Supporting Information

Controlled fragrance release from galactose-based pro-fragnances

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NMR-Spectra:

Figure S 1. $^1$H-NMR of (±)-2-((4-Oxo-4-((1RS,2SR)-2,6,6-trimethylcyclohex-3-en-1-yl)butan-2-yl)thio)acetic acid (1) in CDCl$_3$ at 300 MHz.
Figure S 2. \( ^{13}\text{C}-\text{NMR}\) of \((\pm)-2-(4\text{-Oxo-4-}\((1\text{RS},2\text{SR})\)-2,6,6-trimethylcyclohex-3-en-1-yl)butan-2-yl)thio)acetic acid (1) in CDCl\(_3\) at 300 MHz.

Figure S 3. \( ^{1}H\)-NMR of ((3a\text{R},5\text{R},5a\text{R},8a\text{S},8b\text{R})-2,2,7,7-Tetramethyltetrahydro-3a\text{H}-\text{bis}[1,3]\text{dioxolo}[4,5-b:4',5'-d]\text{pyran-5-yl})methyl 2-(4-oxo-4-((1\text{RS},2\text{SR})-2,6,6-trimethylcyclohex-3-en-1-yl)butan-2-yl)thio)acetate (2) in MeOH-D\(_4\) at 300 MHz.
**Figure S 4.** \(^{13}\)C-NMR of ((3aR,5R,5aR,8aS,8bR)-2,2,7,7-Tetramethyltetrahydro-3aH-bis([1,3]dioxolo)[4,5-b:4',5'-d]pyran-5-yl)methyl 2-((4-oxo-4-((1RS,2SR)-2,6,6-trimethylcyclohex-3-en-1-yl)butan-2-yl)thio)acetate (2) in CDCl\(_3\) at 300 MHz.

**Figure S 5.** \(^{1}H\)-NMR of ((2R,3S,4S,5R,6S)-3,4,5,6-Tetrahydroxytetrahydro-2H-pyran-2-yl)methyl 2-((4-oxo-4-((1RS,2SR)-2,6,6-trimethylcyclohex-3-en-1-yl)butan-2-yl)thio)acetate (3) in MeOH-D\(_4\) at 300 MHz.
**Figure S 6.** $^{13}$C-NMR of ((2R,3S,5R,6S)-3,4,5,6-Tetrahydroxytetrahydro-2H-pyran-2-yl)methyl 2-{(4-oxo-4-((1R,2S)-2,6,6 trimethylcyclohex-3-en-1-yl)butan-2-yl)thio)acetate (3) in MeOH-D$_4$ at 300 MHz.
IR spectra:

Figure S 7. IR spectra of (±)-2-((4-Oxo-4-((1RS,2SR)-2,6,6-trimethylcyclohex-3-en-1-yl)butan-2-yl)thio)acetic acid (1).

Figure S 8. IR spectra of ((3aR,5R,5aR,8aS,8bR)-2,2,7,7-Tetramethyltetrahydro-3aH-bis([1,3]dioxolo)[4,5-b:4',5'-d]pyran-5-yl)methyl 2-((4-oxo-4-((1RS,2SR)-2,6,6-trimethylcyclohex-3-en-1-yl)butan-2-yl)thio)acetate (2).
Figure S 9. IR spectra of ((2R,3S,4S,5R,6S)-3,4,5,6-Tetrahydroxytetrahydro-2H-pyran-2-yl)methyl 2-((4-oxo-4-((1RS,2SR)-2,6,6 trimethylcyclohex-3-en-1-yl)butan-2-yl)thio)acetate (3).

GCMS Spectra:

Figure S 10. Overlaid GC traces, showing the released fragrance for the 8 recorded time intervals from the protected pro-fragrance in the softener test.
Buffer preparation:

Buffer solutions (10 mL) were prepared according to previous established protocols using reagent grade chemicals from Sigma-Aldrich: boric acid (anhydrous), citric acid (anhydrous), sodium hydrogen phosphate (Na$_2$HPO$_4$), monopotassium phosphate (KH$_2$PO$_4$), sodium hydroxide (NaOH) and deuterium oxide (D$_2$O). A 0.1 M sodium hydroxide solution was prepared by dissolving 0.4 g NaOH in 10 mL of D$_2$O. A buffer of pH 4 was prepared by dissolving 107.5 mg of citric acid, 25.7 mg NaCl and 0.68 mL NaOH$_{aq}$ (0.1 M) in 10 mL of D$_2$O. The buffer of pH 7 was prepared by dissolving 35.2 mg KH$_2$PO$_4$ and 72.6 mg Na$_2$HPO$_4$ in D$_2$O (10 mL). Buffer of pH 10 was prepared by dissolving 47.7 mg of boric acid and 1.8 mL of NaOH$_{aq}$ (0.1 M) in D$_2$O (10 mL).