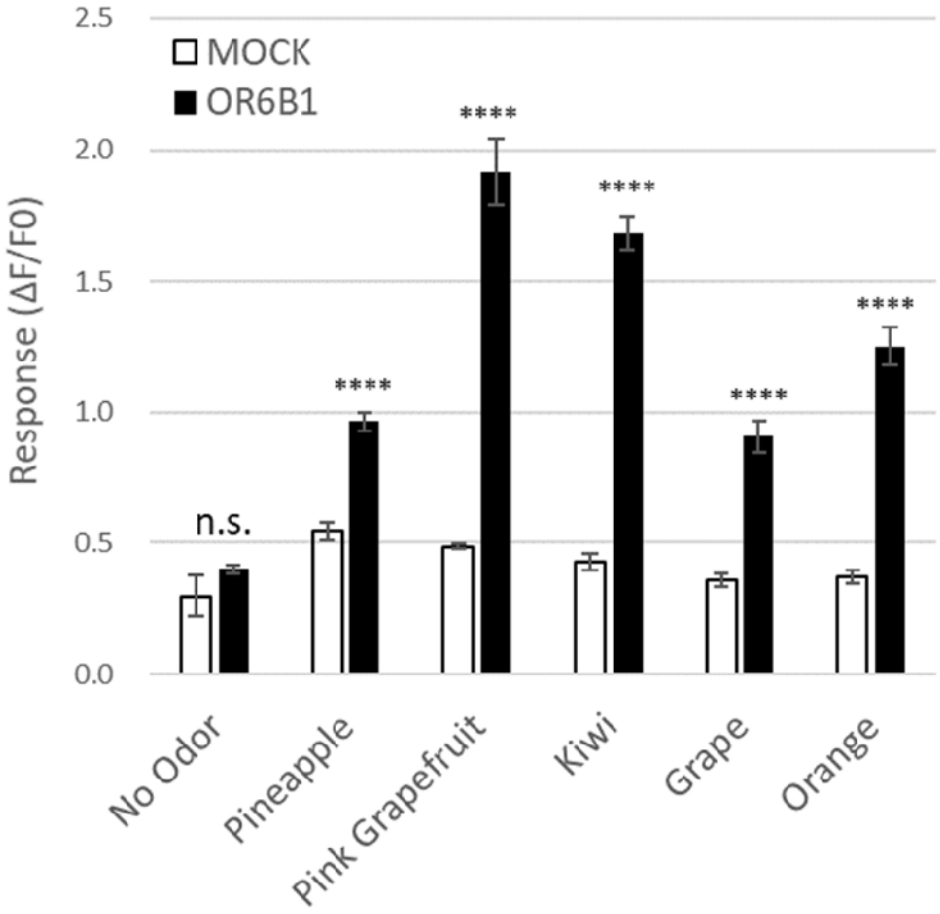
Figure 1

a)


2.5
2.0
1.5
1.0
0.5
0.0
Response (ΔF/F0)
MOCK
OR6B1
n.s.
****
****
****
****
No Odor
Pineapple
Pink Grapefruit
Kiwi
Grape
Orange

b)

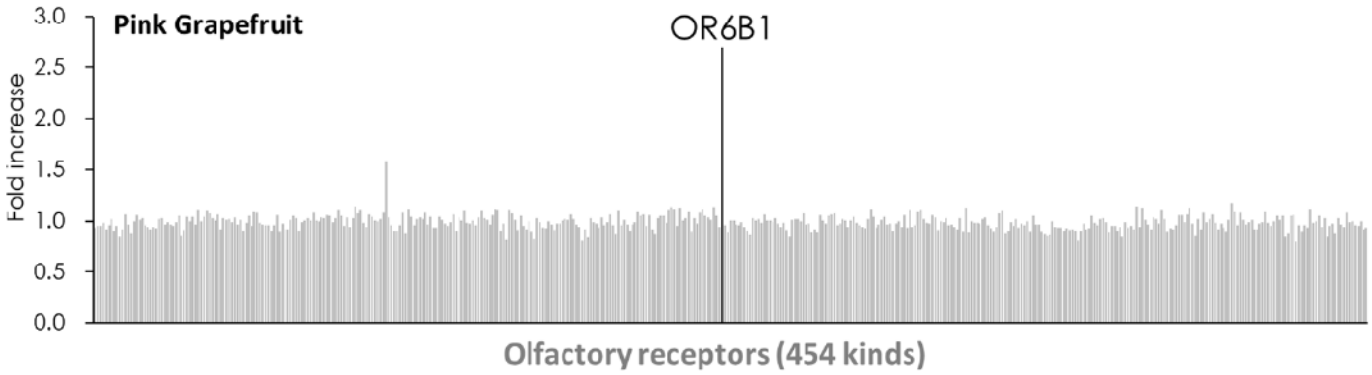

Pink Grapefruit
OR6B1
Fold increase
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Olfactory receptors (454 kinds)

