

| Odorant | Code | CAS# | Epif. est. conc. (M) | Dilution | Two-photon rel. conc. | Class |
|---------------------------|-----------|----------------|----------------------------|--------------|--------------------------|-----------------|
| propionic acid | C1 | 79-09-4 | 2E-11 | 1E-05 | 10× | acid |
| butyric acid | C2 | 107-92-6 | 2E-11 | 1E-05 | 10× | acid |
| 2-methylbutyric acid | C3 | 116-53-0 | 6E-12 | 1E-05 | 10× | acid |
| valeric acid | C4 | 109-52-4 | 6E-12 | 1E-05 | 10× | acid |
| isovaleric acid | C5 | 503-74-2 | 9E-12 | 1E-05 | 10× | acid |
| 2-methyl-2-pentenoic acid | C6 | 3142-72-1 | 4E-14 | 1E-06 | 10× | acid |
| hexanoic acid | C7 | 142-62-1 | 2E-11 | 1E-04 | 10× | acid |
| heptanoic acid | C8 | 111-14-8 | 9E-11 | 1E-03 | 10× | acid |
| <i>methacrolein</i> | <i>D1</i> | <i>78-85-3</i> | <i>1E-9</i> | <i>1E-05</i> | <i>10×</i> | <i>aldehyde</i> |
| butyraldehyde | D2 | 123-72-8 | 6E-09 | 1E-04 | 10× | aldehyde |
| isobutyraldehyde | D3 | 78-84-2 | 1E-09 | 1E-05 | 10× | aldehyde |
| 2-methylbutyraldehyde | D4 | 96-17-3 | 8E-11 | 1E-05 | 10× | aldehyde |
| trans-2-methyl-2-butenal | D5 | 497-03-0 | 1E-11 | 1E-06 | 10× | aldehyde |
| valeraldehyde | D6 | 110-62-3 | 2E-09 | 1E-04 | 10× | aldehyde |
| isovaleraldehyde | D7 | 590-86-3 | 4E-09 | 1E-04 | 1× | aldehyde |
| 2-methylvaleraldehyde | D8 | 123-15-9 | 1E-10 | 1E-05 | 10× | aldehyde |
| 2-methyl-2-pentenal | D9 | 623-36-9 | 6E-11 | 1E-05 | 1× | aldehyde |
| hexanal | D10 | 66-25-1 | 7E-10 | 1E-04 | 10× | aldehyde |
| heptanal | D11 | 111-71-7 | 3E-09 | 1E-03 | 10× | aldehyde |
| octanal | D12 | 124-13-0 | 1E-09 | 1E-03 | 10× | aldehyde |
| trans-2-nonenal | D13 | 18829-56-6 | 2E-09 | 1E-02 | 10× | aldehyde |
| trans-2,cis-6-nonadienal | D14 | 557-48-2 | 2E-09 | 1E-02 | 10× | aldehyde |
| trans-2-dodecenal | D15 | 20407-84-5 | 8E-10 | 1E-01 | 10× | aldehyde |
| 2-hexyl-2-decenal | D16 | 13893-39-5 | 5E-09 | 1E-01 | 10× | aldehyde |
| butyl acetate | E1 | 123-86-4 | 9E-10 | 1E-04 | 10× | ester |
| S-methyl thiobutanoate | E2.M1 | 2432-51-1 | 2E-10 | 1E-04 | 10× | mixed |
| isoamyl acetate | E3 | 123-92-2 | 4E-10 | 1E-04 | 10× | ester |
| hexyl acetate | E4 | 142-92-7 | 1E-09 | 1E-03 | 10× | ester |
| ethyl butyrate | E5 | 105-54-4 | 1E-09 | 1E-04 | 10× | ester |
| methyl 2-methylbutyrate | E6 | 868-57-5 | 2E-10 | 1E-05 | 10× | ester |
| vinyl butyrate | E7 | 123-20-6 | 9E-11 | 1E-05 | 10× | ester |
| methyl valerate | E8 | 624-24-8 | 8E-10 | 1E-04 | 10× | ester |
| 1-octen-3-yl butyrate | E9 | 16491-54-6 | 5E-09 | 1E-01 | 10× | ester |
