16)	OR5DG	328	16.05	100.50	88.85	370.21	57.05	33.40	93.05	391.78
Rho-Olf	OR5D18	Olfactory receptor 5D18 (Olfactory receptor 5D18)	OR5DI	313	45.70	56.48	94.95	705.39	28.45	20.11	59.90	18.16
Rho-Olf	OR5F1	Olfactory receptor 5F1 (Olfactory receptor 5F1)	OR5F1	314	34.70	188.99	50.75	112.36	50.55	17.58	85.50	33.88
Rho-Olf	OR5G3 OR5G3P	Olfactory receptor 5G3 (Olfactory receptor 5G3)	OR5G3	314	50.90	102.60	61.45	72.30	53.85	16.14	90.05	38.55
Rho-Olf	OR5H1	Olfactory receptor 5H1 (HTPCRX1)	OR5H1	313	18.55	82.29	40.05	64.57	36.15	29.76	44.65	30.11
Rho-Olf	OR5H2	Olfactory receptor 5H2 (Olfactory receptor 5H2)	OR5H2	314	26.20	93.16	40.65	79.66	34.10	34.63	95.80	133.14
Rho-Olf	OR5H6	Olfactory receptor 5H6 (Olfactory receptor 5H6)	OR5H6	325	33.60	105.98	93.40	306.68	31.55	31.83	86.90	89.85
Rho-Olf	OR5I1 OLF1	Olfactory receptor 5I1 (Olfactory receptor 5I1)	OR5I1	314	30.40	103.13	55.60	88.22	10.00	27.83	81.20	37.77
Rho-Olf	OR5J2	Olfactory receptor 5J2 (Olfactory receptor 5J2)	OR5J2	312	33.45	57.99	74.05	147.95	22.75	49.42	79.15	38.17
Rho-Olf	OR5K1	Olfactory receptor 5K1 (HTPCRX1)	OR5K1	308	55.65	206.58	59.80	139.85	19.80	43.50	71.10	184.24
Rho-Olf	OR5K2	Olfactory receptor 5K2 (Olfactory receptor 5K2)	OR5K2	316	60.10	64.05	96.90	537.33	25.85	22.28	74.65	48.75
Rho-Olf	OR5K3	Olfactory receptor 5K3	OR5K3	321	14.15	68.36	71.80	625.84	9.55	48.93	49.40	42.26
Rho-Olf	OR5K4	Olfactory receptor 5K4	OR5K4	321	23.65	149.31	36.10	99.53	29.25	19.31	50.05	17.81
Rho-Olf	OR5L1	Olfactory receptor 5L1 (OST262)	OR5L1	311	42.20	288.37	97.10	896.42	43.55	20.27	80.30	40.89
Rho-Olf	OR5L2	Olfactory receptor 5L2 (HTPCRX1)	OR5L2	311	44.90	152.30	94.90	676.72	45.90	39.30	90.05	206.82
Rho-Olf	OR5M1	Olfactory receptor 5M1 (OST050)	OR5M1	315	32.80	79.29	89.60	421.25	11.60	20.92	48.30	19.73
Rho-Olf	OR5M3	Olfactory receptor 5M3 (Olfactory receptor 5M3)	OR5M3	307	63.15	72.59	97.10	677.85	28.70	27.10	82.05	42.73
Rho-Olf	OR5M8	Olfactory receptor 5M8 (Olfactory receptor 5M8)	OR5M8	311	59.15	84.90	97.55	547.01	34.90	26.17	83.75	47.49
Rho-Olf	OR5M9	Olfactory receptor 5M9 (Olfactory receptor 5M9)	OR5M9	310	33.35	46.44	90.75	326.77	23.30	17.10	78.75	53.79
Rho-Olf	OR5M10	Olfactory receptor 5M10 (Olfactory receptor 5M10)	OR5MA	315	24.10	162.17	41.15	93.45	11.15	37.93	61.25	55.03

