

Supplemental Table S1. Fold-change of volatiles in AS transgenics compared to EV control Navelina sweet orange mature flavedo. The level of accumulation of individual volatiles in EV flavedo was arbitrarily set to 1.0. Negative values indicate decreases and positive values reflect increases of the specific volatile with respect to the reference EV line. Data represent mean values \pm s.e.m. and are derived from at least five fruits per plant.

| Compounds | Line | | | | | | | | |
|-----------------------|---------|--------|----------|--------|--------|--------|---------|--------|------|
| | AS1 | | AS3 | | AS6 | | AS7 | | EV |
| | MEAN | S.E.M. | MEAN | S.E.M. | MEAN | S.E.M. | MEAN | S.E.M. | |
| Monoterpenes | | | | | | | | | |
| Hydrocarbons | | | | | | | | | |
| Sabinene | - 8.72 | 0.01 | - 5.71 | 0.00 | - 2.07 | 0.01 | -6.82 | 0.02 | |
| δ -3-carene | nd | | nd | | - 1.08 | 0.08 | nd | | |
| β -myrcene | - 51.02 | 0.00 | - 57.38 | 0.00 | - 1.38 | 0.01 | - 82.69 | 0.01 | |
| D-Limonene | - 90.88 | 0.00 | - 107.39 | 0.00 | - 1.33 | 0.07 | - 85.95 | 0.00 | |
| Ocimene | - 3.28 | 0.07 | - 1.84 | 0.32 | 1.63 | 0.42 | - 3.07 | 0.10 | |
| α -terpinolene | nd | | nd | | - 1.06 | 0.33 | nd | | |
| Relative (%) | 43.5 | | 45.3 | | 95.8 | | 49.7 | | 96.0 |
| Aldehydes | | | | | | | | | |
| Z-citral | - 3.02 | 0.05 | - 5.65 | 0.07 | - 1.28 | 0.16 | - 5.33 | 0.05 | |
| E-citral* | nd | | nd | | - 1.19 | 0.17 | nd | | |
| Citronellal | -1.31 | 0.21 | - 1.16 | 0.26 | -1.15 | 0.12 | -1.48 | 0.21 | |
| Perilla aldehyde | nd | | nd | | - 1.23 | 0.10 | nd | | |
| Relative (%) | 3.6 | | 3.0 | | 0.5 | | 2.7 | | 0.5 |
| Alcohols | | | | | | | | | |
| E-sabinene hydrate | - 10.07 | 0.00 | - 6.20 | 0.04 | - 1.61 | 0.07 | - 7.71 | 0.03 | |
| Z-sabinene hydrate | - 26.65 | 0.04 | - 11.64 | 0.09 | - 1.40 | 0.13 | - 3.98 | 0.02 | |
| Linalool | 1.07 | 0.27 | 1.05 | 0.02 | 1.40 | 0.36 | - 2.02 | 0.03 | |
| 1-octanol | - 1.91 | 0.29 | -1.20 | 0.35 | 1.22 | 0.37 | 1.10 | 0.32 | |
| 4-terpineol | - 4.66 | 0.04 | - 1.87 | 0.03 | - 1.42 | 0.02 | - 3.92 | 0.00 | |
| E-p-mentha-2,8-dienol | nd | | nd | | 1.64 | 0.03 | - 12.22 | 0.08 | |
| α -terpineol | - 21.23 | 0.01 | - 11.78 | 0.03 | -1.41 | 0.02 | -15.77 | 0.02 | |
| β -citronellol | 18.65 | 3.88 | 10.45 | 1.26 | 3 | 0.45 | 11.43 | 0.28 | |
| Nerol | 14.71 | 2.09 | 9.98 | 2.64 | 4.45 | 2.84 | 16.57 | 4.70 | |
| E-carveol | nd | | nd | | - 1.06 | 0.31 | nd | 0.00 | |
| Geraniol | 3.95 | 0.24 | 4.61 | 0.90 | 1.61 | 0.82 | 4.45 | 2.88 | |
| Z-carveol | nd | | nd | | 1.68 | 0.51 | nd | | |
| Relative (%) | 34.5 | | 31.7 | | 1.6 | | 21.7 | | 0.9 |
| Esters | | | | | | | | | |
| Neryl acetate* | p | | p | | nd | | p | | |
| Geranyl acetate | 3.25 | 1.47 | 3.85 | 0.87 | 1.49 | 0.60 | 3.65 | 0.92 | |
| Perilla acetate | nd | | nd | | nd | | nd | | |
| Limonen-10-yl acetate | nd | | nd | | nd | | nd | | |
| Relative (%) | 7.9 | | 7.2 | | 0.01 | | 8.3 | | 0.01 |
| Sesquiterpenes | | | | | | | | | |
| Hydrocarbons | | | | | | | | | |