| methyl tiglate | E10 | 6622-76-0 | 1E-11 | 1E-06 | 10× | ester |
| ethyl tiglate | E11 | 5837-78-5 | 2E-12 | 1E-06 | 10× | ester |
| isopropyl tiglate | E12 | 1733-25-1 | 2E-11 | 1E-05 | 10× | ester |
| hexyl tiglate | E13 | 16930-96-4 | 4E-10 | 1E-02 | 10× | ester |
| diacetyl | K1 | 431-03-8 | 4E-09 | 1E-04 | 10× | ketone |
| <i>2-butanone</i> | <i>K2</i> | <i>78-93-3</i> | <i>7E-10</i> | <i>1E-05</i> | <i>10×</i> | <i>ketone</i> |

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|--------------------------------|--------|------------|-------|-------|-----|----------------------|
| <i>2-pentanone</i> | K3 | 107-87-9 | 3E-09 | 1E-04 | 10× | <i>ketone</i> |
| 4-methyl-3-penten-2-one | K4 | 141-79-7 | 9E-10 | 1E-04 | 10× | ketone |
| 2-hexanone | K5 | 591-78-6 | 1E-09 | 1E-04 | 10× | ketone |
| 3-hepten-2-one | K6 | 1119-44-4 | 2E-09 | 1E-03 | 10× | ketone |
| 5-methyl-2-hepten-4-one | K7 | 81925-81-7 | 1E-09 | 1E-03 | 10× | ketone |
| 2-octanone | K8 | 111-13-7 | 1E-10 | 1E-04 | 10× | ketone |
| 3-octen-2-one | K9 | 1669-44-9 | 2E-10 | 1E-04 | 1× | ketone |
| 2-nonanone | K10 | 821-55-6 | 5E-10 | 1E-03 | 10× | ketone |
| 1-hexanol | L1 | 111-27-3 | 7E-10 | 1E-03 | 10× | alcohol |
| cis-3-hexenol | L2 | 928-96-1 | 8E-10 | 1E-03 | 10× | alcohol |
| geraniol | L3 | 106-24-1 | 1E-09 | 1E-02 | 10× | alcohol |
| R(-)1-octen-3-ol | L4 | 3687-48-7 | 4E-10 | 1E-03 | 10× | alcohol |
| benzaldehyde | AD1 | 100-52-7 | 8E-11 | 1E-04 | 10× | aromatic ald. |
| trans-cinnamaldehyde | AD2 | 14371-10-9 | 2E-11 | 1E-03 | 10× | aromatic ald. |
| cuminaldehyde | AD3 | 122-03-2 | 5E-11 | 1E-03 | 10× | aromatic ald. |
| p-anisaldehyde | AD4 | 123-11-5 | 8E-12 | 1E-05 | 10× | aromatic ald. |
| piperonal | AD5 | 120-57-0 | 2E-12 | 1E-03 | 1× | aromatic ald. |
| vanillin | AD6 | 121-33-5 | 3E-11 | 1E-01 | 10× | aromatic ald. |
| acetophenone | AK1 | 98-86-2 | 3E-12 | 1E-05 | 10× | aromatic ket./est. |
| 2'-hydroxyacetophenone | AK2 | 118-93-4 | 5E-12 | 1E-04 | 1× | aromatic ket./est. |
| 2,4-dimethylacetophenone | AK3 | 89-74-7 | 6E-13 | 1E-05 | 10× | aromatic ket./est. |
| 4-aminoacetophenone | AK4.M2 | 99-92-3 | 3E-10 | 1E+00 | 1× | mixed |
| 4-methylacetophenone | AK5 | 122-00-9 | 7E-12 | 1E-04 | 10× | aromatic ket./est. |
| 4-methoxyacetophenone | AK6 | 100-06-1 | 5E-13 | 1E-04 | 1× | aromatic ket./est. |
| 2-methylacetophenone | AK7 | 577-16-2 | 1E-12 | 1E-05 | 10× | aromatic ket./est. |
| propiophenone | AK8 | 93-55-0 | 1E-11 | 1E-04 | 1× | aromatic ket./est. |
| butyrophenone | AK9 | 495-40-9 | 6E-12 | 1E-04 | 10× | aromatic ket./est. |