Figure 2

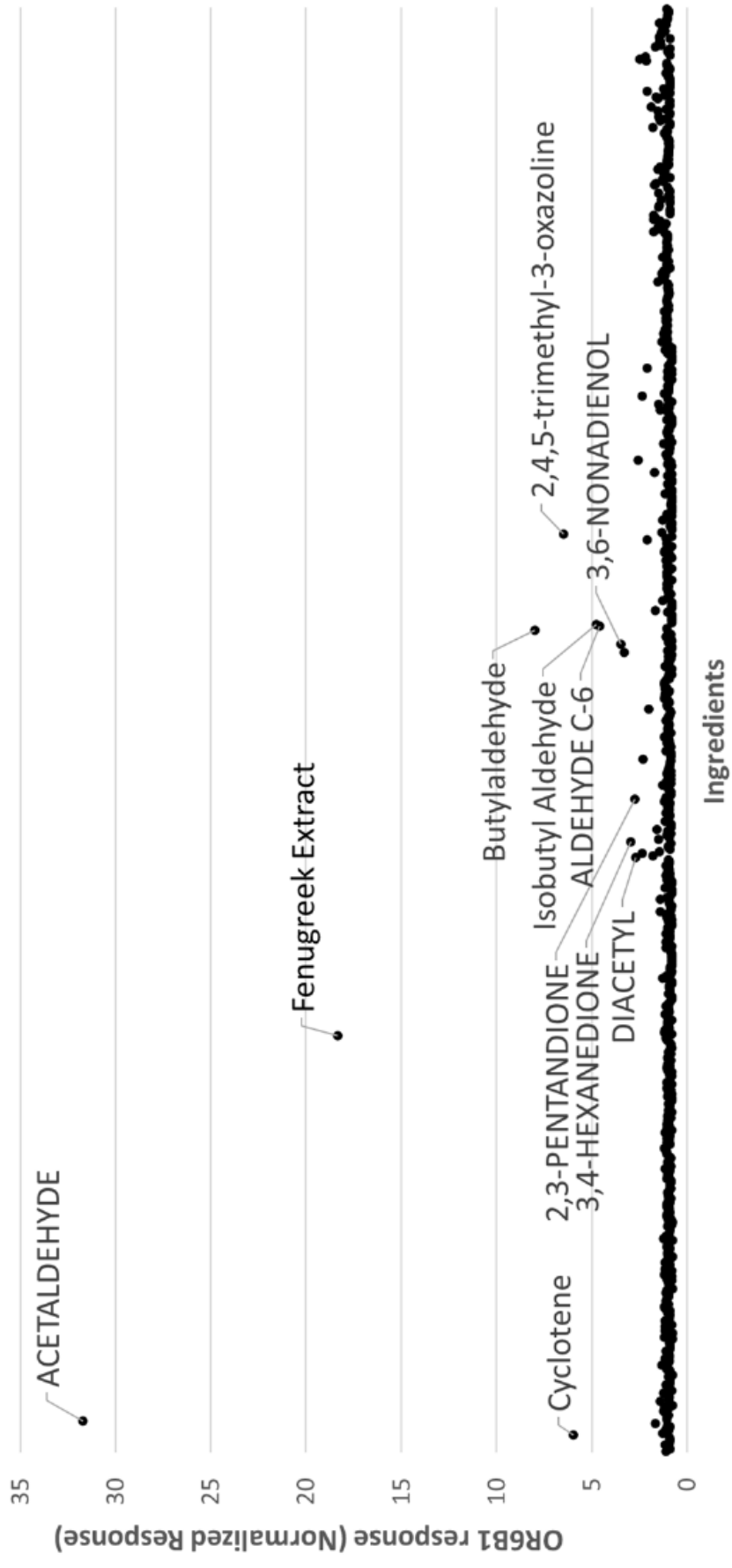

OR6B1 response (Normalized Response)
35
30
25
20
15
10
5
0
Ingredients
ACETALDEHYDE
Fenugreek Extract
Butylaldehyde
Isobutyl Aldehyde
2,4,5-trimethyl-3-oxazoline
3,6-NONADIENOL
ALDEHYDE C-6
2,3-PENTANDIONE
3,4-HEXANEDIONE
DIACETYL
Cyclotene