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Family	Gene_names	Protein_names	Target name	WT-aa-count	Nt_BRIL constructs				ICL3_BRIL constructs			
					surface(%)	surface density	total(%)	total density	surface(%)	surface density	total(%)	total density
Rho-Olf	OR5M11	Olfactory receptor 5M11	OR5MB	305	56.90	76.82	97.25	522.79	10.60	22.67	42.70	43.69
Rho-Olf	OR5P2	Olfactory receptor 5P2 (Olfactory	OR5P2	322	35.40	103.21	96.25	600.37	7.30	44.03	54.00	34.23
Rho-Olf	OR5P3	Olfactory receptor 5P3 (Olfactory	OR5P3	311	53.30	45.66	96.45	503.56	11.65	47.18	84.05	72.10
Rho-Olf	OR5R1 OR5R1P	Olfactory receptor 5R1 (Olfactory	OR5R1	324	28.50	186.98	95.60	653.12	8.75	38.84	74.95	57.05
Rho-Olf	OR5T1 OR5T1P	Olfactory receptor 5T1 (Olfactory	OR5T1	326	47.90	67.88	95.75	533.08	15.35	26.20	56.25	18.64
Rho-Olf	OR5T2	Olfactory receptor 5T2 (Olfactory	OR5T2	359	45.60	73.93	95.70	670.31	21.00	14.55	83.10	32.38
Rho-Olf	OR5T3	Olfactory receptor 5T3 (Olfactory	OR5T3	340	31.90	52.10	84.40	136.46	6.50	23.63	72.40	21.36
Rho-Olf	OR5V1	Olfactory receptor 5V1 (Hs6M1-2	OR5V1	321	21.30	43.09	75.85	126.49	58.45	29.01	91.75	97.98
Rho-Olf	OR5W2 OR5W2	Olfactory receptor 5W2 (Olfactory	OR5W2	310	33.65	51.81	88.25	421.46	8.65	33.33	71.10	25.77
Rho-Olf	OR6A2 OR6A1 C	Olfactory receptor 6A2 (Olfactory	OR6A2	327	44.65	110.44	93.60	631.20	34.55	19.32	87.75	65.68
Rho-Olf	OR6B1	Olfactory receptor 6B1 (Olfactory	OR6B1	311	18.95	195.19	35.35	77.05	42.25	34.53	88.10	55.08
Rho-Olf	OR6B2 OR6B2P	Olfactory receptor 6B2 (Olfactory	OR6B2	312	42.55	140.64	90.40	439.42	17.65	18.54	83.50	24.86
Rho-Olf	OR6B3 OR6B3P	Olfactory receptor 6B3 (Olfactory	OR6B3	331	33.10	61.39	87.85	267.64	19.70	24.67	61.15	23.13
Rho-Olf	OR6C1	Olfactory receptor 6C1 (OST267)	OR6C1	312	50.20	73.29	95.90	345.48	10.25	36.80	33.25	24.37
Rho-Olf	OR6C2	Olfactory receptor 6C2 (HSA3)	OR6C2	312	28.85	71.77	53.80	53.67	10.00	18.70	69.45	48.22
Rho-Olf	OR6C3	Olfactory receptor 6C3 (HSA8)	OR6C3	311	48.15	161.70	94.25	463.55	39.10	11.83	52.75	13.81
Rho-Olf	OR6C4	Olfactory receptor 6C4 (Olfactory	OR6C4	309	43.70	66.02	91.40	217.88	24.90	31.30	89.20	52.79
Rho-Olf	OR6C6	Olfactory receptor 6C6	OR6C6	314	9.50	107.60	25.30	83.59	14.90	30.13	91.00	39.32
Rho-Olf	OR6F1	Olfactory receptor 6F1 (Olfactory	OR6F1	308	49.35	251.12	60.20	166.79	15.10	18.81	58.10	47.92
Rho-Olf	OR6J1 OR6J2	Olfactory receptor 6J1 (Olfactory	OR6J1	347	26.75	67.29	57.55	58.67	16.65	26.52	72.05	91.09
Rho-Olf	OR6K2	Olfactory receptor 6K2 (Olfactory	OR6K2	324	33.45	70.43	47.95	76.23	37.95	25.52	95.20	96.38
Rho-Olf	OR6K3	Olfactory receptor 6K3 (Olfactory	OR6K3	331	52.30	74.39	97.35	488.63	5.60	27.47	82.85	36.30
Rho-Olf	OR6K6	Olfactory receptor 6K6 (Olfactory	OR6K6	343	27.85	127.74	47.20	86.37	23.55	19.47	46.65	19.10
Rho-Olf	OR6M1	Olfactory receptor 6M1 (Olfactory	OR6M1	313	21.30	43.09	75.85	126.49	33.85	20.68	83.05	34.80
Rho-Olf	OR6N1	Olfactory receptor 6N1	OR6N1	312	75.10	122.65	97.45	888.91	5.90	28.86	14.60	27.78
Rho-Olf	OR6N2	Olfactory receptor 6N2 (Olfactory	OR6N2	317	55.05	47.96	95.75	193.97	48.00	24.50	59.15	25.61
Rho-Olf	OR6P1	Olfactory receptor 6P1 (Olfactory	OR6P1	317	51.30	174.86	68.95	131.72	22.30	35.34	61.75	29.35
Rho-Olf	OR6Q1	Olfactory receptor 6Q1 (Olfactory	OR6Q1	317	57.35	95.44	66.65	94.33	28.45	21.71	91.40	40.88
Rho-Olf	OR6S1	Olfactory receptor 6S1 (Olfactory	OR6S1	331	65.20	80.90	97.45	463.00	23.65	47.49	60.05	50.60
Rho-Olf	OR6T1	Olfactory receptor 6T1 (Olfactory	OR6T1	323	41.65	81.12	95.50	456.60	34.50	24.46	89.65	55.73
Rho-Olf	OR6V1	Olfactory receptor 6V1 (Olfactory	OR6V1	313	19.40	97.96	42.90	85.82	11.90	18.64	75.50	22.68
Rho-Olf	OR6X1	Olfactory receptor 6X1 (Olfactory	OR6X1	312	33.55	61.92	56.95	75.26	24.50	23.39	38.20	19.37
Rho-Olf	OR6Y1 OR6Y2	Olfactory receptor 6Y1 (Olfactory	OR6Y1	325	40.85	163.88	95.95	548.60	40.50	25.48	91.75	43.96
Rho-Olf	OR7A2P OR7A2	Putative olfactory receptor 7A2 (	OR7A2	310	65.90	67.18	96.70	969.74	29.55	21.26	75.20	73.35
Rho-Olf	OR7A5	Olfactory receptor 7A5 (Olfactory	OR7A5	319	24.50	218.91	90.45	920.38	21.00	25.65	58.85	56.64
Rho-Olf	OR7A10	Olfactory receptor 7A10 (OST027	OR7AA	309	48.80	96.67	96.50	590.19	14.60	31.80	82.80	69.23
Rho-Olf	OR7A17	Olfactory receptor 7A17	OR7AH	309	31.20	150.94	92.55	365.71	18.35	32.43	18.65	89.98
Rho-Olf	OR7C1 OR7C4	Olfactory receptor 7C1 (Olfactory	OR7C1	320	16.65	92.67	35.75	70.23	13.25	41.57	45.50	26.09
Rho-Olf	OR7C2 OR7C3	Olfactory receptor 7C2 (Olfactory	OR7C2	319	23.60	146.87	41.65	120.37	12.60	22.29	69.35	67.89
Rho-Olf	OR7D2	Olfactory receptor 7D2 (HTPCRH	OR7D2	312	45.25	160.46	66.05	130.69	20.45	30.31	81.35	37.94