| 4-phenyl-2-butanone | AK10 | 2550-26-7 | 5E-11 | 1E-03 | 10× | aromatic ket./est. |
| 4-(4-hydroxyphenyl)-2-butanone | AK11 | 5471-51-2 | 8E-11 | 1E-01 | 10× | aromatic ket./est. |
| methyl salicylate | AE1 | 119-36-8 | 4E-11 | 1E-03 | 1× | aromatic ket./est. |
| methyl benzoate | AE2 | 93-58-3 | 3E-11 | 1E-04 | 10× | aromatic ket./est. |
| benzyl acetate | AE3 | 140-11-4 | 1E-10 | 1E-03 | 10× | aromatic ket./est. |
| ethyl benzoate | AE4 | 93-89-0 | 2E-11 | 1E-04 | 10× | aromatic ket./est. |
| benzyl benzoate | AE5 | 120-51-4 | 4E-11 | 1E-01 | 10× | aromatic ket./est. |
| methyl anthranilate | AE6.M3 | 134-20-3 | 1E-13 | 1E-05 | 10× | mixed |
| dimethyl anthranilate | AE7.M4 | 85-91-6 | 2E-11 | 1E-03 | 10× | mixed |
| phenylacetate | AE8 | 122-79-2 | 3E-12 | 1E-05 | 10× | aromatic ket./est. |
| ethyl phenylacetate | AE9 | 101-97-3 | 7E-11 | 1E-03 | 1× | aromatic ket./est. |
| allyl phenylacetate | AE10 | 1797-74-6 | 2E-11 | 1E-03 | 10× | aromatic ket./est. |
| phenyl propionate | AE11 | 637-27-4 | 1E-11 | 1E-04 | 10× | aromatic ket./est. |
| m-cresol | AP1 | 108-39-4 | 1E-10 | 1E-03 | 1× | aromatic phen./moxy. |
| carvacrol | AP2 | 499-75-2 | 2E-09 | 1E-01 | 10× | aromatic phen./moxy. |
| 4-methylanisole | AP3 | 104-93-8 | 9E-11 | 1E-04 | 10× | aromatic phen./moxy. |

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| guaiacol | AP4 | 90-05-1 | 9E-13 | 1E-05 | 1× | aromatic phen./moxy. |
| 2,6-dimethoxyphenol | AP5 | 91-10-1 | 2E-12 | 1E-03 | 1× | aromatic phen./moxy. |
| eugenol | AP6 | 97-53-0 | 7E-13 | 1E-04 | 10× | aromatic phen./moxy. |
| isoeugenol | AP7 | 97-54-1 | 8E-13 | 1E-04 | 10× | aromatic phen./moxy. |
| methyl eugenol | AP8 | 93-15-2 | 2E-12 | 1E-04 | 10× | aromatic phen./moxy. |
| methyl isoeugenol | AP9 | 93-16-3 | 8E-13 | 1E-04 | 10× | aromatic phen./moxy. |
| eugenyl acetate | AP10 | 93-28-7 | 4E-11 | 1E-02 | 10× | aromatic phen./moxy. |
| elemicin | AP11 | 487-11-6 | 5E-12 | 1E-03 | 10× | aromatic phen./moxy. |
| fenchol | CT1 | 1632-73-1 | 5E-10 | 1E-02 | 1× | cyclic terpenoid |
| 2-ethyl fenchol | CT2 | 18368-91-7 | 6E-11 | 1E-02 | 10× | cyclic terpenoid |
| alpha-pinene | CT3 | 7785-70-8 | 3E-09 | 1E-03 | 10× | cyclic terpenoid |
| isobornyl isovalerate | CT4.M5 | 7779-73-9 | 1E-09 | 1E-01 | 10× | mixed |
| 1,8-cineole | CT5 | 470-82-6 | 1E-09 | 1E-03 | 10× | cyclic terpenoid |
| L-carvone | CT6 | 6485-40-1 | 1E-10 | 1E-03 | 10× | cyclic terpenoid |
| beta-ionone | CT7 | 14901-07-6 | 1E-11 | 1E-03 | 10× | cyclic terpenoid |
| beta-damascone | CT8 | 23726-91-2 | 1E-11 | 1E-03 | 10× | cyclic terpenoid |