Figure 3

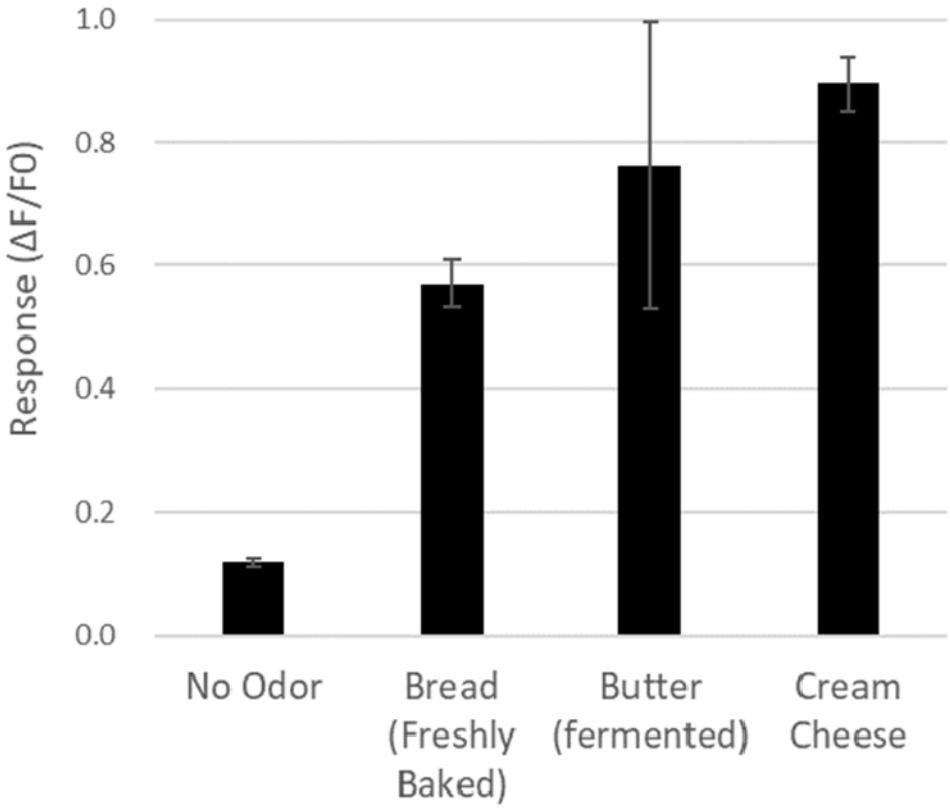

Response (ΔF/F0)
1.0
0.8
0.6
0.4
0.2
0.0
No Odor
Bread (Freshly Baked)
Butter (fermented)
Cream Cheese

