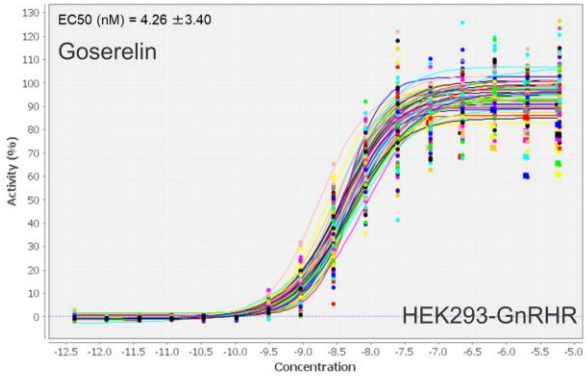
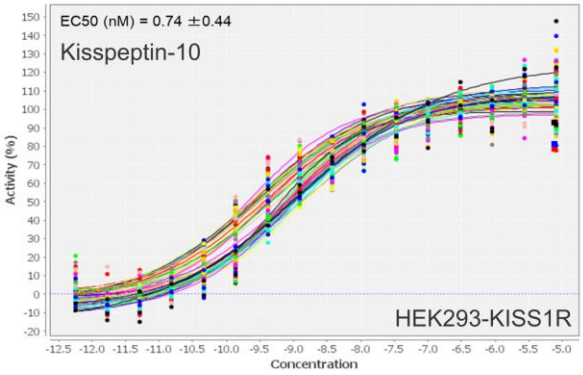
Supplementary Figures

Supplementary Figure 1

A



B



C

General Statistic

Agonist mode	GnRHR screening	KISS1R screening
CV (DMSO)	13.33 ± 2.91	31.23 ± 14.87
Z'	0.74 ± 0.051	0.73 ± 0.098
S/B or B/I	31.53 ± 3.70	26.77 ± 19.62
N	408	408