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					surface(%)	surface density	total(%)	total density	surface(%)	surface density	total(%)	total density
Rho-Olf	OR7D4 OR7D4P	Olfactory receptor 7D4 (OR19-B)	OR7D4	312	25.35	155.98	78.15	359.27	37.90	16.86	76.85	34.65
Rho-Olf	OR7G1 OR7G1P	Olfactory receptor 7G1 (Olfactory)	OR7G1	311	15.35	60.85	26.85	54.24	24.40	23.20	61.85	29.32
Rho-Olf	OR7G2	Olfactory receptor 7G2 (OST260)	OR7G2	324	31.85	65.76	52.95	85.34	35.35	24.83	95.60	82.88
Rho-Olf	OR7G3	Olfactory receptor 7G3 (OST085)	OR7G3	312	52.10	171.17	89.25	238.04	29.40	19.50	4.10	24.83
Rho-Olf	OR8A1	Olfactory receptor 8A1 (OST025)	OR8A1	326	52.10	110.54	92.70	248.19	26.00	32.37	72.05	43.66
Rho-Olf	OR8B2	Olfactory receptor 8B2 (Olfactory)	OR8B2	313	45.20	66.10	88.70	137.45	38.30	25.57	72.15	60.59
Rho-Olf	OR8B3	Olfactory receptor 8B3 (Olfactory)	OR8B3	313	68.75	129.71	98.15	906.35	34.65	63.24	87.65	92.58
Rho-Olf	OR8B4 OR8B4P	Olfactory receptor 8B4 (Olfactory)	OR8B4	309	52.70	132.00	94.95	290.52	12.50	23.20	75.00	66.12
Rho-Olf	OR8B8	Olfactory receptor 8B8 (Olfactory)	OR8B8	311	45.75	82.30	93.55	380.91	34.70	32.96	87.95	85.89
Rho-Olf	OR8B12	Olfactory receptor 8B12 (Olfactory)	OR8BC	310	66.50	87.02	96.90	740.40	41.90	28.96	84.65	72.79
Rho-Olf	OR8D1 OR8D3	Olfactory receptor 8D1 (OST004)	OR8D1	308	51.20	107.45	66.90	72.05	57.45	33.70	96.90	169.79
Rho-Olf	OR8D2	Olfactory receptor 8D2 (Olfactory)	OR8D2	311	26.45	135.37	91.40	888.74	56.10	24.66	89.25	77.64
Rho-Olf	OR8D4	Olfactory receptor 8D4 (Olfactory)	OR8D4	314	52.60	114.92	97.30	581.10	36.05	20.40	79.10	94.03
Rho-Olf	OR8G1 OR8G1P	Olfactory receptor 8G1 (Olfactory)	OR8G1	311	61.95	126.13	96.50	460.34	28.05	35.15	61.65	31.74
Rho-Olf	OR8G2 OR8G2P	Olfactory receptor 8G2 (Olfactory)	OR8G2	310	21.30	43.09	75.85	126.49	20.40	68.43	94.70	125.71
Rho-Olf	OR8G5 OR8G5P	Olfactory receptor 8G5 (Olfactory)	OR8G5	311	33.65	141.68	49.05	111.42	24.15	34.09	73.90	56.00
Rho-Olf	OR8H1	Olfactory receptor 8H1 (Olfactory)	OR8H1	311	12.80	88.28	22.20	77.75	19.85	35.17	93.60	285.55
Rho-Olf	OR8H2	Olfactory receptor 8H2 (Olfactory)	OR8H2	312	21.90	41.75	37.75	55.34	13.25	35.51	92.10	172.80
Rho-Olf	OR8H3	Olfactory receptor 8H3 (Olfactory)	OR8H3	312	9.30	76.40	72.40	218.67	48.80	23.67	78.85	210.14
Rho-Olf	OR8I2	Olfactory receptor 8I2 (Olfactory)	OR8I2	310	23.55	114.50	34.15	125.43	16.65	18.03	86.80	28.99
Rho-Olf	OR8J1	Olfactory receptor 8J1 (Olfactory)	OR8J1	316	45.10	56.28	94.20	159.89	59.65	45.78	94.10	201.73
Rho-Olf	OR8J2 OR8J2P	Olfactory receptor 8J2	OR8J2	315	23.50	102.56	36.35	87.74	20.40	48.72	96.85	112.58
Rho-Olf	OR8J3	Olfactory receptor 8J3 (Olfactory)	OR8J3	315	75.50	146.12	97.25	984.62	46.95	62.79	91.90	159.40
Rho-Olf	OR8K1	Olfactory receptor 8K1 (Olfactory)	OR8K1	319	64.75	227.07	95.55	722.62	21.55	46.91	91.90	85.04
Rho-Olf	OR8K3	Olfactory receptor 8K3 (Olfactory)	OR8K3	312	25.25	91.43	91.45	810.45	55.50	19.42	91.20	110.08
Rho-Olf	OR8K5	Olfactory receptor 8K5 (Olfactory)	OR8K5	307	17.00	177.29	39.85	113.56	20.70	23.78	73.90	26.50
Rho-Olf	OR8S1	Olfactory receptor 8S1	OR8S1	359	55.60	74.14	89.95	183.95	40.70	27.58	84.65	57.63
Rho-Olf	OR8U1	Olfactory receptor 8U1	OR8U1	309	57.30	270.35	91.35	517.63	15.50	35.68	93.50	75.02
Rho-Olf	OR8U8	Olfactory receptor 8U8	OR8U8	319	17.00	165.68	33.20	94.14	18.40	21.07	57.70	23.40
Rho-Olf	OR8U9	Olfactory receptor 8U9	OR8U9	309	24.00	133.78	50.40	172.89	46.10	24.63	96.10	71.76
Rho-Olf	OR9A1P OR9A1	Putative olfactory receptor 9A1 (	OR9A1	263	31.95	168.98	51.75	100.23	39.20	15.62	85.35	104.56
Rho-Olf	OR9A2	Olfactory receptor 9A2 (Olfactory)	OR9A2	310	62.85	175.71	93.35	236.74	33.20	23.63	84.05	38.47
Rho-Olf	OR9A4	Olfactory receptor 9A4 (Olfactory)	OR9A4	314	30.05	101.68	41.50	109.48	8.50	87.08	73.30	47.31
Rho-Olf	OR9G1 OR9G5	Olfactory receptor 9G1 (Olfactory)	OR9G1	305	32.60	148.30	91.90	494.88	22.50	19.90	43.70	27.67
Rho-Olf	OR9G4	Olfactory receptor 9G4 (Olfactory)	OR9G4	327	57.55	166.06	92.25	228.77	17.20	32.51	39.80	21.22
Rho-Olf	OR9G9	Olfactory receptor 9G9	OR9G9	305	25.45	66.71	50.90	78.00	4.70	58.18	6.00	16.70
Rho-Olf	OR9I1	Olfactory receptor 9I1 (Olfactory)	OR9I1	314	38.60	65.67	46.05	47.62	34.60	16.45	71.75	21.29
Rho-Olf	OR9K2	Olfactory receptor 9K2 (Olfactory)	OR9K2	335	60.20	129.41	91.15	205.03	45.55	44.90	87.25	117.56
Rho-Olf	OR9Q1	Olfactory receptor 9Q1	OR9Q1	310	54.85	114.39	94.70	969.12	30.80	20.43	50.00	17.10
Rho-Olf	OR9Q2 OR9Q2P	Olfactory receptor 9Q2	OR9Q2	314	26.70	76.31	57.90	72.94	15.25	21.70	24.25	26.94