Figure 4

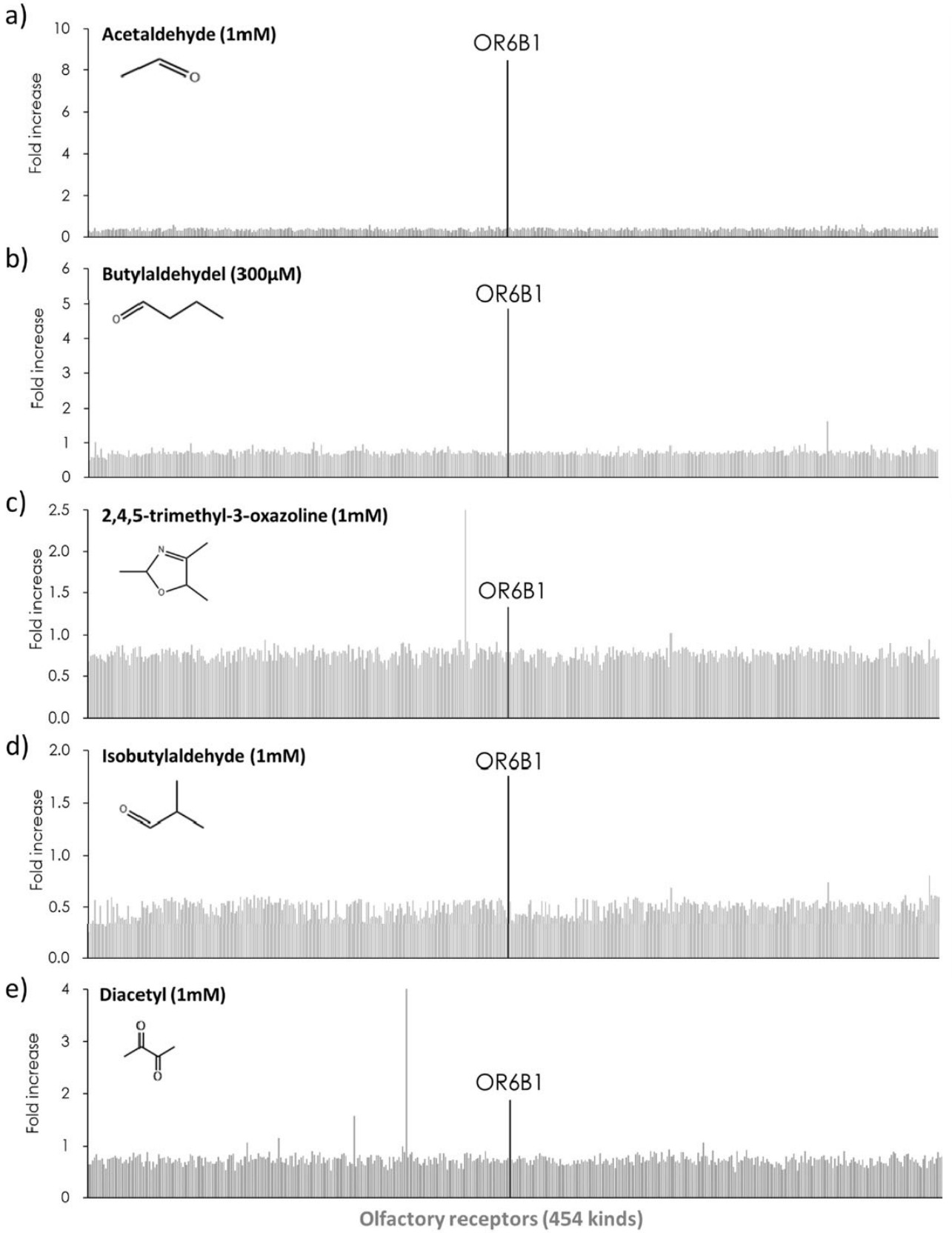

a)
Acetaldehyde (1mM)
OR6B1
Fold increase
b)
Butylaldehydel (300μM)
OR6B1
Fold increase
c)
2,4,5-trimethyl-3-oxazoline (1mM)
OR6B1
Fold increase
d)
Isobutylaldehyde (1mM)
OR6B1
Fold increase
e)
Diacetyl (1mM)
OR6B1
Fold increase
Olfactory receptors (454 kinds)