| damascenone | CT9 | 23696-85-7 | 2E-10 | 1E-02 | 10× | cyclic terpenoid |
| menthone | CT10 | 10458-14-7 | 3E-10 | 1E-03 | 10× | cyclic terpenoid |
| (R)-(+)-pulegone | CT11 | 89-82-7 | 7E-13 | 1E-05 | 10× | cyclic terpenoid |
| (+)-isomenthone | CT12 | 1196-31-2 | 2E-10 | 1E-03 | 10× | cyclic terpenoid |
| nootkatone | CT13 | 4674-50-4 | 9E-10 | 1E+00 | 1× | cyclic terpenoid |
| (+)-menthol | CT14 | 89-78-1 | 6E-11 | 1E-02 | 10× | cyclic terpenoid |
| (+)-neomenthol | CT15 | 2216-52-6 | 2E-10 | 1E-02 | 10× | cyclic terpenoid |
| (+)-geosmin | CT16 | 16423-19-1 | 4E-11 | 1E-01 | 10× | cyclic terpenoid |
| (-)-ambroxide | CT17 | 6790-58-5 | 7E-10 | 1E-01 | 10× | cyclic terpenoid |
| (+)-menthofuran | CT18.M6 | 17957-94-7 | 2E-10 | 1E-03 | 10× | mixed |
| 2-pentylfuran | F1 | 3777-69-3 | 2E-09 | 1E-03 | 10× | furan/pyrone/lactone |
| 5-ethyl-4-hydroxy-2-methyl-3(2H)-furanone | F2 | 27538-09-6 | 9E-13 | 1E-04 | 10× | furan/pyrone/lactone |
| 5-methylfurfural | F3 | 620-02-0 | 5E-10 | 1E-03 | 10× | furan/pyrone/lactone |
| ethyl maltol | F4 | 4940-11-8 | 1E-12 | 1E-02 | 1× | furan/pyrone/lactone |
| gamma-undecalactone | F5 | 104-67-6 | 3E-09 | 1E+00 | 1× | furan/pyrone/lactone |
| coumarin | F6 | 91-64-5 | 7E-10 | 1E-02 | 10× | furan/pyrone/lactone |
| 1-furfurylpyrrole | F7.M7 | 1438-94-4 | 1E-10 | 1E-02 | 10× | mixed |
| ethylenediamine | N1 | 107-15-3 | 1E-10 | 1E-05 | 10× | amine |
| butylamine | N2 | 109-73-9 | 6E-10 | 1E-05 | 10× | amine |
| 2-methylbutylamine | N3 | 96-15-1 | 4E-10 | 1E-05 | 10× | amine |
| N-butyl dimethylamine | N4 | 927-62-8 | 3E-10 | 1E-05 | 10× | amine |
| isopentylamine | N5 | 107-85-7 | 3E-11 | 1E-06 | 10× | amine |
| cadaverine | N6 | 462-94-2 | 7E-13 | 1E-06 | 10× | amine |
| octylamine | N7 | 111-86-4 | 7E-11 | 1E-04 | 10× | amine |
| N,N-dimethyloctylamine | N8 | 7378-99-6 | 6E-12 | 1E-05 | 10× | amine |
| cyclohexylamine | N9 | 108-91-8 | 6E-11 | 1E-05 | 10× | amine |
| N,N-dimethylcyclohexylamine | N10 | 98-94-2 | 2E-11 | 1E-05 | 10× | amine |

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| phenethylamine | N11 | 64-04-0 | 3E-13 | 1E-06 | 1× | amine |
| benzylamine | N12 | 100-46-9 | 5E-11 | 1E-04 | 10× | amine |
| <i>tyramine</i> | <i>N13</i> | <i>51-67-2</i> | <i>2E-09</i> | <i>1E+00</i> | 1× | <i>amine</i> |
| N,N-dimethyl-2-phenethylamine | N14 | 1126-71-2 | 2E-13 | 1E-06 | 10× | amine |
| 3-phenylpropylamine | N15 | 2038-57-5 | 1E-11 | 1E-04 | 10× | amine |
| N-methyl piperidine | N16 | 626-67-5 | 2E-10 | 1E-05 | 1× | amine |