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Family	Gene_names	Protein_names	Target name	WT-aa-count	Nt_BRIL constructs				ICL3_BRIL constructs			
					surface(%)	surface density	total(%)	total density	surface(%)	surface density	total(%)	total density
Rho-Olf	YI035_HUMAN	Putative olfactory receptor ENSP	YI035	320	33.55	170.35	46.50	90.16	29.80	31.17	69.85	214.36
Secretin	CALCR	Calcitonin receptor (CT-R)	CALCR	490	48.00	33.83	69.75	71.75	44.60	56.69	90.90	272.63
Secretin	CALCRL CGRPR	Calcitonin gene-related peptide t	CALRL	461	51.70	38.85	83.95	109.05	47.30	65.12	86.35	285.92
Secretin	CRHR1 CRFR CR	Corticotropin-releasing factor re	CRFR1	444	66.15	26.22	63.55	41.54	72.75	64.23	88.50	379.74
Secretin	CRHR2 CRF2R CF	Corticotropin-releasing factor re	CRFR2	411	64.20	37.67	71.30	72.97	74.40	63.34	91.15	366.92
Secretin	GHRHR	Growth hormone-releasing horm	GHRHR	423	46.55	28.68	60.10	50.66	92.95	87.37	93.50	240.85
Secretin	GIPR	Gastric inhibitory polypeptide re	GIPR	466	62.85	52.74	67.05	73.81	69.15	91.77	93.65	552.05
Secretin	GLP1R	Glucagon-like peptide 1 receptor	GLP1R	463	48.15	191.47	96.05	526.39	61.90	36.12	94.70	390.21
Secretin	GLP2R	Glucagon-like peptide 2 receptor	GLP2R	553	83.45	56.86	98.05	289.13	79.95	55.91	96.50	454.73
Secretin	GCGR	Glucagon receptor (GL-R)	GLR	477	61.70	129.20	97.95	812.95	76.45	87.20	92.95	364.48
Secretin	GPR157	Probable G-protein coupled rece	GP157	335	49.00	193.13	96.40	403.56	83.50	214.09	98.00	1,008.88
Secretin	ADCYAP1R1	Pituitary adenylate cyclase-activa	PACR	468	43.55	94.25	86.65	210.96	68.80	33.53	86.75	170.08
Secretin	PTH1R PTHR PT	Parathyroid hormone/parathyroi	PTH1R	593	68.25	78.20	96.05	464.32	76.65	47.19	93.35	312.46
Secretin	PTH2R PTHR2	Parathyroid hormone 2 receptor	PTH2R	550	37.95	124.17	71.55	168.17	52.25	23.21	94.70	183.50
Secretin	SCTR	Secretin receptor (SCT-R)	SCTR	440	82.95	109.59	93.25	670.27	86.05	55.39	84.75	538.89
Secretin	VIPR1	Vasoactive intestinal polypeptide	VIPR1	457	76.10	96.22	94.40	189.40	85.20	65.81	93.30	376.71
Secretin	VIPR2 VIP2R	Vasoactive intestinal polypeptide	VIPR2	438	77.95	481.97	69.85	344.24	89.50	88.17	91.70	508.94
Glutamate	CASR GPCR2A P	Extracellular calcium-sensing rec	CASR	1078	95.55	300.04	83.20	368.95	90.35	76.05	91.80	421.15
Glutamate	GABBR1 GPRC3A	Gamma-aminobutyric acid type I	GABR1	961	15.65	180.84	80.50	1,081.00	16.10	25.00	94.20	177.81
Glutamate	GABBR2 GPR51	Gamma-aminobutyric acid type I	GABR2	941	50.85	95.04	90.55	588.89	22.05	27.27	92.45	1,421.65
Glutamate	GPR156 GABAB1	Probable G-protein coupled rece	GP156	814	51.65	73.64	86.35	209.32	71.55	58.40	92.40	547.79
Glutamate	GPR158 KIAA111	Probable G-protein coupled rece	GP158	1215	95.20	338.52	74.10	200.29	90.20	97.12	84.05	308.92
Glutamate	GPR179 GPR158	Probable G-protein coupled rece	GP179	2367	42.55	131.10	94.40	836.43	36.80	26.48	92.60	1,063.37
Glutamate	GPRC5B RAIG2	G-protein coupled receptor famil	GPC5B	403	94.65	230.89	89.00	451.29	13.35	54.31	80.60	112.08
Glutamate	GPRC5C RAIG3 F	G-protein coupled receptor famil	GPC5C	441	96.40	216.00	83.60	303.72	51.45	34.82	96.60	976.30
Glutamate	GPRC5D	G-protein coupled receptor famil	GPC5D	345	96.35	401.57	86.05	522.25	89.85	74.67	88.45	422.86
Glutamate	GPRC6A	G-protein coupled receptor famil	GPC6A	926	30.50	50.82	70.00	254.77	23.70	42.39	91.45	786.95
Glutamate	GRM1 GPRC1A	Metabotropic glutamate recepto	GRM1	1194	54.40	84.15	91.85	444.45	54.15	46.04	89.80	677.67
Glutamate	GRM2 GPRC1B M	Metabotropic glutamate recepto	GRM2	872	92.30	100.26	85.40	313.66	43.70	38.69	91.60	1,404.69
Glutamate	GRM3 GPRC1C M	Metabotropic glutamate recepto	GRM3	879	95.90	118.52	93.95	400.44	67.35	37.71	92.50	1,072.46
Glutamate	GRM4 GPRC1D M	Metabotropic glutamate recepto	GRM4	912	36.05	166.09	92.05	769.16	40.80	63.93	88.90	1,478.02
Glutamate	GRM5 GPRC1E M	Metabotropic glutamate recepto	GRM5	1212	43.15	72.23	75.65	427.15	47.20	49.80	89.90	465.23
Glutamate	GRM6 GPRC1F M	Metabotropic glutamate recepto	GRM6	877	37.00	110.55	84.90	673.38	41.95	52.22	92.25	1,146.17
Glutamate	GRM7 GPRC1G M	Metabotropic glutamate recepto	GRM7	915	21.10	33.63	1.25	115.24	23.55	84.83	92.00	722.59
Glutamate	GRM8 GPRC1H M	Metabotropic glutamate recepto	GRM8	908	40.85	90.56	83.60	730.17	17.60	97.68	92.60	977.58
Glutamate	GPRC5A GPCR5A	Retinoic acid-induced protein 3 (	RAI3	357	93.95	237.05	84.40	347.20	43.80	40.84	92.95	511.91
Glutamate	TAS1R1 GPR70 T	Taste receptor type 1 member 1	TS1R1	841	43.45	92.31	74.20	711.48	33.20	80.27	59.55	228.06
Glutamate	TAS1R2 GPR71 T	Taste receptor type 1 member 2	TS1R2	839	93.25	161.27	75.30	274.74	41.50	68.40	81.80	619.46