Figure 5

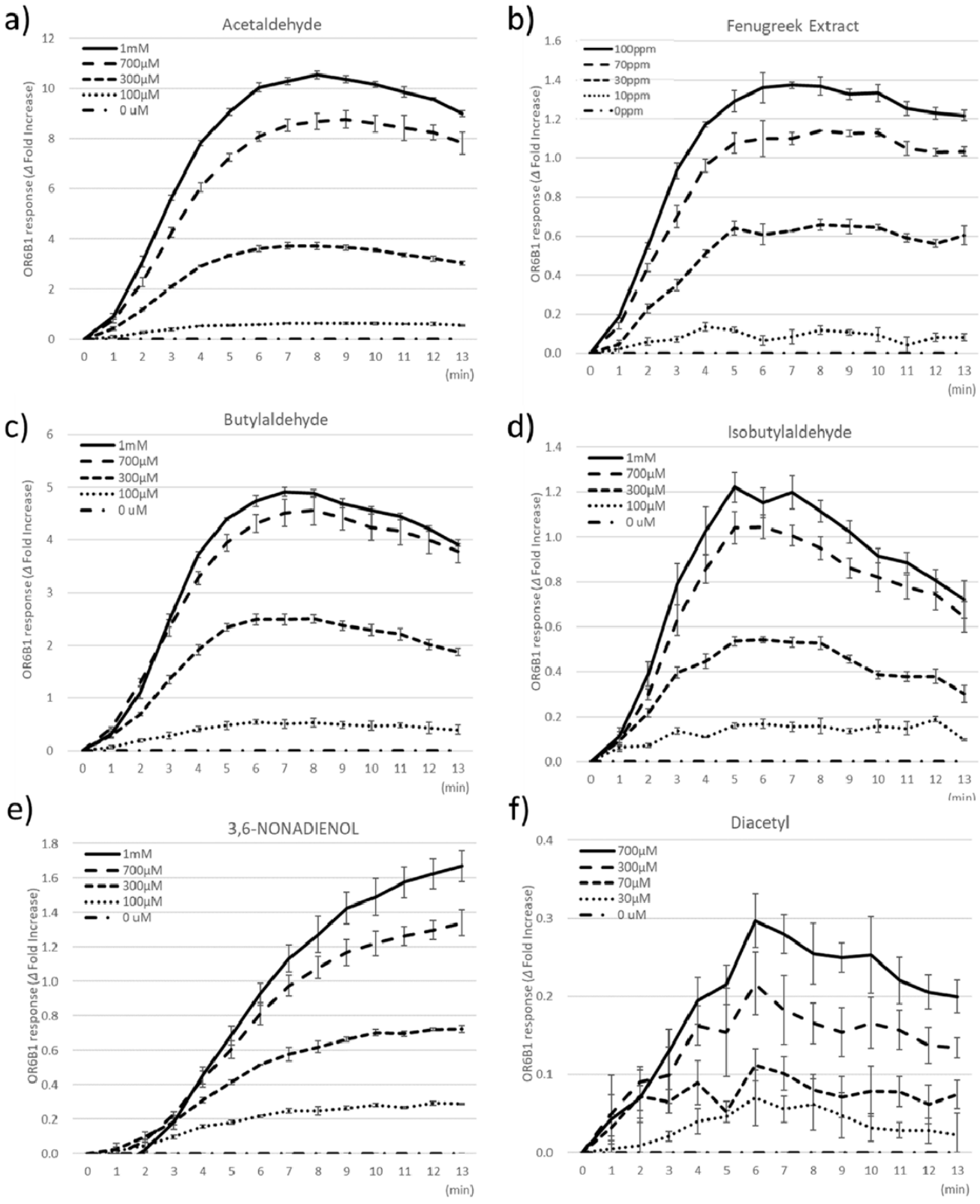

a)
Acetaldehyde
1mM
700µM
300µM
100µM
0 uM
OR6B1 response (Δ Fold Increase)
(min)
b)
Fenugreek Extract
100ppm
70ppm
30ppm
10ppm
0ppm
OR6B1 response (Δ Fold Increase)
(min)
c)
Butylaldehyde
1mM
700µM
300µM
100µM
0 uM
OR6B1 response (Δ Fold Increase)
(min)
d)
Isobutylaldehyde
1mM
700µM
300µM
100µM
0 uM
OR6B1 response (Δ Fold Increase)
(min)
e)
3,6-NONADIENOL
1mM
700µM
300µM
100µM
0 uM
OR6B1 response (Δ Fold Increase)
(min)
f)
Diacetyl
700µM
300µM
70µM
30µM
0 uM
OR6B1 response (Δ Fold Increase)
(min)

