Statistical effects of genotype and trials effects on spontaneous exploration in the habituation/dishabituation test.

			Main effects		interaction
	Experiment	**statistical test**	**Group**	**Trial**	**Trial x Genotype interactions**
Fig. 9A	**SOM**				
	Global exploration (H1 to C3)	two-way r-m ANOVA	F(1,12)=1.67, P=0.22	F(6,72)=29.48, P<0.0001	F(6,72)=0.62, P=0.71
	H1 to H4	two-way r-m ANOVA	F(1,12)=0.672, P=0.43	F(3,36)=16.95, P<0.0001	F(3,36)=0.174, P=0.91
	H4 to C+1	two-way r-m ANOVA	F(1,12)=0.80, P=0.78	F(1,12)=10.292, P<0.01	F(1,12)=0.120, P=0.735
	H5 to C+3	two-way r-m ANOVA	F(1,12)=3.747, P=0.077	F(1,12)=68.25, P<0.0001	F(1,12)=0.198, P=0.19
Fig. 9B	**SSTR2**				
	Global exploration (H1 to C3)	two-way r-m ANOVA	F(1,13)=2.03, P=0.18	F(6,78)=5.17, P<0.001	F(6,78)=1.046, P=0.40
	H1 to H4	two-way r-m ANOVA	F(1,13)=1.342, P=0.27	F(3,39)=6.191, P<0.01	F(3,39)=0.202, P=0.89
	H4 to C+1	two-way r-m ANOVA	F(1,13)=0.368, P=0.55	F(1,13)=6.676, P<0.05	F(1,13)=0.004, P=0.95
	H5 to C+3	two-way r-m ANOVA	F(1,13)=3.041, P=0.10	F(1,13)=4.693, P<0.05	F(1,13)=2.061, P=0.17
Fig. 9C	**SSTR4**				
	Global exploration (H1 to C3)	two-way r-m ANOVA	F(1,14)=2.505, P=0.14	F(6,84)=33.764, P<0.0001	F(6,84)=0.958, P=0.46
	H1 to H4	two-way r-m ANOVA	F(1,14)=2.480, P=0.14	F(3,42)=38.661, P<0.0001	F(3,42)=0.26, P=0.85
	H4 to C+1	two-way r-m ANOVA	F(1,14)=5.258, P<0.05	F(1,14)=84.384, P<0.0001	F(1,14)=1.168, P=0.30
	H5 to C+3	two-way r-m ANOVA	F(1,14)=063, P=0.80	F(1,14)=40.171, P<0.0001	F(1,14)=0.936 P=0.35
	All WT comparison		Cohort effect	Trial effect	Cohort x Trial interaction
	WT exploration time H1 to C3		F(2,20)=14.004 P=0.0002	F(6,120)=33,377 P<0.0001	F(12,120)=3.099, P=0.0008
	WT exploration time H1 to H4		F(2,20)=12.408 P=0.0003	F(3,60)=27.453 P<0.0001	F(6,60)=5.56 P<0.0001
	WT exploration time H4 to C+1		F(2,20)=7.119 P=0.0046	F(1,20)=32.207 p<0.0001	F(2,20)=4.255 P=0.0289
	WT SOM vs WT SSTR2		*F(1,13)=8.393 P=0.0125*	*F(1,13)=7.715 P=0.0157*	*F(1,13)=0.663 P=0.43*
	WT SSTR2 vs WT SSTR4		*F(1,14)=12.662 P=0.0031*	*F(1,14)=38.210 P<0.0001*	*F(1,14)12.116 P=0.0037*
	WT exploration time H5 to C+3		F(2,20)=7.202 P=0.0044	F(1,20)=44.45 p<0.0001	F(2,20)=2.201 P=0.1368
	WT SSTR2 vs WT SSTR4		*F(1,14)=11.376 P=0.0046*	*F(1,14)=16.830) P=0.0011*	*F(1,14)=1.985 P=0.1807*

Figure 10 **Statistical analysis of the olfactometer behavioral studies of SOM cohort (7 WT, 7 SOM KO)**