Table S1. Comprehensive Protein Expression Data for 826 GPCRs

Family	Gene_names	Protein_names	Target name	WT-aa-count	Nt_BRIL constructs				ICL3_BRIL constructs			
					surface(%)	surface density	total(%)	total density	surface(%)	surface density	total(%)	total density
Glutamate	TAS1R3 T1R3 TR	Taste receptor type 1 member 3	TS1R3	852	65.05	145.52	76.65	233.04	54.80	865.22	62.55	1,199.49
Fz/Tas	FZD1	Frizzled-1 (Fz-1) (hFz1) (FzE1)	FZD1	647	96.05	217.67	93.65	323.06	40.90	119.24	68.40	337.68
Fz/Tas	FZD10	Frizzled-10 (Fz-10) (hFz10) (FzE7)	FZD10	581	77.50	105.19	76.20	331.84	74.20	69.38	86.25	512.30
Fz/Tas	FZD2	Frizzled-2 (Fz-2) (hFz2) (FzE2)	FZD2	565	72.40	75.05	91.55	301.21	44.70	100.57	82.35	446.54
Fz/Tas	FZD3	Frizzled-3 (Fz-3) (hFz3)	FZD3	666	85.50	59.60	91.40	538.70	44.90	39.12	65.70	201.69
Fz/Tas	FZD4	Frizzled-4 (Fz-4) (hFz4) (FzE4) (CD	FZD4	537	91.75	107.72	79.50	535.99	80.85	64.73	77.05	352.90
Fz/Tas	FZD5 C2orf31	Frizzled-5 (Fz-5) (hFz5) (FzE5)	FZD5	585	96.50	239.65	88.65	268.41	61.60	74.53	90.05	466.02
Fz/Tas	FZD6	Frizzled-6 (Fz-6) (hFz6)	FZD6	706	71.55	64.56	28.40	112.08	96.45	257.95	85.75	537.51
Fz/Tas	FZD7	Frizzled-7 (Fz-7) (hFz7) (FzE3)	FZD7	574	53.75	97.53	98.45	588.22	65.05	100.64	83.45	296.89
Fz/Tas	FZD8	Frizzled-8 (Fz-8) (hFz8)	FZD8	694	86.35	77.09	69.05	598.51	67.65	98.99	66.60	322.73
Fz/Tas	FZD9 FZD3	Frizzled-9 (Fz-9) (hFz9) (FzE6) (CD	FZD9	591	94.15	197.92	91.20	592.72	31.35	99.11	71.50	437.76
Fz/Tas	SMO SMOH	Smoothened homolog (SMO) (P	SMO	787	81.65	112.90	83.95	402.93	85.40	91.78	66.70	1,040.40
Fz/Tas	TAS2R10	Taste receptor type 2 member 10	T2R10	307	50.40	104.02	91.80	306.68	41.15	217.28	34.10	244.00
Fz/Tas	TAS2R13	Taste receptor type 2 member 13	T2R13	303	52.00	85.37	95.25	1,087.27	17.05	33.13	65.25	46.25
Fz/Tas	TAS2R14	Taste receptor type 2 member 14	T2R14	317	60.75	50.59	90.35	122.01	9.15	41.40	25.85	27.71
Fz/Tas	TAS2R16	Taste receptor type 2 member 16	T2R16	291	61.70	108.38	91.35	725.36	23.50	30.70	90.45	174.43
Fz/Tas	TAS2R19 TAS2R	Taste receptor type 2 member 19	T2R19	299	71.00	42.39	97.70	133.28	36.35	13.48	46.90	17.73
Fz/Tas	TAS2R20 TAS2R	Taste receptor type 2 member 20	T2R20	309	73.60	31.60	96.65	135.17	34.65	13.87	58.10	19.41
Fz/Tas	TAS2R30 TAS2R	Taste receptor type 2 member 30	T2R30	319	64.20	47.12	96.15	353.66	44.20	15.64	87.05	34.74
Fz/Tas	TAS2R31 TAS2R	Taste receptor type 2 member 31	T2R31	309	43.35	51.05	95.15	496.84	37.95	14.16	89.25	62.85
Fz/Tas	TAS2R38 PTC	Taste receptor type 2 member 38	T2R38	333	69.90	99.14	97.70	629.86	78.90	33.41	92.40	206.90
Fz/Tas	TAS2R39	Taste receptor type 2 member 39	T2R39	338	3.70	80.33	18.05	19.81	61.60	29.98	93.75	343.25
Fz/Tas	TAS2R40 GPR60	Taste receptor type 2 member 40	T2R40	323	63.00	101.83	90.00	560.34	15.05	147.85	58.25	644.40
Fz/Tas	TAS2R41	Taste receptor type 2 member 41	T2R41	307	60.10	80.50	96.90	188.35	42.55	20.58	59.50	26.90
Fz/Tas	TAS2R42 TAS2R	Taste receptor type 2 member 42	T2R42	314	63.80	86.61	96.80	569.07	51.85	16.43	78.20	26.49
Fz/Tas	TAS2R43	Taste receptor type 2 member 43	T2R43	309	38.35	52.22	37.90	42.80	40.85	14.17	75.70	22.05
Fz/Tas	TAS2R45 GPR59	Taste receptor type 2 member 45	T2R45	299	10.90	51.88	4.55	624.55	15.40	18.40	94.05	81.24
Fz/Tas	TAS2R46	Taste receptor type 2 member 46	T2R46	309	40.00	71.00	43.85	46.69	49.30	15.42	87.60	28.00
Fz/Tas	TAS2R50	Taste receptor type 2 member 50	T2R50	299	65.20	46.00	96.95	210.13	39.80	14.14	37.85	17.08
Fz/Tas	TAS2R60	Taste receptor type 2 member 60	T2R60	318	59.20	68.64	96.25	205.18	72.45	72.16	93.80	449.75
Fz/Tas	TAS2R1	Taste receptor type 2 member 1	TA2R1	299	50.40	45.60	82.65	274.50	3.45	25.07	54.45	32.65
Fz/Tas	TAS2R3	Taste receptor type 2 member 3	TA2R3	316	53.75	30.50	77.40	198.38	26.80	24.01	86.55	124.74
Fz/Tas	TAS2R4	Taste receptor type 2 member 4	TA2R4	299	47.50	74.26	87.10	233.38	4.55	24.82	71.50	75.59
Fz/Tas	TAS2R5	Taste receptor type 2 member 5	TA2R5	299	56.35	63.77	93.90	663.58	41.10	31.03	44.00	34.18
Fz/Tas	TAS2R7	Taste receptor type 2 member 7	TA2R7	318	62.65	82.32	92.50	357.14	22.40	47.87	81.65	119.18
Fz/Tas	TAS2R8	Taste receptor type 2 member 8	TA2R8	309	46.75	75.26	91.05	686.28	26.15	38.57	78.35	128.97
Fz/Tas	TAS2R9	Taste receptor type 2 member 9	TA2R9	312	37.55	97.49	81.60	125.20	46.75	75.26	91.05	686.28
Adhesion	BAI1	Brain-specific angiogenesis inhibi	BAI1	1584	45.80	180.36	94.20	697.44	10.80	50.97	9.50	35.10