Figure 6

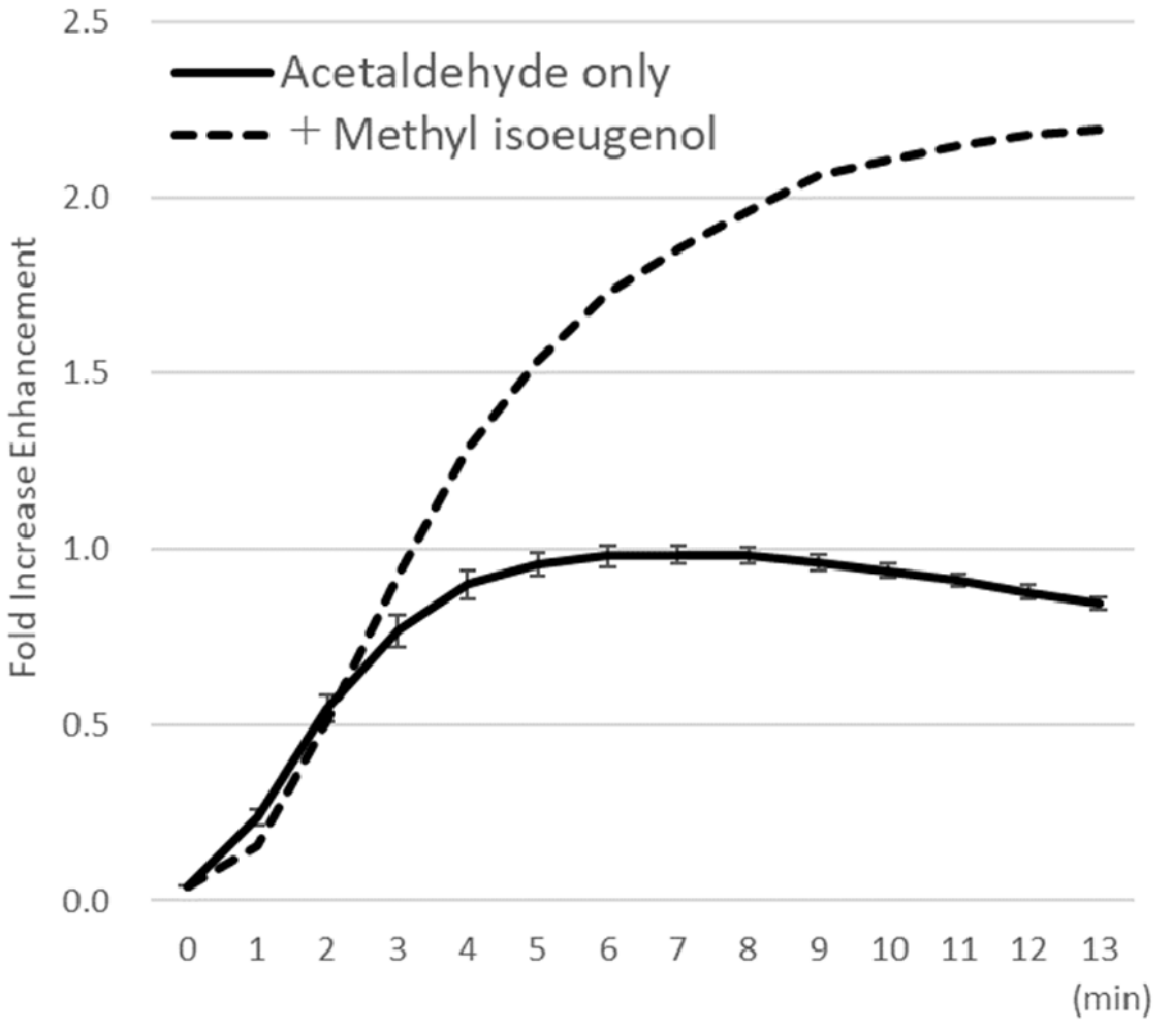

Acetaldehyde only
+ Methyl isoeugenol
Fold Increase Enhancement
2.5
2.0
1.5
1.0
0.5
0.0
0 1 2 3 4 5 6 7 8 9 10 11 12 13
(min)