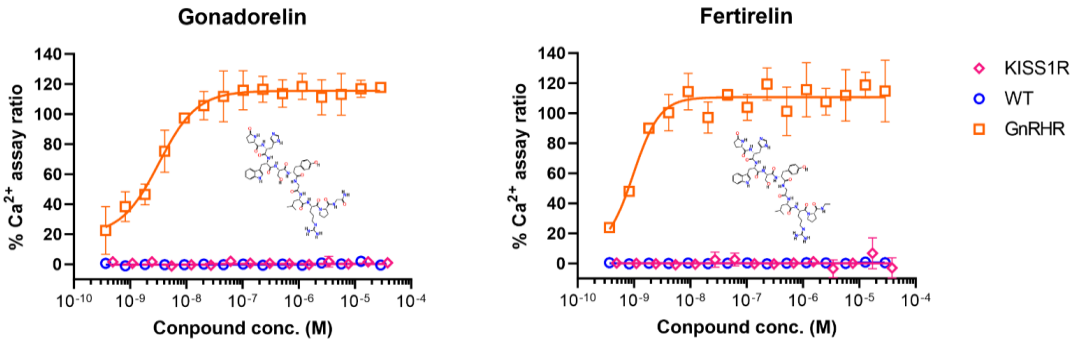
D

Reproducibility

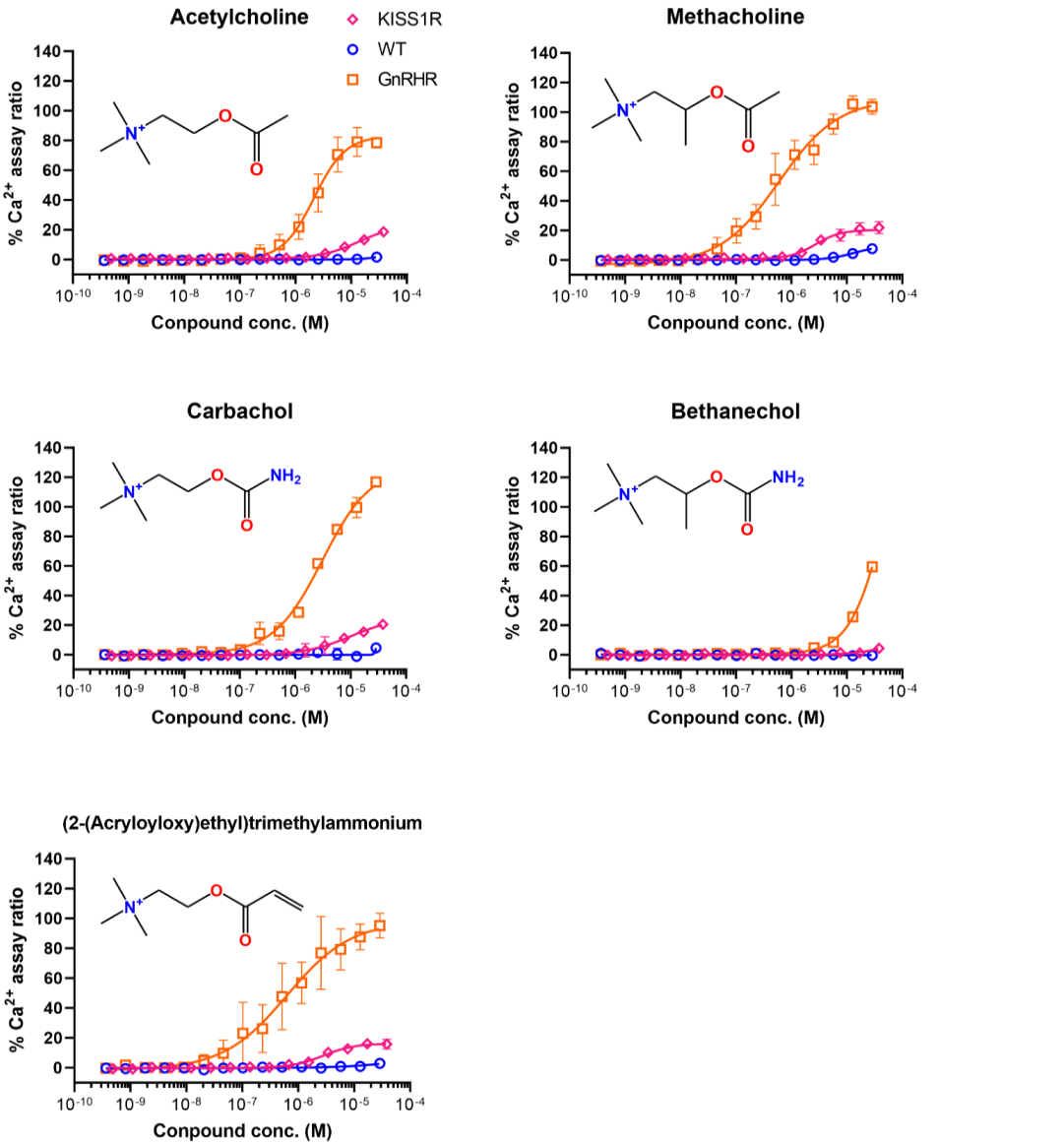
Agonist mode	GnRHR screening	KISS1R screening
Active match	1.51%	0.51%
Inactive match	96.22%	98.22%
Mismatch	0.00%	0.00%
Inconclusive	2.27%	1.27%
AC50 fold difference	1.56	1.32