| 5-methyl heptan-3-one oxime | N17.M8 | 22457-23-4 | 3E-10 | 1E-02 | 10× | mixed |
| pyrazine | P1 | 290-37-9 | 2E-09 | 1E-04 | 10× | pyrazine |
| 2-acetylpyrazine | P2 | 22047-25-2 | 1E-09 | 1E-02 | 10× | pyrazine |
| 2-methylpyrazine | P3 | 109-08-0 | 7E-11 | 1E-05 | 10× | pyrazine |
| 2-methoxypyrazine | P4 | 3149-28-8 | 3E-11 | 1E-05 | 10× | pyrazine |
| 2-ethylpyrazine | P5 | 13925-00-3 | 3E-11 | 1E-05 | 10× | pyrazine |
| 2,3-diethylpyrazine | P6 | 15707-24-1 | 6E-10 | 1E-03 | 1× | pyrazine |
| 2-chloropyrazine | P7 | 14508-49-7 | 2E-09 | 1E-03 | 10× | pyrazine |
| pyrazineethanethiol | P8 | 35250-53-4 | 4E-11 | 1E-03 | 10× | pyrazine |
| 2-methoxy-3-methylpyrazine | P9 | 2847-30-5 | 5E-11 | 1E-04 | 10× | pyrazine |
| 2-ethyl-3-methylpyrazine | P10 | 15707-23-0 | 5E-11 | 1E-04 | 10× | pyrazine |
| 2,3-dimethylpyrazine | P11 | 5910-89-4 | 3E-10 | 1E-04 | 10× | pyrazine |
| 2,5-dimethylpyrazine | P12 | 123-32-0 | 3E-10 | 1E-04 | 10× | pyrazine |
| 2,6-dimethylpyrazine | P13 | 108-50-9 | 3E-09 | 1E-03 | 10× | pyrazine |
| 2,3,5-trimethylpyrazine | P14 | 14667-55-1 | 1E-11 | 1E-05 | 10× | pyrazine |
| 2,3,5,6-tetramethylpyrazine | P15 | 1124-11-4 | 5E-10 | 1E-03 | 10× | pyrazine |
| 2-ethyl-5-methylpyrazine | P16 | 13360-64-0 | 2E-11 | 1E-05 | 10× | pyrazine |
| 2-acetyl-3-(5 or 6)-dimethylpyrazine | P17 | 54300-08-2 | 2E-09 | 1E-03 | 1× | pyrazine |
| 2-isobutyl-3-methylpyrazine | P18 | 13925-06-9 | 2E-10 | 1E-03 | 10× | pyrazine |
| 2-acetyl-3-ethylpyrazine | P19 | 32974-92-8 | 2E-10 | 1E-02 | 1× | pyrazine |
| 2-acetyl-3-methylpyrazine | P20 | 23787-80-6 | 8E-11 | 1E-03 | 10× | pyrazine |
| 2-ethyl-3-methoxypyrazine | P21 | 25680-58-4 | 1E-11 | 1E-05 | 10× | pyrazine |
| 2-methoxy-3-(5 or 6)-isopropylpyrazine | P22 | 93905-03-4 | 3E-11 | 1E-04 | 10× | pyrazine |
| 2-isobutyl-3-methoxypyrazine | P23 | 24683-00-9 | 3E-11 | 1E-03 | 10× | pyrazine |
| 2-methoxy-3-(1-methylpropyl)pyrazine | P24 | 24168-70-5 | 3E-11 | 1E-03 | 10× | pyrazine |
| 2-isopropyl-3-methoxypyrazine | P25 | 25773-40-4 | 9E-12 | 1E-04 | 10× | pyrazine |
| 5H-5-methyl-6,7-dihydrocyclopenta[b]pyrazine | P26 | 23747-48-0 | 2E-10 | 1E-03 | 1× | pyrazine |
| 5,6,7,8-tetrahydroquinoxaline | P27 | 34413-35-9 | 4E-11 | 1E-03 | 10× | pyrazine |
| 5-methylquinoxaline | P28 | 13708-12-8 | 4E-10 | 1E-02 | 10× | pyrazine |
| 2-acetylpyridine | NS1 | 1122-62-9 | 4E-11 | 1E-04 | 1× | heterocyclic N-S |
| 4-tert-butylpyridine | NS2 | 3978-81-2 | 4E-12 | 1E-05 | 10× | heterocyclic N-S |
| indole | NS3 | 120-72-9 | 9E-11 | 1E-02 | 10× | heterocyclic N-S |