Figure 7

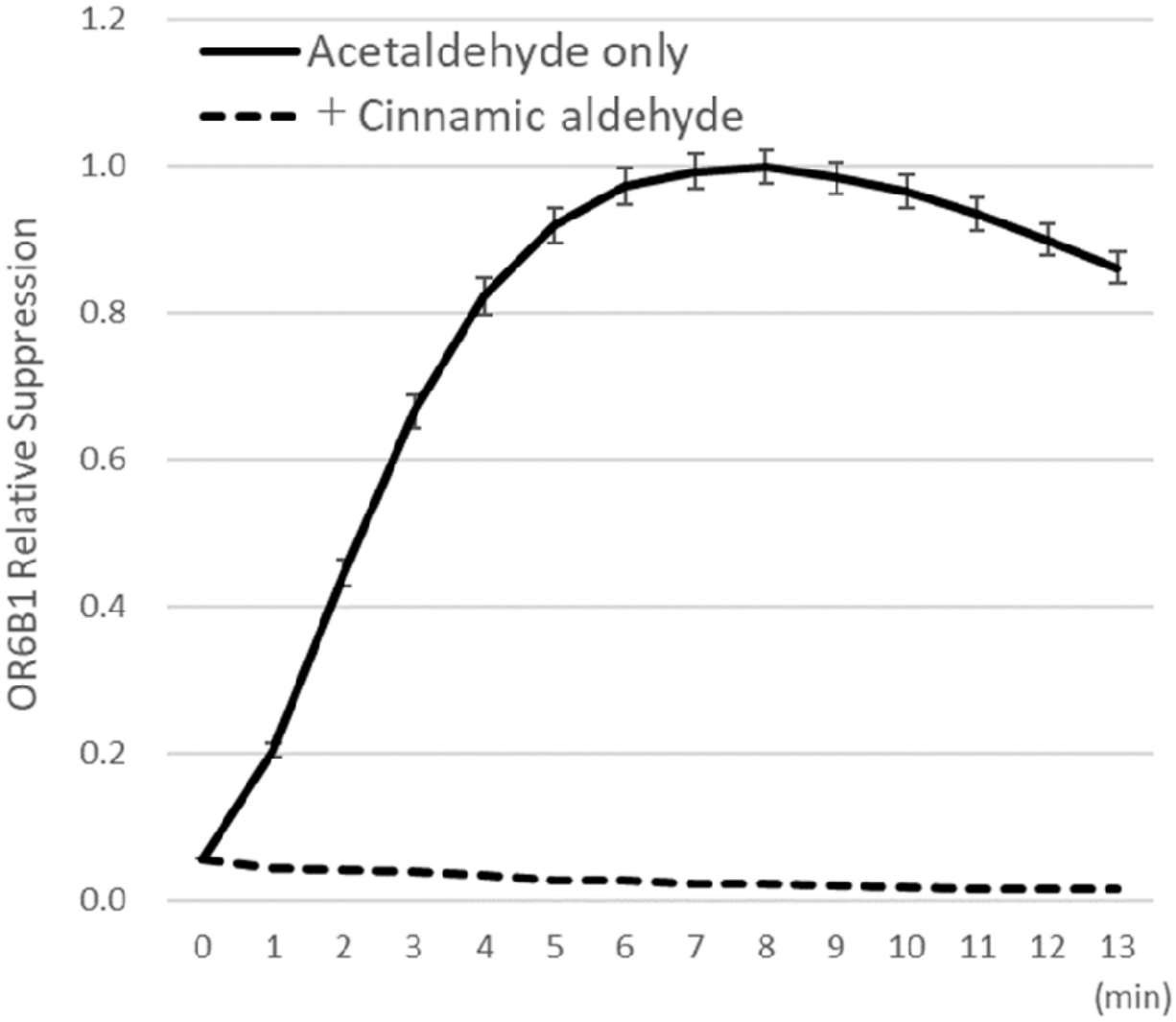

Acetaldehyde only
+ Cinnamic aldehyde
OR6B1 Relative Suppression
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0 1 2 3 4 5 6 7 8 9 10 11 12 13
(min)