Supplementary Figure 2

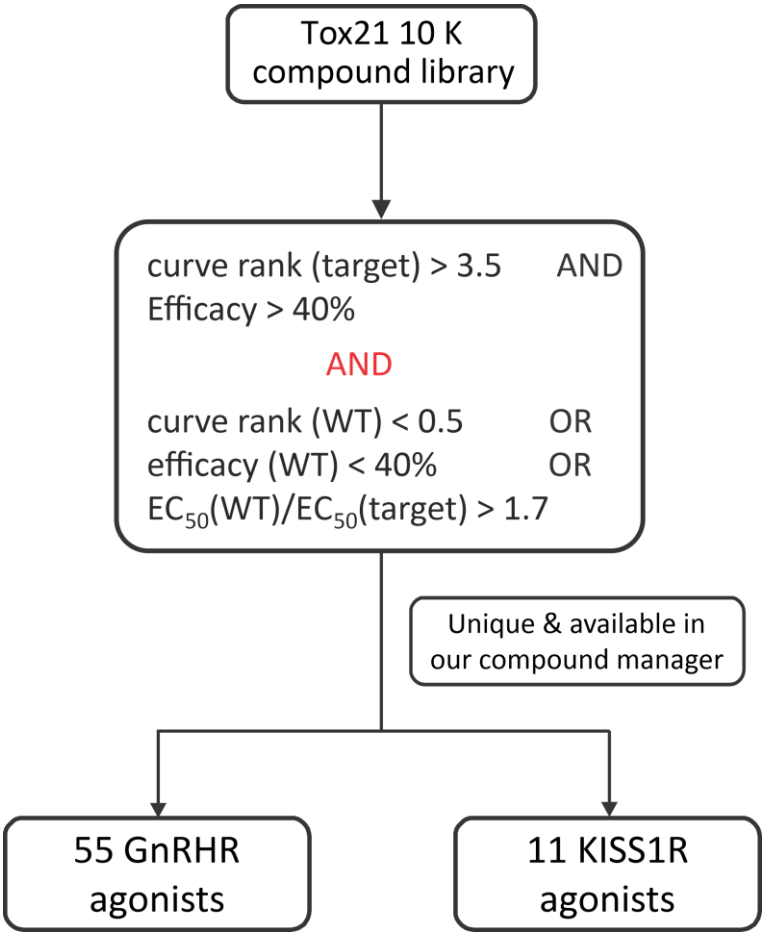
A



B



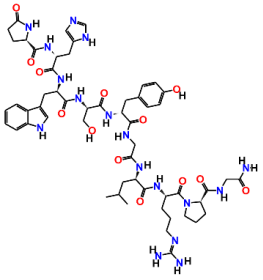
Supplementary Figure 3



Supplementary Figure 4

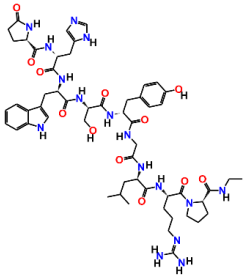
A

Gonadorelin



p-ERK assay: EC50=30.04 ± 17.91 nM

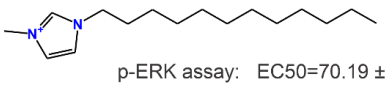
Fertirelin



p-ERK assay: EC50=7.49 ± 7.11 nM

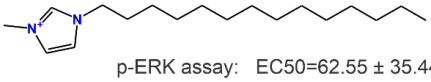
B

1-Dodecyl-3-methylimidazolium



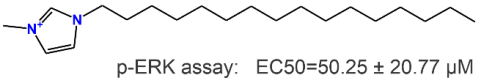
p-ERK assay: EC50=70.19 ± 17.53 μM

1-Methyl-3-tetradecylimidazolium



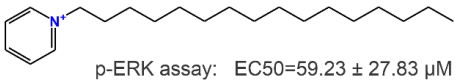
p-ERK assay: EC50=62.55 ± 35.44 μM

1-Hexadecyl-3-methylimidazolium



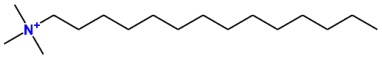