| 3-methylindole | NS4 | 83-34-1 | 2E-11 | 1E-02 | 10× | heterocyclic N-S |
| 2-isobutylthiazole | NS5 | 18640-74-9 | 3E-12 | 1E-05 | 10× | heterocyclic N-S |
| 2-acetylthiazole | NS6 | 24295-03-2 | 1E-10 | 1E-03 | 10× | heterocyclic N-S |
| 2-isopropyl-4-methylthiazole | NS7 | 15679-13-7 | 3E-12 | 1E-05 | 10× | heterocyclic N-S |

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| 2-methyl-2-thiazoline | NS8 | 2346-00-1 | 4E-10 | 1E-04 | 10× | heterocyclic N-S |
| 2,4,5-trimethylthiazole | NS9 | 13623-11-5 | 5E-12 | 1E-05 | 10× | heterocyclic N-S |
| ethyl-2,5-dihydro-4-methylthiazole | NS10 | 41803-21-8 | 6E-11 | 1E-04 | 10× | heterocyclic N-S |
| 4-methylthiazole | NS11 | 693-95-8 | 8E-10 | 1E-04 | 10× | heterocyclic N-S |
| 2-methyl-4-propyl-1,3-oxathiane | NS12.M9 | 67715-80-4 | 9E-11 | 1E-03 | 1× | mixed |
| dimethyl trisulfide | S1 | 3658-80-8 | 8E-10 | 1E-03 | 10× | sulfide-thiol |
| <i>allyl disulfide</i> | <i>S2</i> | <i>2179-57-9</i> | <i>7E-10</i> | <i>1E-03</i> | <i>10×</i> | <i>sulfide-thiol</i> |
| 4-methoxy-2-methyl-2-butanethiol | S3 | 94087-83-9 | 3E-12 | 1E-06 | 10× | sulfide-thiol |
| methional | S4.M10 | 3268-49-3 | 1E-11 | 1E-05 | 10× | mixed |
| 3-mercaptohexyl acetate | S5 | 136954-20-6 | 4E-12 | 1E-04 | 10× | sulfide-thiol |
| 3-(methylthio)-1-hexanol | S6 | 51755-66-9 | 6E-09 | 1E-02 | 10× | sulfide-thiol |
| furfuryl mercaptan | S7.M11 | 98-02-2 | 3E-12 | 1E-06 | 10× | mixed |
| difurfuryl disulfide | S8.M12 | 4437-20-1 | 4E-13 | 1E-03 | 10× | mixed |
| furfuryl methyl sulfide | S9.M13 | 1438-91-1 | 1E-09 | 1E-03 | 10× | mixed |
| 2-methyl-3-tetrahydrofuranthiol | S10 | 57124-87-5 | 2E-10 | 1E-04 | 10× | sulfide-thiol |
| myrcene | ENE1 | 123-35-3 | 2E-09 | 1E-03 | 10× | alkene |
| 1,3,5-undecatriene | ENE2 | 16356-11-9 | 5E-09 | 1E-02 | 10× | alkene |
| (R)-(+)-limonene | ENE3 | 5989-27-5 | 1E-09 | 1E-03 | 10× | alkene |
| empty | - | - | - | - | - | control |
| triglyceride | - | - | - | - | - | control |

Table 1. Odorants and estimated concentrations for functional atlas.

Code: abbreviated identifier code, used in Fig. 4C and Document S1. **Epifl. est. conc.:** estimated delivered concentration of odorant vapor, in mols/L (M), for '1x' dataset. Most commonly-presented values (of 4 preparations) are shown, reported to one significant digit precision. **Dilution:** liquid dilution of odorant used to generate delivered concentration. **Class:** nominal classification based on structural features. Odorants in italics gave no response at the given concentration in any of the 8 OBs.