				Main effects	
		Parameters	**Statistical test**	**Group**	**Session**
Fig. 10A	**Task1 learning**	**5 block-mean performance**	two-way r-m ANOVA	*F(1,11)=1.353 P=0.269	F(6,66)=24.081 P<0.0001
	Task1 learning	**Mean of the last three blocks**	one-way ANOVA Bonferroni corrected	F(1,12)=0.018 P=0.894	
Fig. 10B	**Task1 learning**	**Blocks to Criterion**	one-way ANOVA Bonferroni corrected	F(1,12)=2.185 P=0.165	
Fig. 10C	**Task1**	**Memory (21d)**	one-way ANOVA Bonferroni corrected	F(1,12)=0.064 P=0.805	
	Task2 learning	**Mean of the last three blocks**	one-way ANOVA Bonferroni corrected	F(1,12)=4.038 P=0.068	
Fig.10D2	**Detection task**	**Mean performance (10 blocks, all concentration**	three-way r-m ANOVA	F(1,12)=1.538 P=0.239	F(4,48)=9.130 P<0.0001
		Mean performance (10 blocks, 1%)	two-way r-m ANOVA	F(1,12)=0.255 P=0.623	F(9,108)=16.009 P<0.0001
		Mean performance (10 blocks, 0.1%)	two-way r-m ANOVA	F(1,12)=0.826 P=0.381	F(9,108)=2.305 P=0.021
		Mean performance (10 blocks, 0.01%)	two-way r-m ANOVA	F(1,12)=1.55 P=0.237	F(9,108)=4.225 P<0.0001
		Mean performance (10 blocks, 0.001%)	two-way r-m ANOVA	F(1,12)=3.347 P=0.092	F(9,108)=3.658 P=0.0005
		Mean performance (10 blocks, 0.0001%)	two-way r-m ANOVA	F(1,12)=3.508 P=0.086	F(9,108)=1.699 P=0.098
Fig. 10E2	**Detection task**	**Mean of the last three blocks (all concentrations**	two-way r-m ANOVA	F(1,12)=4.899 P=0.047	F(4,48)=52.637 P<0.0001
	Task3 learning	**Mean of the last three blocks**	one-way ANOVA Bonferroni corrected	F(1,12)=0.054 P=0.821	
Fig. 10F2	**Discrimination task**	**Mean performance (10 blocks, all mixtures)**	three-way r-m ANOVA	F(1,12)=0.005 P=0.945	F(3,36)=30.926 P<0.0001
Fig. 10G2	**Discrimination task**	**Mean of the last three blocks (all mixtures)**	two-way r-m ANOVA	F(1,12)=0.001 P=0.970	F(3,36)=29.018 P<0.0001

***1 WT was not included (performing above 85% , blocks #29 and #30 missing)**

Trial	**interaction**
	Group x Session F(6,66)=1.222 P=0.306
F(9,108)=11.601 P<0.0001	Group x Session F(4,48)=4.023 P=0.0068
	Group x trial F(9,108)=1.227 P=0.286
	Trial x Session F(36,432)=4.548 P<0.0001
	Group x Session xTrial F(36,432)=0.771 P=0.829
F(9,108)=0.99 P=0.453	
F(9,108)=1.168 P=0.323	
F(9,108)=1.125 P=0.035	
F(9,108)=0.469 P=0.893	
F(9,108)=0.632 P=0.768	
F(4,48)=2.033 P=0.105	
F(9,108)=3.55 P=0.0007	Group x Session F(3,36)=0.149 P=0.929
	Group x trial F(9,108)=0.499 P=0.872
	Session xTrial F(27,324)=2.981 P<0.0001
	Group x Session xTrial F(27,324)=0.614 P=0.936
F(3,36)=0.088 P=0.966	

Figure 10 **Statistical analysis of the olfactometer behavioral studies of SSTR2 cohort (8 WT, 7 SSTR2 KO)**

