Supplementary Table 1 differential expressed olfactory genes list. VF: virgin female. MF: mated female. VM: virgin male. MM: mated male. VIRGIN: both virgin female and virgin male. MATED: both mated female and mated male. SE: specific expression. AE: absent expression.

|  |
| --- |
| Compare with VM |
|  | up (P<0.05) | down (P<0.05) | specific expression（SE） | illustration |
| MM | 66 ORs c34563\_g125 IRs c56684\_g425 IRs c52561\_g316 OBPs c54030\_g116 OBPs c51494\_g316 OBPs c51398\_g112 CSPs c57906\_g2 | 66 ORs c58677\_g466 ORs c56723\_g166 ORs c56587\_g266 ORs c56292\_g166 ORs c49472\_g166 ORs c34269\_g125 IRs c56684\_g325 IRs c50331\_g116 OBPs c57509\_g216 OBPs c55239\_g5 | 66 ORs c34563\_g166 ORs c56292\_g166 ORs c56587\_g225 IRs c56684\_g316 OBPs c51494\_g3 | MM SEMM AEVIRGIN SEMM AEMATED SE |
| VF | 66 ORs c58677\_g466 ORs c56723\_g166 ORs c56230\_g125 IRs c56684\_g425 IRs c58783\_g225 IRs c57470\_g425 IRs c56337\_g116 OBPs c49769\_g116 OBPs c45552\_g212 CSPs c53910\_g212 CSPs c53910\_g12 | 66 ORs c58590\_g466 ORs c58572\_g366 ORs c58126\_g266 ORs c57502\_g466 ORs c57424\_g166 ORs c56628\_g766 ORs c56520\_g166 ORs c55301\_g266 ORs c55179\_g266 ORs c55035\_g566 ORs c54819\_g266 ORs c54454\_g266 ORs c54445\_g466 ORs c53716\_g666 ORs c53716\_g566 ORs c53592\_g166 ORs c53086\_g366 ORs c51997\_g166 ORs c51992\_g166 ORs c49472\_g166 ORs c45801\_g166 ORs c43281\_g166 ORs c34269\_g125 IRs c58232\_g425 IRs c56493\_g225 IRs c53796\_g116 OBPs c58869\_g116 OBPs c58866\_g716 OBPs c56831\_g216 OBPs c55239\_g516 OBPs c54030\_g116 OBPs c51494\_g116 OBPs c38673\_g112 CSPs c54730\_g3 | 66 ORs c58677\_g466 ORs c49472\_g1 | VF AEVF AE |
| MF | 66 ORs c56723\_g125 IRs c56684\_g425 IRs c58783\_g225 IRs c57470\_g425 IRs c46617\_g316 OBPs c51494\_g316 OBPs c49769\_g116 OBPs c45552\_g212 CSPs c53910\_g212 CSPs c53910\_g12 | 66 ORs c58590\_g466 ORs c58572\_g366 ORs c58126\_g266 ORs c57502\_g466 ORs c57424\_g166 ORs c56628\_g766 ORs c56587\_g266 ORs c56520\_g166 ORs c55301\_g266 ORs c55179\_g266 ORs c55035\_g566 ORs c54819\_g266 ORs c54454\_g266 ORs c54445\_g466 ORs c53716\_g666 ORs c53716\_g566 ORs c53592\_g166 ORs c53272\_g166 ORs c51997\_g166 ORs c51992\_g166 ORs c51725\_g366 ORs c51119\_g166 ORs c45801\_g166 ORs c43281\_g166 ORs c34269\_g125 IRs c58232\_g425 IRs c56837\_g325 IRs c56493\_g225 IRs c53796\_g116 OBPs c58869\_g116 OBPs c58866\_g716 OBPs c56831\_g216 OBPs c55239\_g516 OBPs c54030\_g116 OBPs c51494\_g116 OBPs c38673\_g112 CSPs c55251\_g312 CSPs c54730\_g3 | 66 ORs c53272\_g166 ORs c51992\_g166 ORs c51725\_g325 IRs c46617\_g316 OBPs c51494\_g3 | MF AEMF AEMF AEMF SEMATED SE |
| Compare with VF |
|  | up (P<0.05) | down (P<0.05) | specific expression（SE） | illustration |