| # | Odorant | Est. conc. (M) | Error ratio | Median ORS corr. | Mediolateral (μm) | Anteroposterior (μm) |
|----|------------------------------------|----------------|-------------|------------------|--------------------------------|-----------------------------------|
| 1 | benzaldehyde | 8E-11 | 0.00 | 1.00 | 1448.3 \pm 76.9 | 1298.4 \pm 82.4 |
| 2 | elemicin | 5E-12 | 0.00 | 1.00 | 1011.6 \pm 80.9 | 753.2 \pm 126.7 |
| 3 | vanillin | 3E-11 | 0.07 | 1.00 | 1249.6 \pm 54.8 | 1651 \pm 75.9 |
| 4 | trans-2-dodecenal | 8E-10 | 0.00 | 1.00 | 514.9 \pm 54.2 | 2117.5 \pm 179.5 |
| 5 | ethyl phenylacetate | 7E-11 | 0.00 | 1.00 | 884 \pm 50.5 | 1911.9 \pm 118.9 |
| | allyl phenylacetate | 1E-10 | 0.00 | 1.00 | | |
| 6 | phenylacetate | 3E-12 | 0.00 | 0.99 | 1375.6 \pm 93.3 | 1103.4 \pm 111.8 |
| | phenyl propionate | 1E-11 | 0.00 | 0.99 | | |
| 7 | heptanoic acid | 7E-11 | 0.00 | 0.97 | 1026.6 \pm 60.5 | 2132.8 \pm 54.7 |
| | heptanal | 2E-9 | 0.00 | 0.95 | | |
| 8 | methional | 1E-11 | 0.00 | 1.00 | 1680.2 \pm 99.6 | 1144.1 \pm 91.3 |
| 9 | 3-mercaptohexyl acetate | 4E-12 | 0.00 | 0.97 | 1316.2 \pm 170.4 | 1244.5 \pm 67.3 |
| | trans-2-methyl-2-butenal | 1E-11 | 0.00 | 0.95 | | |
| 10 | 2-methyl-2-pentenal | 6E-11 | 0.00 | 0.95 | 700.8 \pm 79.3 | 1103.7 \pm 113.9 |
| | methyl tiglate | 1E-11 | 0.00 | 0.95 | | |
| | ethyl tiglate | 2E-12 | 0.00 | 0.95 | | |
| | isopropyl tiglate | 2E-11 | 0.00 | 0.95 | | |
| | hexyl tiglate | 4E-10 | 0.00 | 0.95 | | |
| 11 | isovaleric acid | 9E-12 | 0.00 | 0.92 | 973.5 \pm 32.4 | 1696.9 \pm 138 |
| | isovaleraldehyde | 4E-9 | 0.00 | 0.92 | | |
| 12 | 2'-hydroxyacetophenone | 5E-12 | 0.00 | 0.86 | 1258.5 \pm 66.8 | 444 \pm 68.9 |
| 13 | pyrazine | 2E-9 | 0.03 | 0.91 | 1618 \pm 54.2 | 1154.8 \pm 117.4 |
| 14 | 2-isobutyl-3-methoxypyrazine | 3E-11 | 0.04 | 0.91 | 1007.4 \pm 93.9 | 503.6 \pm 80.8 |
| | (R)-(+)-pulegone | 7E-13 | 0.04 | 0.91 | | |
| 15 | 4-(4-hydroxyphenyl)-2-butanone | 4E-10 | 0.02 | 0.84 | 1202.5 \pm 92.4 | 1771.8 \pm 66.1 |
| | 2,4,5-trimethylthiazole | 5E-12 | 0.04 | 0.91 | | |
| 16 | ethyl-2,5-dihydro-4-methylthiazole | 3E-10 | 0.04 | 0.91 | 1242.6 \pm 128.3 | 460.8 \pm 106.6 |
| 17 | 4-methoxy-2-methyl-2-butanethiol | 3E-12 | 0.07 | 0.98 | 1633.1 \pm 116.8 | 853.6 \pm 107.1 |
| | 2-methyl-3-tetrahydrofuranthiol | 2E-10 | 0.07 | 0.98 | | |
| 18 | isoeugenol | 8E-13 | 0.05 | 1.00 | 1162.9 \pm 86.7 | 746.2 \pm 105.4 |
| 19 | menthone | 3E-10 | 0.05 | 0.85 | 1058.4 \pm 76.9 | 701.8 \pm 93.8 |
| 20 | 2-hexanone | 1E-9 | 0.11 | 0.94 | 1372 \pm 98.3 | 945.6 \pm 105.8 |
| 21 | acetophenone | 1E-11 | 0.02 | 0.83 | 1317.2 \pm 81.1 | 776.9 \pm 61.6 |
| | 2-methylacetophenone | 1E-12 | 0.02 | 0.83 | | |
| 22 | methyl eugenol | 2E-12 | 0.13 | 0.90 | 1491.6 \pm 107 | 771.2 \pm 103.5 |
| | 2-methylbutyraldehyde | 8E-11 | 0.16 | 0.87 | | |
| 23 | 2-methylvaleraldehyde | 1E-10 | 0.16 | 0.87 | 928.6 \pm 38.7 | 1497.3 \pm 126.9 |
| | methyl 2-methylbutyrate | 1E-10 | 0.16 | 0.87 | | |
| 24 | hexanal | 7E-10 | 0.18 | 0.97 | 1047.7 \pm 63.7 | 1977.8 \pm 66 |
| 25 | fenchol | 5E-10 | 0.16 | 0.98 | 1251 \pm 109.5 | 795.9 \pm 76.9 |
| 26 | 5-methylfurfural | 5E-10 | 0.19 | 1.00 | 1465 \pm 67.1 | 1153.3 \pm 380.5 |

Table 2. Diagnostic odorants and concentrations for functionally-identified glomeruli.