				Main effects		
		Parameters	**Statistical test**	**Group**	**Session**	**Trial**
Fig. 10A	**Task1 learning**	**5 block-mean performance**	two-way r-m ANOVA	F(1,13)=0.717 P=0.412	F(5,65)=60.059 P<0.0001	
	Task1 learning	**Mean of the last three blocks**	one-way ANOVA Bonferroni corrected	F(1,13)=0.273 P=0.609		
Fig. 10B	**Task1 learning**	**Blocks to Criterion**	one-way ANOVA Bonferroni corrected	F(1,13)=0.521 P=0.483		
Fig. 10C	**Task1**	**Memory (21d)**	one-way ANOVA Bonferroni corrected	F(1,13)=1.136 P=0.306		
	Task2 learning	**Mean of the last three blocks**	one-way ANOVA Bonferroni corrected	F(1,13)=0.531 P=0.134		
Fig.10D2	**Detection task**	**Mean performance (10 blocks, all concentrations)**	three-way r-m ANOVA	F(1,13)=4.576 P=0.052	F(4,52)=22.393 P<0.0001	F(9,117)=9.860 P<0.0001
		Mean performance (10 blocks, 1%)	two-way r-m ANOVA	F(1,13)=1.948 P=0.186	F(9,117)=2.364 P=0.017	
		Mean performance (10 blocks, 0.1%)	two-way r-m ANOVA	F(1,13)=5.229 P=0.039	F(9,117)=7.597 P<0.0001	
		Mean performance (10 blocks, 0.01%)	two-way r-m ANOVA	F(1,13)=5.151 P=0.041	F(9,117)=9.53 P<0.0001	
		Mean performance (10 blocks, 0.001%)	two-way r-m ANOVA	F(1,13)=5.677 P=0.033	F(9,117)=19.366 P<0.0001	
		Mean performance (10 blocks, 0.0001%)	two-way r-m ANOVA	F(1,13)=0.792 P=0.389	F(9,117)=11.33 P<0.0001	
Fig. 10E2	**Detection task**	**Mean of the last three blocks (all concentrations)**	two-way r-m ANOVA	F(1,13)=4.857 P=0.046	F(2,26)=11.334 P<0.0001	
		Mean of the last three blocks (1%)	one-way ANOVA, Bonferroni corrected	F(1,13)=0.531 P=0.479		
		Mean of the last three blocks (0.1%)	one-way ANOVA, Bonferroni corrected	F(1,13)=9.624 P=0.008		
		Mean of the last three blocks (0.01%)	one-way ANOVA, Bonferroni corrected	F(1,13)=5.95 P=0.030		
		Mean of the last three blocks (0.001%)	one-way ANOVA, Bonferroni corrected	F(1,13)=11.407 P=0.005		
		Mean of the last three blocks (0.0001%)	one-way ANOVA, Bonferroni corrected	F(1,13)=0.064 P=0.804		
	Task3 learning	**Mean of the last three blocks**	one-way ANOVA Bonferroni corrected	F(1,13)=2.967 P=0.109		
Fig. 10F2	**Discrimination task**	**Mean performance (10 blocks, all mixtures)**	three-way r-m ANOVA	F(1,13)=5.203 P=0.040	F(3,39)=66.524 P<0.0001	F(9,117)=19.532 P<0.0001
		Mean performance (10 blocks, 100/0)	two-way r-m ANOVA	F(1,13)=1.112 P=0.311	F(9,117)=4.024 P<0.0001	
		Mean performance (10 blocks, 80/20)	two-way r-m ANOVA	F(1,13)=5.513 P=0.035	F(9,117)=12.324 P<0.0001	
		Mean performance (10 blocks, 60/40)	two-way r-m ANOVA	F(1,13)=5.261 P=0.039	F(9,117)=3.456 P=0.0008	
		Mean performance (10 blocks, 55/45)	two-way r-m ANOVA	F(1,13)=0.926 P=0.354	F(9,117)=3.234 P=0.0015	
Fig. 10G2	**Discrimination task**	**Mean of the last three blocks (all mixtures)**	two-way r-m ANOVA	F(1,13)=9.677 P=0.008	F(3,39)=32.266 P<0.0001	
		Mean of the last three blocks (100/0)	one-way ANOVA, Bonferroni corrected	F(1,13)=2.967 P=0.109		
		Mean of the last three blocks (80/20)	one-way ANOVA, Bonferroni corrected	F(1,13)=7.124 P=0.019		
		Mean of the last three blocks (60/40)	one-way ANOVA, Bonferroni corrected	F(1,13)=5.248 P=0.039		
		Mean of the last three blocks (55/45)	one-way ANOVA, Bonferroni corrected	F(1,13)=1.412 P=0.256		

interaction
Group x Session F(5,65)=1.220 P=0.310
Group x Session F(4,52)=1.462 P=0.227
Group x Trial F(9,117)=1.487 P=0.161
Trial x Session F(36,468)=9.639 P<0.0001
Group x Session x Trial F(36.468)=1.640 P=0.013
Group x Session F(9,117)=0.419 P=0.923
Group x Session F(9,117)=0.752 P=0.661
Group x Session F(9,117)=2.95 P=0.003
Group x Session F(9,117)=2.493 P=0.012
Group x Session F(9,117)=1.638 P=0.112
Group x Session F(2,26)=2.898 P=0.031
Group x Session F(3,39)=0.993 P=0.406
Group x trial F(9,117)=2.099 P=0.035
Trial x Session F(27,351)=1.789 P=0.010
Group x Session x Trial F(27,351)=0.065 P=0.915
Group x Session F(9,117)=1.028 P=0.422
Group x Session F(9,117)=0.967 P=0.471
Group x SessionF(9,117)=0.865 P=0.559
Group x Session F(9,117)=1.204 P=0.299
Group x Session F(3,39)=0.594 P=0.628