| MF | 66 ORs c58590\_g466 ORs c57502\_g466 ORs c53592\_g166 ORs c53272\_g166 ORs c51997\_g166 ORs c51992\_g166 ORs c51725\_g366 ORs c45801\_g166 ORs c43281\_g125 IRs c46617\_g316 OBPs c56831\_g216 OBPs c51494\_g3 | 66 ORs c58677\_g466 ORs c58301\_g166 ORs c57979\_g166 ORs c56587\_g266 ORs c51992\_g166 ORs c49472\_g125 IRs c56837\_g325 IRs c56493\_g225 IRs c56337\_g116 OBPs c45552\_g212 CSPs c55251\_g3 | 66 ORs c53272\_g166 ORs c51992\_g166 ORs c51725\_g325 IRs c46617\_g316 OBPs c51494\_g3 | MF AEMF AEMF AEMF SEMATED SE |
| VM | 66 ORs c58677\_g466 ORs c58590\_g466 ORs c58572\_g366 ORs c58126\_g266 ORs c57502\_g466 ORs c57424\_g166 ORs c56628\_g766 ORs c56520\_g166 ORs c55301\_g266 ORs c55179\_g266 ORs c55035\_g566 ORs c54819\_g266 ORs c54454\_g266 ORs c54445\_g466 ORs c53716\_g666 ORs c53716\_g566 ORs c53592\_g166 ORs c53086\_g366 ORs c51997\_g166 ORs c49472\_g166 ORs c45801\_g166 ORs c43281\_g166 ORs c34269\_g125 IRs c58232\_g425 IRs c56493\_g225 IRs c53796\_g116 OBPs c58869\_g116 OBPs c58866\_g716 OBPs c56831\_g216 OBPs c55239\_g516 OBPs c54030\_g116 OBPs c51494\_g116 OBPs c38673\_g112 CSPs c54730\_g3 | 66 ORs c56723\_g166 ORs c56230\_g125 IRs c56684\_g425 IRs c58783\_g225 IRs c57470\_g425 IRs c56337\_g116 OBPs c49769\_g116 OBPs c45552\_g212 CSPs c53910\_g212 CSPs c53910\_g12 | 66 ORs c57502\_g466 ORs c53592\_g166 ORs c51997\_g166 ORs c45801\_g166 ORs c43281\_g166 ORs c34269\_g125 IRs c56684\_g416 OBPs c56831\_g2 | MALE SEMALE SEMALE SEMALE SEMALE SEVM SEVM AEMALE SE |
| MM | 66 ORs c58677\_g466 ORs c58590\_g466 ORs c58572\_g366 ORs c58308\_g266 ORs c58126\_g266 ORs c57502\_g466 ORs c57424\_g166 ORs c57235\_g266 ORs c56628\_g766 ORs c56520\_g166 ORs c55301\_g266 ORs c55035\_g566 ORs c54819\_g266 ORs c54454\_g266 ORs c54445\_g466 ORs c53716\_g666 ORs c53592\_g166 ORs c51997\_g166 ORs c51992\_g166 ORs c51119\_g166 ORs c49472\_g166 ORs c45801\_g166 ORs c43281\_g166 ORs c34563\_g125 IRs c58509\_g225 IRs c58232\_g425 IRs c56493\_g225 IRs c55232\_g425 IRs c53796\_g125 IRs c52561\_g316 OBPs c58869\_g116 OBPs c58866\_g716 OBPs c56831\_g216 OBPs c56133\_g1916 OBPs c54030\_g116 OBPs c51494\_g316 OBPs c51494\_g116 OBPs c51398\_g116 OBPs c42610\_g116 OBPs c38673\_g112 CSPs c57906\_g212 CSPs c54730\_g312 CSPs c52288\_g1 | 66 ORs c56723\_g166 ORs c56587\_g266 ORs c56292\_g166 ORs c56230\_g125 IRs c56684\_g325 IRs c50331\_g125 IRs c58783\_g225 IRs c58271\_g225 IRs c57470\_g425 IRs c56337\_g116 OBPs c57509\_g216 OBPs c49769\_g116 OBPs c45552\_g212 CSPs c53910\_g212 CSPs c53910\_g12 | 66 ORs c58590\_g466 ORs c57502\_g466 ORs c53592\_g166 ORs c51997\_g166 ORs c45801\_g166 ORs c43281\_g166 ORs c34563\_g166 ORs c56292\_g125 IRs c56684\_g325 IRs c50331\_g116 OBPs c56831\_g216 OBPs c51494\_g3 | MALE SEMALE SEMALE SEMALE SEMALE SEMALE SEMM SEMM AEMM AEMM AEMALE SEMATED SE |