Error ratio: Incidence of mismatch between strongest-activated glomeruli and glomeruli with most correlated odorant response spectra (ORS) across 2 OBs, divided by all potential 2-OB comparisons.

Median ORS corr.: Median ORS correlation coefficient (Pearson's r) across all pairwise comparisons of response spectra for the maximally-activated glomerulus in each responsive OB.

| # | Odorant | Est. conc. (M) | Error ratio | Median ORS corr. |
|---|--------------------------------------|-------------------|----------------|------------------------|
| - | 2,3,5-trimethylpyrazine | 1E-11 | 0.12 | 0.74 |
| - | p-anisaldehyde | 8E-12 | 0.21 | 0.93 |
| - | piperonal | 2E-12 | 0.21 | 0.93 |
| - | cadaverine | 2E-12 | 0.23 | 0.98 |
| - | furfuryl mercaptan | 3E-12 | 0.24 | 0.92 |
| - | difurfuryl disulfide | 4E-13 | 0.24 | 0.92 |
| - | 2-methyl-2-pentenoic acid | 4E-14 | 0.25 | 0.93 |
| - | 2-methylpyrazine | 7E-11 | 0.26 | 0.85 |
| - | 2-chloropyrazine | 2E-9 | 0.26 | 0.85 |
| - | damascenone | 2E-10 | 0.29 | 0.76 |
| - | N,N-dimethyloctylamine | 3E-11 | 0.32 | 1.00 |
| - | beta-damascone | 1E-11 | 0.32 | 0.81 |
| - | 2-ethyl-5-methylpyrazine | 1E-11 | 0.36 | 0.74 |
| - | 3-(methylthio)-1-hexanol | 6E-9 | 0.39 | 0.89 |
| - | benzyl benzoate | 4E-11 | 0.39 | 0.82 |
| - | 4-methylthiazole | 8E-10 | 0.39 | 0.87 |
| - | eugenol | 7E-13 | 0.40 | 0.59 |
| - | 2-methylbutyric acid | 5E-12 | 0.43 | 0.95 |
| - | beta-ionone | 7E-11 | 0.43 | 0.73 |
| - | L-carvone | 1E-10 | 0.43 | 0.66 |
| - | 2-methoxy-3-methylpyrazine | 5E-11 | 0.45 | 0.88 |
| - | 4-methylacetophenone | 7E-12 | 0.48 | 0.81 |
| - | N,N-dimethyl-2-phenethylamine | 5E-13 | 0.50 | 0.75 |
| - | N-methyl piperidine | 2E-10 | 0.50 | 0.99 |
| - | 1,3,5-undecatriene | 5E-9 | 0.50 | 0.55 |
| - | 2-methyl-2-thiazoline | 1E-9 | 0.52 | 0.83 |
| - | 4-methoxyacetophenone | 5E-13 | 0.54 | 0.83 |
| - | 2,6-dimethoxyphenol | 2E-12 | 0.54 | 1.00 |
| - | isopentylamine | 3E-11 | 0.55 | 0.67 |
| - | nootkatone | 9E-10 | 0.57 | 0.97 |
| - | champignol | 4E-10 | 0.59 | 0.50 |
| - | 2-acetyl-3,(5 or 6)-dimethylpyrazine | 2E-9 | 0.59 | 0.42 |
| - | (+)-menthofuran | 2E-10 | 0.59 | 0.61 |
| - | 2-ethyl-3-methoxypyrazine | 4E-11 | 0.61 | 0.51 |
| - | 2-octanone | 1E-10 | 0.66 | 0.62 |
| - | furfuryl methyl sulfide | 1E-9 | 0.67 | 0.20 |
| - | geraniol | 1E-9 | 0.67 | 0.29 |
| - | butyrophenone | 2E-11 | 0.70 | 0.50 |
| - | 4-methylanisole | 9E-11 | 0.75 | 0.00 |
| - | benzyl acetate | 1E-10 | 0.86 | 0.15 |

Table 3. Additional odorants and concentrations eliciting consistently sparse activation but failing conservative requirements for functional identification.