p-ERK assay: EC50=50.25 ± 20.77 μM

Cetylpyridinium



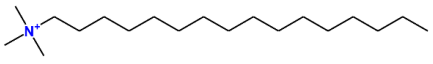
p-ERK assay: EC50=59.23 ± 27.83 μM

Myristyltrimethylammonium



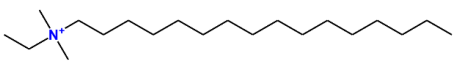
p-ERK assay: EC50=52.83 ± 3.51 μM

Hexadecyltrimethylammonium



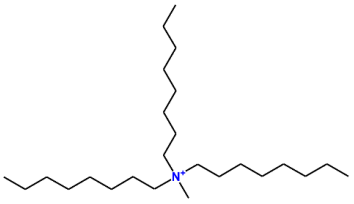
p-ERK assay: inactive

Ethylhexadecyldimethylammonium



p-ERK assay: EC50=31.36 ± 8.33 μM

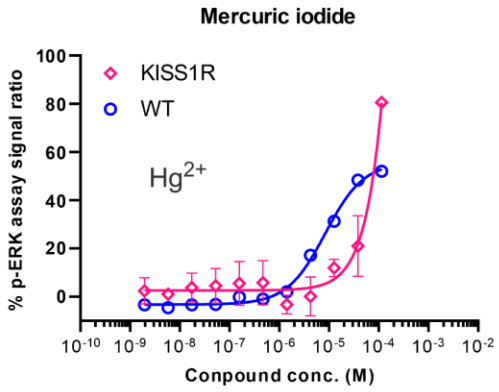
Methyltrioctylammonium



p-ERK assay: EC50=30.03 ± 18.15 μM

Supplementary Figure 5

A



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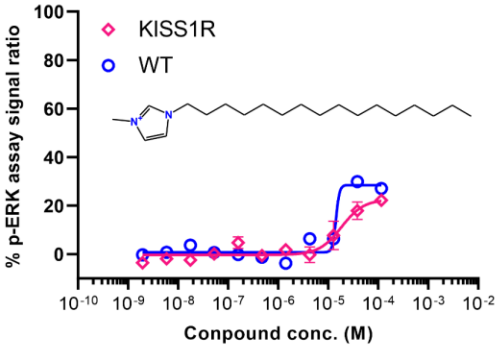

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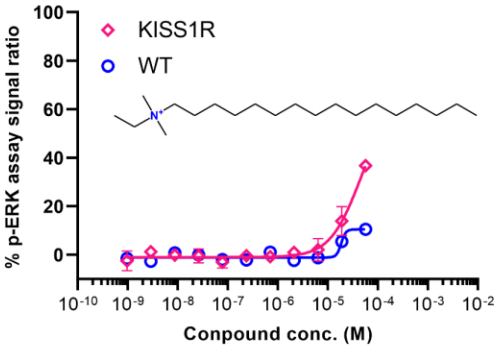