Table S1. Comprehensive Protein Expression Data for 826 GPCRs

Family	Gene_names	Protein_names	Target name	WT-aa-count	Nt_BRIL constructs				ICL3_BRIL constructs			
					surface(%)	surface density	total(%)	total density	surface(%)	surface density	total(%)	total density
Adhesion	BAI2	Brain-specific angiogenesis inhibi	BAI2	1585	73.60	89.17	95.60	585.33	85.35	89.03	91.45	1,043.03
Adhesion	BAI3 KIAA0550	Brain-specific angiogenesis inhibi	BAI3	1522	92.10	236.86	97.25	843.05	96.05	153.58	96.55	1,296.29
Adhesion	CD97	CD97 antigen (Leukocyte antigen	CD97	835	68.55	121.63	87.90	294.42	20.60	34.29	75.50	250.56
Adhesion	CELSR1 CDHF9 F	Cadherin EGF LAG seven-pass G-	CEL1	3014	56.20	70.94	93.30	654.57	95.15	393.58	88.45	491.09
Adhesion	CELSR2 CDHF10	Cadherin EGF LAG seven-pass G-	CEL2	2923	92.80	243.06	85.05	614.18	91.95	222.29	67.60	550.80
Adhesion	CELSR3 CDHF11	Cadherin EGF LAG seven-pass G-	CEL3	3312	94.40	163.13	92.55	812.34	3.50	137.70	0.50	108.65
Adhesion	ELTD1 ETL UNQ	EGF, latrophilin and seven transn	ELTD1	690	53.05	51.11	90.95	194.67	62.95	35.33	92.20	303.41
Adhesion	EMR1 TM7LN3	EGF-like module-containing muc	EMR1	886	93.35	189.59	92.85	346.78	84.30	83.86	81.95	139.31
Adhesion	EMR2	EGF-like module-containing muc	EMR2	823	62.15	124.49	93.95	635.02	9.25	47.28	7.20	257.96
Adhesion	EMR3 UNQ683/	EGF-like module-containing muc	EMR3	652	84.40	108.34	93.40	474.44	44.65	47.93	63.20	105.12
Adhesion	EMR4P EMR4 G	Putative EGF-like module-contair	EMR4	457	61.75	168.53	89.05	164.09	18.55	27.49	11.15	21.02
Adhesion	GPR110 PGR19	Probable G-protein coupled rece	GP110	910	65.95	96.62	93.65	558.81	38.15	45.31	90.25	803.32
Adhesion	GPR111 PGR20	Probable G-protein coupled rece	GP111	708	25.15	148.04	36.65	71.81	22.45	28.66	83.90	170.47
Adhesion	GPR112	Probable G-protein coupled rece	GP112	3080	40.65	78.29	90.60	660.77	49.80	44.58	85.70	815.63
Adhesion	GPR113 PGR23	Probable G-protein coupled rece	GP113	1079	51.90	113.25	91.45	729.70	43.95	31.71	93.00	245.44
Adhesion	GPR114 PGR27	Probable G-protein coupled rece	GP114	528	87.40	68.26	97.60	476.01	39.05	21.71	86.55	114.56
Adhesion	GPR115 PGR18	Probable G-protein coupled rece	GP115	695	48.85	48.78	91.90	353.43	36.75	16.32	90.10	117.22
Adhesion	GPR116 KIAA071	Probable G-protein coupled rece	GP116	1346	39.85	143.12	92.00	634.84	48.75	30.71	90.15	779.39
Adhesion	GPR123 KIAA18	Probable G-protein coupled rece	GP123	560	90.90	83.07	96.15	579.28	90.75	64.89	94.05	832.12
Adhesion	GPR124 KIAA15	G-protein coupled receptor 124	GP124	1338	95.15	269.49	87.90	728.11	91.70	142.95	83.40	725.57
Adhesion	GPR125 UNQ55	Probable G-protein coupled rece	GP125	1321	61.15	66.26	74.30	268.21	56.30	42.38	79.00	443.85
Adhesion	GPR126 DREG V	G-protein coupled receptor 126	GP126	1221	57.55	95.18	93.65	622.76	66.05	50.16	95.70	930.53
Adhesion	GPR128	Probable G-protein coupled rece	GP128	797	50.85	30.36	86.35	214.53	56.65	36.38	94.15	953.70
Adhesion	GPR133 PGR25	Probable G-protein coupled rece	GP133	874	52.05	97.47	92.40	671.37	24.85	37.15	90.45	219.42
Adhesion	GPR144 PGR24	Probable G-protein coupled rece	GP144	963	5.70	49.38	2.00	36.00	28.35	25.49	86.30	94.48
Adhesion	GPR56 TM7LN4	G-protein coupled receptor 56 (P	GPR56	693	32.50	99.97	33.60	50.62	40.20	18.33	92.15	128.60
Adhesion	GPR64 HE6 TM7	G-protein coupled receptor 64 (H	GPR64	1017	67.50	58.04	93.15	460.95	43.35	29.02	94.45	455.03
Adhesion	GPR97 PGR26	Probable G-protein coupled rece	GPR97	549	49.20	66.74	85.80	137.30	78.70	22.19	94.30	103.63
Adhesion	GPR98 KIAA068	G-protein coupled receptor 98 (N	GPR98	6306	95.75	180.08	88.25	511.74	84.45	136.71	82.50	490.85
Adhesion	LPHN1 KIAA082	Latrophilin-1 (Calcium-independ	LPHN1	1474	70.80	127.23	92.30	440.39	22.65	23.70	84.70	199.08
Adhesion	LPHN2 KIAA078	Latrophilin-2 (Calcium-independ	LPHN2	1459	63.75	104.31	88.85	440.91	29.30	25.09	80.95	154.26
Adhesion	LPHN3 KIAA076	Latrophilin-3 (Calcium-independ	LPHN3	1447	87.10	87.63	91.25	293.44	56.75	56.20	84.20	157.15

Table S2. Loop lengths for receptors with surface percentage >80% (upper) and <30% (lower) for both Nt_BRIL and ICL3_BRIL constructs. Structurally determined receptors are shown in blue.