Figure 8

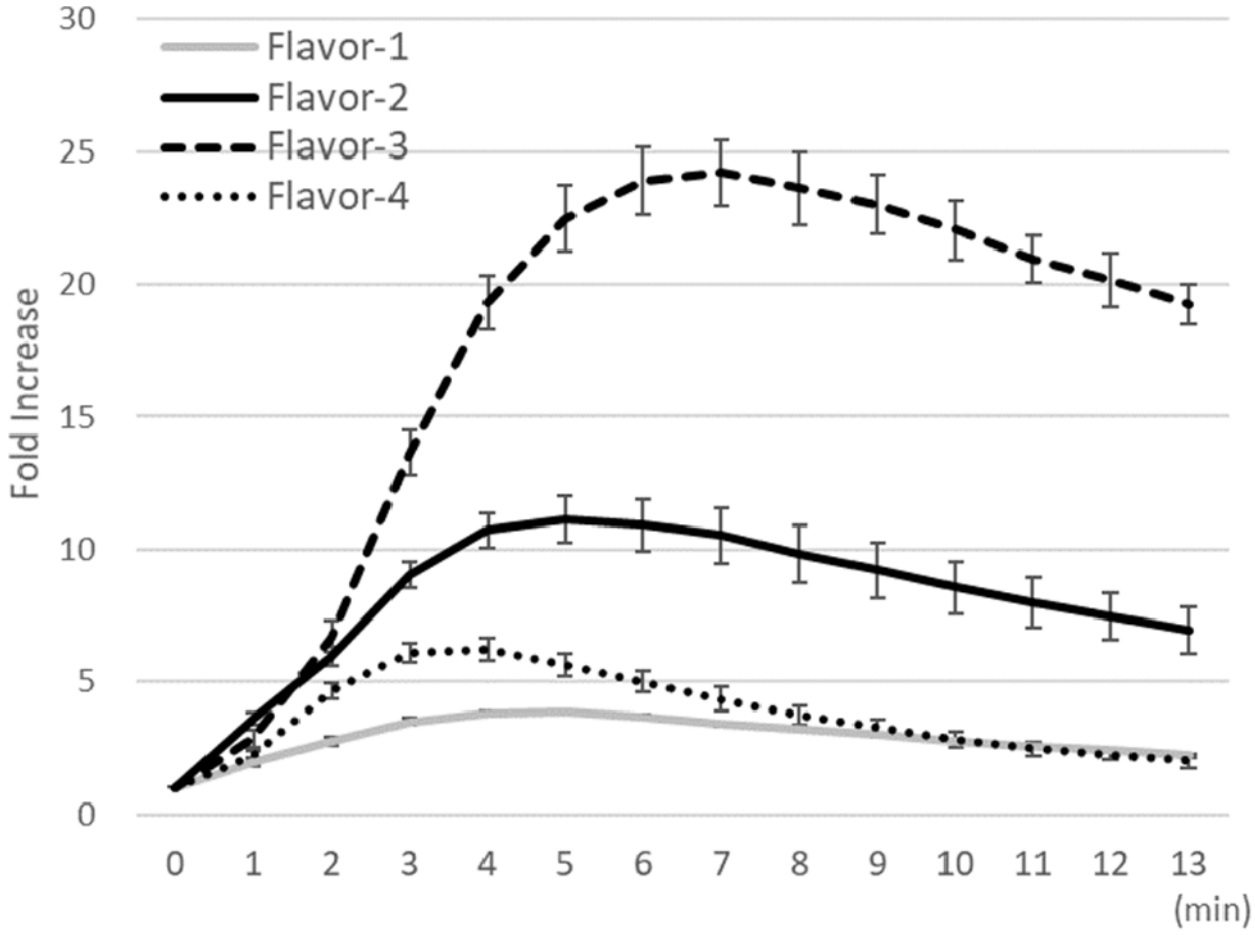
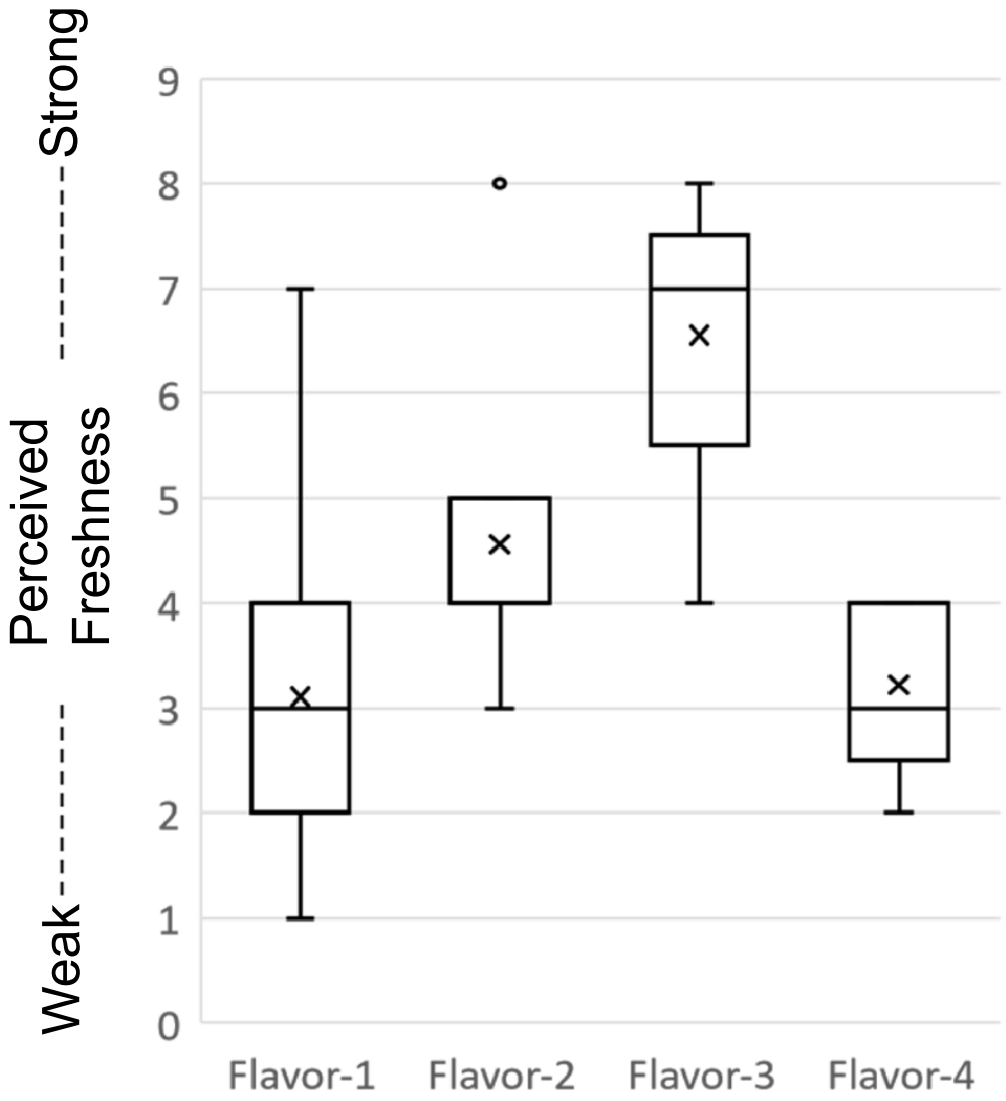

Flavor-1
Flavor-2
Flavor-3
Flavor-4
Fold Increase
30
25
20
15
10
5
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13
(min)

Figure 9


Perceived Freshness
Strong
Weak
9
8
7
6
5
4
3
2
1
0
Flavor-1
Flavor-2
Flavor-3
Flavor-4