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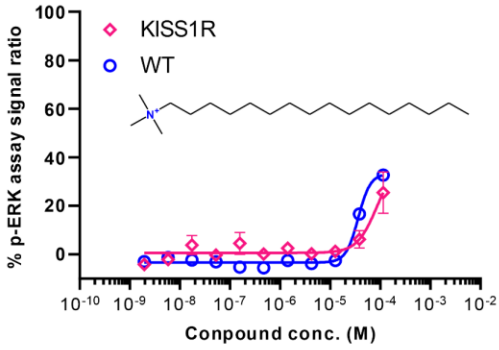
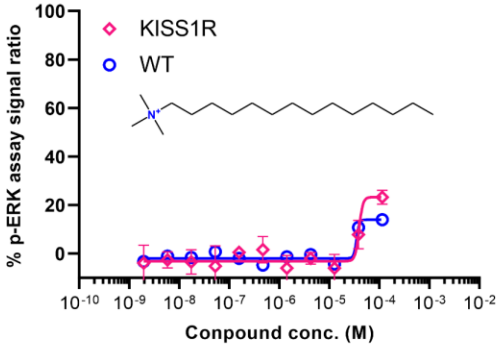
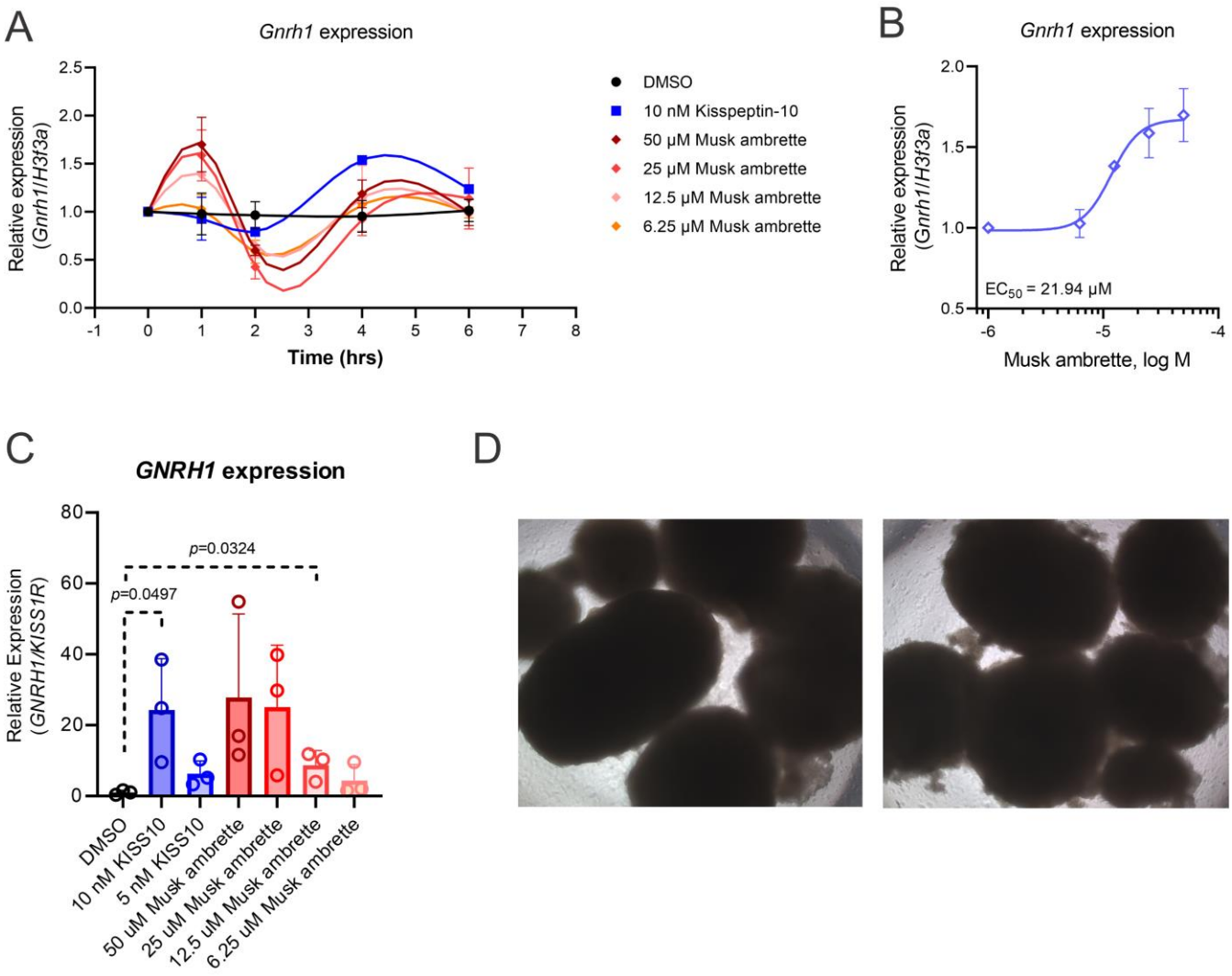