Surface percentage > 80%		Nt	ICL1	ICL2	ICL3	ECL1	ECL2	ECL3	Ct
Rhodopsin	A2A	6	5	10	12	7	38	9	106
	APJ	25	7	8	17	8	35	4	68
	MARGRE	21	6	10	5	6	12	4	29
	OPSB	31	6	10	16	9	28	7	32
	OPSD	34	6	10	16	7	28	7	29
	OPSG	50	6	11	18	6	28	5	25
	5HT4R	14	7	10	39	6	30	5	64
	PAR1	100	6	11	12	6	29	9	38
	S1P1	42	6	10	24	5	29	6	54
TRFR	22	6	11	44	6	21	5	60	
Secretin	SCTR	139	7	10	12	14	17	1	49
Glutamate	CASR	602	8	19	2	7	25	2	208
	GPC5D	20	12	8	11	4	16	11	78
	GP158	354	10	9	10	5	35	7	543
Frizzled/ Taste2	FZD4	212	10	14	8	30	19	13	42
	SMO	252	11	15	10	58	19	39	251
Adhesion	BAI3	843	23	10	70	23	16	15	332
	CELR2	2373	7	10	8	4	18	1	311
	EMR1	498	19	14	39	14	13	8	5
	GPR98	5844	5	9	5	9	25	4	152
	GPR123	10	5	19	46	6	22	4	237
	GPR124	750	10	18	52	5	13	/	426
Surface percentage <30%		Nt	ICL1	ICL2	ICL3	ECL1	ECL2	ECL3	Ct
Rhodopsin	DR5R	35	7	10	33	4	43	16	106
	MC3R	34	6	17	20	17	8	15	8
	GP132	38	6	10	7	8	15	16	70
	NPY2	49	9	7	9	6	28	7	37
Secretin	GP111	413	22	12	38	31	18	2	/
	GP144	623	22	9	43	20	15	11	23
Glutamate	mGluR7	588	10	16	9	7	29	11	65
	GABA _{B1}	589	10	16	10	12	35	8	97
Frizzled/ Taste2	T2R45	1	33	7	30	22	31	9	19

Table S3. Loop lengths for receptors with surface percentage >80% for the Nt_BRIL constructs. Structurally determined receptors are shown in blue.

Surface percentage > 80% for Nt BRIL	Nt	ICL1	ICL2	ICL3	ECL1	ECL2	ECL3	Ct	
Rhodopsin	5HT4R	14	4	9	113	6	21	10	64
	A2A	6	5	10	12	7	38	9	106
	APJ	25	7	8	17	8	35	4	68
	ADA2B	8	5	9	6	16	51	6	8
	CML1	37	6	8	8	7	39	/	39
	EDNRA	76	4	9	12	11	26	11	43
	ETNB2	97	5	9	11	6	28	11	52
	GP101	26	5	9	170	6	20	7	51
	GPC39	26	14	20	41	20	45	18	105
	GPR26	1	6	9	30	6	23	/	28
	GPR82	10	5	27	10	11	21	9	23
	GPR85	16	6	9	16	7	56	4	12
	LGR4	535	19	8	6	5	23	6	132
	MRGRD	24	4	8	9	6	6	?	27
	MARGRE	21	6	10	5	6	12	4	29
	MARGRF	41	4	8	8	8	14	?	34
	OPSB	31	6	10	16	9	28	7	32
	OPSD	34	6	10	16	7	28	7	29
	OPSG	50	6	11	18	6	28	5	25
	PAR1	100	6	11	12	6	29	9	38
PAR3	90	5	9	5	7	26	7	12	
RGR	15	16	18	23	18	24	7	23	
SIP1	42	6	10	24	5	29	6	54	
TRFR	22	5	12	36	5	22	6	60	
O10X1	41	8	19	20	24	37	10	21	
O56A4	28	8	19	20	24	36	15	16	
Secretin	GLP2R	175	6	9	7	17	9	7	114
	SCTR	139	7	10	12	14	17	1	49
Glutamate	CASR	602	8	19	2	7	25	2	208
	GPC5B	53	12	8	10	5	12	12	104
	GPC5C	47	12	8	10	7	27	11	134
	GPC5D	20	12	8	11	4	16	11	76
	GRM2	565	10	14	8	5	23	8	51
	GRM3	574	10	15	8	5	23	8	50
	GP158	354	10	9	10	5	35	7	543
	RAI3	33	14	11	15	8	26	14	89
TS1R2	563	10	15	8	5	24	6	20	
Frizzled/ Taste2	FZD1	312	6	7	7	26	19	21	26
	FZD3	195	7	6	7	27	19	14	168
	FZD4	212	10	14	8	30	19	13	42
	FZD5	168	6	8	7	23	19	8	64
	FZD8	270	6	8	9	62	19	8	90
	FZD9	224	6	8	7	25	19	17	63
SMO	252	11	15	10	58	19	39	251	
Adhesion	BAI3	843	23	10	70	23	16	15	332

CELR2	2373	7	10	8	4	18	1	311
CELR3	2536	7	9	10	5	10	/	538
EMR1	498	19	14	39	14	13	8	5
EMR3	325	17	13	36	17	14	6	18
GPR98	5844	5	9	5	9	25	4	152
GP114	213	21	10	35	19	27	4	0
LPHN3	861	5	8	6	5	14	4	343
GPR123	10	5	19	46	6	22	4	237
GPR124	750	10	18	52	5	13	/	426

Table S4. Loop lengths for receptors with surface percentage >80% for the ICL3_BRIL constructs. Structurally determined receptors are shown in blue.

Surface percentage > 80% for ICL3_BRIL	NT	ICL1	ICL2	ICL3	ECL1	ECL2	ECL3	CT
5HT1A	32	5	9	113	6	21	10	7
5HT2C	53	5	9	60	6	19	7	71
5HT4R	14	7	10	39	6	30	5	64
5HT6R	21	4	9	36	5	21	4	105
5HT7R	77	5	10	51	7	19	12	84
A2A	6	5	10	12	7	38	9	106
APJ	25	7	8	17	8	35	4	68
ACM1	21	5	9	140	6	22	5	27
ACM5	26	6	9	212	6	22	6	22
ADA1A	21	5	9	57	6	17	6	125
ADRB1	53	5	9	56	6	25	5	86
ADRB3	32	5	9	44	6	26	6	48
AGTR1	25	5	8	13	7	25	6	39
BRS3	43	5	9	15	6	26	7	55
C5AR	34	4	13	6	7	21	5	46
CCR7	52	5	10	6	5	19	10	36
CXCR1	33	7	8	7	5	20	10	29
CXCR2	45	5	12	7	5	21	8	42
DUFFY	63	11	13	16	13	20	22	28
EDNRB	97	5	9	28	6	28	11	52
GALR2	22	5	8	12	7	16	8	79
GP135	100	5	8	5	13	25	9	72
Rhodopsin								
GP153	3	5	9	21	10	55	685	206
GP162	9	5	9	58	11	20	6	254
GP173	17	5	11	25	8	54	4	17
GPBAR	11	6	8	21	7	18	11	30
GPR83	67	5	7	14	6	26	1	63
GPR87	39	6	8	/	5	18	52	40
HRH1	23	4	9	188	6	23	5	3
HRH4	11	5	8	92	5	18	7	16
LPAR1	46	7	8	14	8	19	8	37
MRGRE	21	6	10	5	6	12	4	29
NPY1R	36	6	8	13	6	29	5	48
O5AL1	44	8	22	12	19	42	13	21
OPSB	31	6	10	16	9	28	7	32
OPSD	34	6	10	16	7	28	7	29
OPSG	50	6	11	18	6	28	5	25
OPSR	49	5	9	15	7	26	7	26
PAR1	100	6	11	12	6	29	9	38
P2YR2	30	5	8	7	8	20	4	67
PD2R2	29	4	8	8	7	33	4	73
RL3R1	78	6	20	27	7	28	6	63
S1P1	42	6	10	24	5	29	6	54
S1P5	32	5	9	39	9	/	11	76
TRFR	22	5	12	36	5	22	6	60