| | | | | | | | | | |
|--|---------|------|---------|------|--------|------|---------|------|------|
| α-copaene | nd | | nd | | - 4.57 | 0.22 | nd | | |
| β-cubebene | nd | | nd | | - 2.36 | 0.11 | - 44.50 | 0.02 | |
| Germacrene D | nd | | nd | | - 1.81 | 0.32 | nd | | |
| β-elemene | - 3.51 | 0.00 | - 1.81 | 0.30 | 1.11 | 0.04 | - 1.30 | 0.19 | |
| α-caryophyllene | - 7.46 | 0.02 | - 11.58 | 0.03 | - 3.09 | 0.03 | - 5.33 | 0.04 | |
| β-farnesene | nd | | - 6.96 | 0.14 | - 1.86 | 0.54 | nd | | |
| Valencene | - 1.89 | 0.16 | - 1.39 | 0.35 | 1.08 | 0.24 | - 1.34 | 0.01 | |
| δ-Cadinene | - 6.08 | 0.00 | - 5.45 | 0.01 | - 1.29 | 0.00 | - 5.71 | 0.00 | |
| α-muurolene | nd | | nd | | nd | | nd | | |
| β-sesquiphellandrene | - 3.47 | 0.07 | - 1.95 | 0.24 | 1.28 | 1.01 | 1.02 | 0.04 | |
| Relative (%) | | 4 | | 5.4 | | 0.4 | | 6.7 | 0.4 |
| Aldehydes | | | | | | | | | |
| β-sinensal | - 6.27 | 0.09 | - 12.30 | 0.02 | - 2.64 | 0.07 | - 6.75 | 0.05 | |
| α-sinensal | - 4.93 | 0.03 | - 3.41 | 0.08 | 1.23 | 0.07 | - 4.46 | 0.02 | |
| Relative (%) | | 0.6 | | 0.8 | | 0.1 | | 0.7 | 0.1 |
| Alcohols | | | | | | | | | |
| d-nerolidol | nd | | nd | | - 4.32 | 0.23 | nd | | |
| Elemol | - 44.76 | 0.02 | nd | | - 2.23 | 0.21 | nd | | |
| Relative (%) | | 0.5 | | 0 | | 0.01 | | 0 | 0.02 |
| Aliphatic aldehydes | | | | | | | | | |
| Octanal | - 35.58 | 0.00 | - 38.16 | 0.00 | - 1.90 | 0.03 | - 20.34 | 0.01 | |
| Nonanal | - 15.12 | 0.00 | - 22.68 | 0.00 | - 1.90 | 0.00 | - 9.94 | 0.00 | |
| Decanal | - 10.57 | 0.02 | - 11.58 | 0.01 | - 1.44 | 0.07 | - 6.39 | 0.06 | |
| Undecanal | - 5.95 | 0.05 | - 9.62 | 0.10 | - 1.75 | 0.06 | - 5.28 | 0.05 | |
| 2-decanal | nd | | nd | | - 1.15 | 0.53 | nd | | |
| Relative (%) | | 3.3 | | 3 | | 1.3 | | 5.5 | 1.8 |
| Others/Irregular | | | | | | | | | |
| (+)-Isopiperitenone | nd | | nd | | - 1.58 | 0.63 | nd | | |
| Z-limonene oxide | nd | | nd | | 1.29 | 0.29 | nd | | |
| E-limonene oxide | - 6.07 | 0.07 | nd | | - 1.07 | 0.26 | - 7.47 | 0.13 | |
| Caryophyllene oxide | 1.11 | 0.12 | - 1.07 | 0.29 | 1.94 | 0.28 | 2.36 | 0.63 | |
| β-cyclocitral | 1.37 | 0.65 | - 1.23 | 0.26 | 1.02 | 0.51 | 1.17 | 0.83 | |
| Relative (%) | | 1.0 | | 1.2 | | 0.2 | | 1.9 | 0.2 |

nd: non-detectable

p: present (impossible to quantify fold-change because it is not present in EV plants)

* Compound differing from EV (E-citral) and AS plants (Neryl acetate)