E

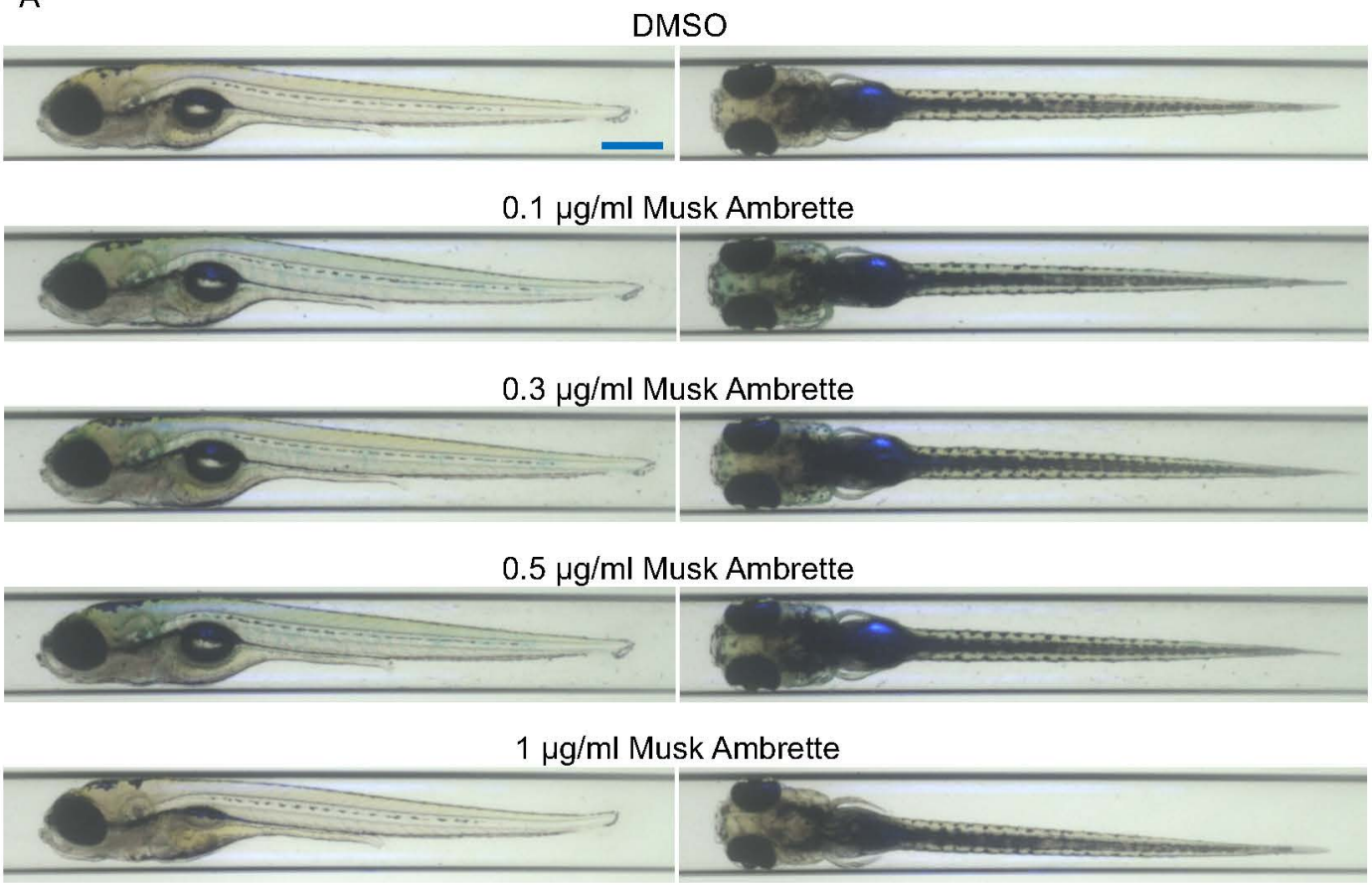


Supplementary Figure 6

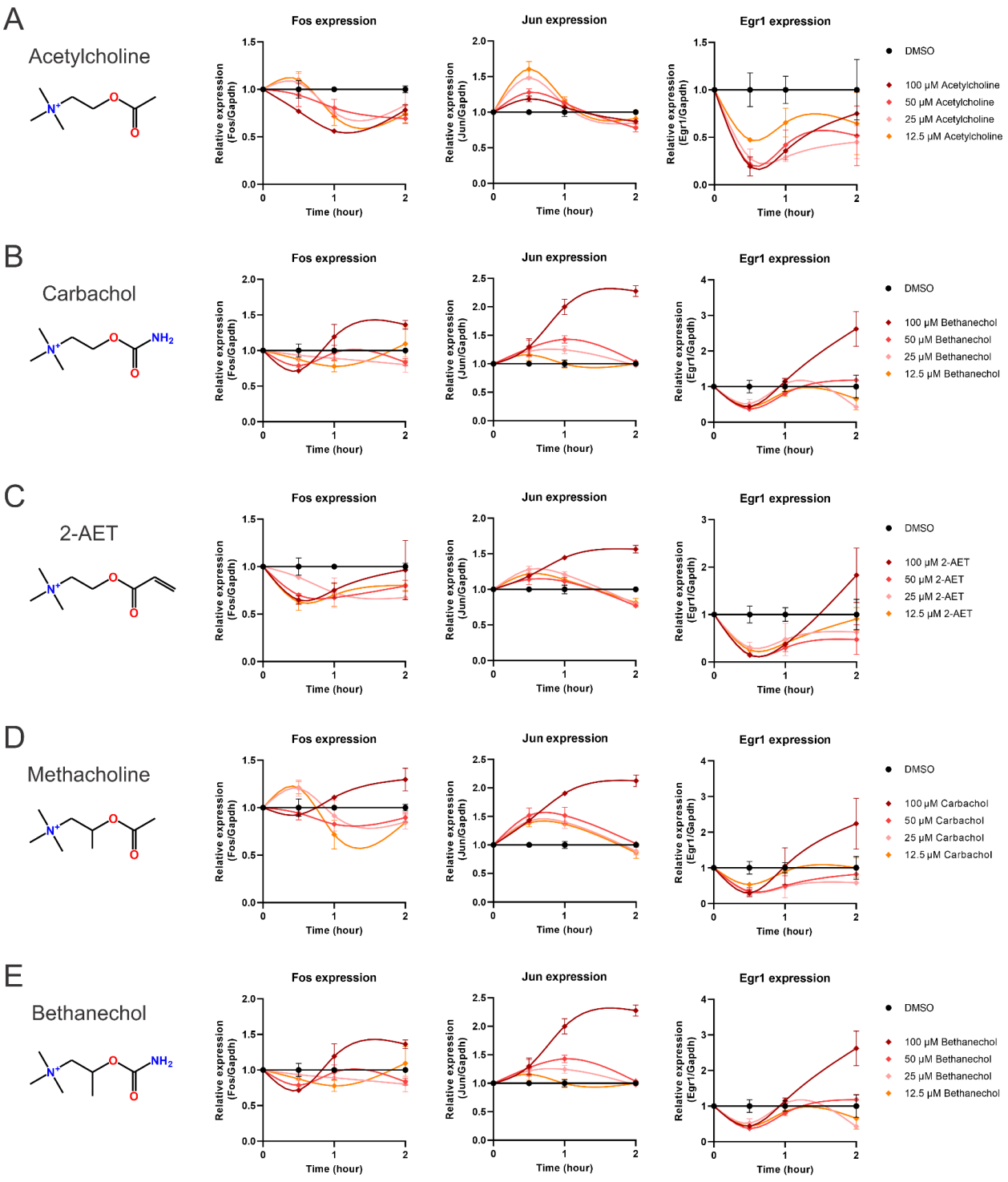


Supplementary Figure 7

A



B

	DMSO	0.1 µg/ml Musk Ambrette	0.3 µg/ml Musk Ambrette	0.5 µg/ml Musk Ambrette	1 µg/ml Musk Ambrette
Swim bladder (%)	100	99	85	72	23
No Swim bladder (%)	NA	1	15	28	77

Supplementary Figure 8