Figure 10 **Statistical analysis of the olfactometer behavioral studies of SSTR4 cohort (7 WT, 7 SSTR4 KO)**

				Main effects	
		Parameters	**Statistical test**	**Group**	**Session**
	Task1 learning	**5 block-mean performance**	two-way r-m ANOVA	F(1,12)=2.163 P=0.167	F(9,108)=17.293 P<0.0001
	Task1 learning	**Mean of the last three blocks**	one-way ANOVA Bonferroni corrected	F(1,12)=1.036 P=0.329	
Fig. 10B	**Task1 learning**	**Blocks to Criterion**	one-way ANOVA Bonferroni corrected	F(1,12)=1.840 P=0.199	
Fig. 10C	**Task1**	**Memory (21d)**	one-way ANOVA Bonferroni corrected	F(1,12)=0.244 P=0.630	
	Task2 learning	**Mean of the last three blocks**	one-way ANOVA Bonferroni corrected	F(1,12)=0.187 P=0.674	
	Detection task	**Mean performance (10 blocks, all concentrations)**	three-way r-m ANOVA	F(1,12)=0.0003 P=0.986	F(3,36)=58.515 P<0.0001
Fig. 10E3	**Detection task**	**Mean of the last three blocks (all concentrations)**	two-way r-m ANOVA	F(1,12)=0.009 P=0.926	F(3,36)=60.476 P<0.0001
	Task3 learning	**Mean of the last three blocks**	one-way ANOVA Bonferroni corrected	F(1,12)=0.927 P=0.355	
	Discrimination task	**Mean performance (10 blocks, all mixtures)**	three-way r-m ANOVA	F(1,12)=0.320 P=0.581	F(3,36)=40.28 P<0.0001
Fig. 10G3	**Discrimination task**	**Mean of the last three blocks (all mixtures)**	two-way r-m ANOVA	F(1,12)=0.041 P=0.843	F(3,36)=22.66 P<0.0001

	Interaction
Trial	**Group x Session (unless specified)**
	F(9,108)=0.775 P=0.639
F(9,108)=5.875 P<0.0001	Group x Session F(3,36)=0.281 P=0.839
	Group x trial F(9,108)=0.429 P=0.917
	Trial x Session F(27,324)=1.376 P=0.105
	Group x Session x Trial F(27,234)=1.372 P=0.107
	Group x Session F(3,36)=1.121 P=0.353
F(9,108)=30.888 P<0.0001	Group x Session F(3,36)=0.164 P=0.920
	Group x trial F(9,108)=1.331 P=229
	Trial x Session F(27,324)=2.554 P<0.0001
	Group x Session x Trial F(27,234)=0.806 P=0.744
	Group x SessionF(3,36)=0.401 P=0.753

Statistical analysis of the olfactometer behavioral studies

All WT	test
Performance accuracy after Anisole/Cineole learning	one-way ANOVA (Bonferroni correction) SOM vs SSTR2
Blocks to criterion Task1	one-way ANOVA (Bonferroni correction) SOM vs SSTR2 vs SSTR4
Performance accuracy after Task2 learning	one-way ANOVA (Bonferroni correction) SOM vs SSTR2 vs SSTR4
Detection test: 10 blocks, all concentrations	three-way r-m ANOVA SOM vs SSTR2
Detection test: last 3 blocks, all concentrations	three-way r-m ANOVA SOM vs SSTR2
Performance accuracy after Task3 learning	one-way ANOVA (Bonferroni correction) SOM vs SSTR2 vs SSTR4
Discrimination test: 10 blocks, all mixtures	three-way r-m ANOVA SOM vs SSTR2 vs SSTR4
Discrimination test: last 3 blocks, all mixtures	three-way r-m ANOVA SOM vs SSTR2 vs SSTR4

Cohort effect	Session effect	Cohort x session interaction
F(1,13)=0.124 P=0.729		
F(2,19)=9.373 P=0.002 (SOM vs SSTR2 ns, SOM vs SSTR4 P=0.0001 SSTR2 vs SSTR4 P<0.0001, Bonferroni corr.)		
F(2,19)=0.482 P=0.621		
F(1,13)=0.125 P=0.729	F(4,52)=3.87 P=0.008	F(4,52)=26.068 P<0.0001
F(1,13)=0.796 P=0.389	F(4,52)=47.292 P<0.0001	F(4,52)=0.750 P=0.6119
F(2,19)=1.846 P=0.185		
F(2,19)=1.063 P=0.3651	F(3,57)=83.065 P<0.0001	F(6,57)=0.750 P=0.612
F(2,19)=3.027 P=0.072	F(3,57)=47.176 P<0.0001	F(6,57)=0.357 P=0.903