	UR2R	45	5	8	8	6	16	4	59
	GHRHR	126	7	9	9	8	9	3	44
Secretin	GP157	40	0	10	27	5	5	16	33
	SCTR	139	7	10	12	14	17	1	49
	VIPR1	123	7	9	9	7	8	5	60
	VIPR2	139	7	8	9	11	9	4	66
	CASR	602	8	19	2	7	25	2	208
Glutamate	GP158	354	10	9	10	5	35	7	543
	GPC5D	20	12	8	11	4	16	11	78
Frizzled/ Taste2	FZD4	212	10	14	8	30	19	13	42
	FZD6	191	6	8	7	27	19	14	212
	SMO	252	11	15	10	58	19	39	251
Adhesion	BAI2	898	21	8	68	18	15	14	340
	BAI3	843	23	10	70	23	16	15	332
	CELR1	2465	5	8	9	5	14	/	310
	CELR2	2373	7	10	8	4	18	1	311
	EMR1	498	19	14	39	14	13	8	5
	GPR98	5844	5	9	5	9	25	4	152
	GPR123	10	5	19	46	6	22	4	237
	GPR124	750	10	18	52	5	13	/	426

1 10 20 30 40 50 60
 ADRB1 MGAGVLVLGASEP GNISSAAPLPDGAATAARLLVPASPPASLLPPASESPEPLSQQTATAG
 ADRB3MAPWPHENSSSLAPWPD.....LPTLAPNTANTSLGLPGVP.....WEAAA
 ADRB2MGQP GNGSAFLLAPN.....GSHAPDHDVTDQER.....DEVVVVG

70 80 90 100 110
 ADRB1 MG.LLMA.LIVLLI.VACNV.LVI.VAIA.KTP.RLQ.TITN.LFIM.SLAS.ADLVMGL.IVVP.FCA.TIV
 ADRB3 LAGALLA.LAVLAT.VGCV.LVI.VAIA.WT.RLQ.TITN.VFV.TSLA.ADLVMGL.IVVP.PAATLA
 ADRB2 MG.IVMS.LIVLA.IVFCNV.LVI.TAIA.KFB.RLQ.TITN.YF.LTSLA.CADLVMGL.IVVP.FCA.AHI

120 130 140 150 160 170
 ADRB1 VWGRWEYCSFF.CELWTS.DVLCVTASIE.TLCV.IALDRY.LA.TSP.FRYQS.LLTRARAR.GLV
 ADRB3 LIGHWPLGATG.CELWTS.DVLCVTASIE.TLCALAVDRY.LAVTNP.LRYGALVTKRCAR.TAV
 ADRB2 LMKMWTFGNFW.CEFWTS.DVLCVTASIE.TLCV.IAVDRY.FA.TSP.FKYQS.LLTKNKAR.VII

180 190 200 210 220 230
 ADRB1 CTVVAISALV.SFLPI.LMH.WWRA.ESD.EARR.CYNDPK.CCDF.VITN.RAYAIASS.VVSFYVPLC
 ADRB3 VIVVVSAAV.SFAPIMSQ.WWRV.GADA.EAQR.CHSNPR.CCAF.SMMP.YVLLSS.VSFYIPLL
 ADRB2 LMVVI.VSGLT.SFLPI.QMH.WYRA.THQ.EAINC.YANET.CCDF.FINQAYAIASS.IVSFYVPLV

240 250 260 270 280 290
 ADRB1 IMAFVYLRVFRE.AQRQV.KKID.SCER.RFLGGPARPPSPSPSPVPAPAPPPGPPRFAAAAAAT
 ADRB3 VMVAVYARVFVVA.TRQLRL.LRGELGRFPP.EESPPAPSRSLAPAPVGTCAPEGVPCAG.
 ADRB2 IMVAVYLRVFQEAQRQLQKIDKSEGRFHVQNLSQVEQ.....DQRTGHG.

300 310 320 330 340 350
 ADRB1 APLANGRAGKR.RPSRLVA.LREQ.KALK.TLGLIMGV.FTLCWL.PFFLANVVKAFHR.EIVPDR
 ADRB3RPARLLP.LREH.KALC.TLGLIMGV.FTLCWL.PFFLANVLRALGGPSLVVPGP
 ADRB2LRSSKFC.LKEH.KALK.TLGLIMGV.FTLCWL.PFFLVNIVHV.IQD.NLIRKE

360 370 380 390 400 410
 ADRB1 LFFVFNW.LGYANS.AFNPI.IYCRSPDFR.KAFQR.LLC.CARRAARRRHATHGDRPRASGCLA
 ADRB3 APLALNW.LGYANS.AFNPI.IYCRSPDFR.SAFRR.LLC.RCGR.....LPPEPCAAA
 ADRB2 VYILLNW.LGYVNS.CFNPI.IYCRSPDFR.IAFQELLC..IRR.....SSLKA

420 430 440 450 460 470
 ADRB1 RFGPPPS.PGAASDDDDDDVVGATPPAR.TLEPWA.CNNGGA.AADSDDSSLDPCRPGFASESK
 ADRB3 RPALFPP.SGVPAARS.....SPAQPR.TCORLD.GASWGV.S.....
 ADRB2 YCNGYS.SNGNTGEQSGYHVEQEKENKLI.CEDLP.GTEDFV.GHQGTVPSDNIDSQGRNCSTN

ADRB1 V...
 ADRB3
 ADRB2 DSSL

Figure S1 Sequence alignment between adrenergic receptor subfamily

Boxes with white mark represent the high conserved domain and dots represent the gap between two residues.