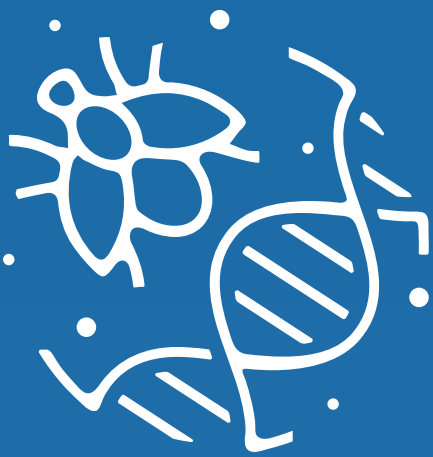


Insect specific In vitro assay development: Exploring the Ecdysone Receptor Agonism Adverse Outcome Pathway in *Drosophila* (S2) cell line

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BACKGROUND

Ecdysone receptor agonism - incomplete ecdysis associated mortality following a conserved pathway.¹

Often tagged by insecticides.

Ecdysone - insect hormone for moulting and metamorphosis.
S2 cells - *D. melanogaster* embryonic cell line.

OBJECTIVE

Development of an **insect - specific in vitro screening assay**.

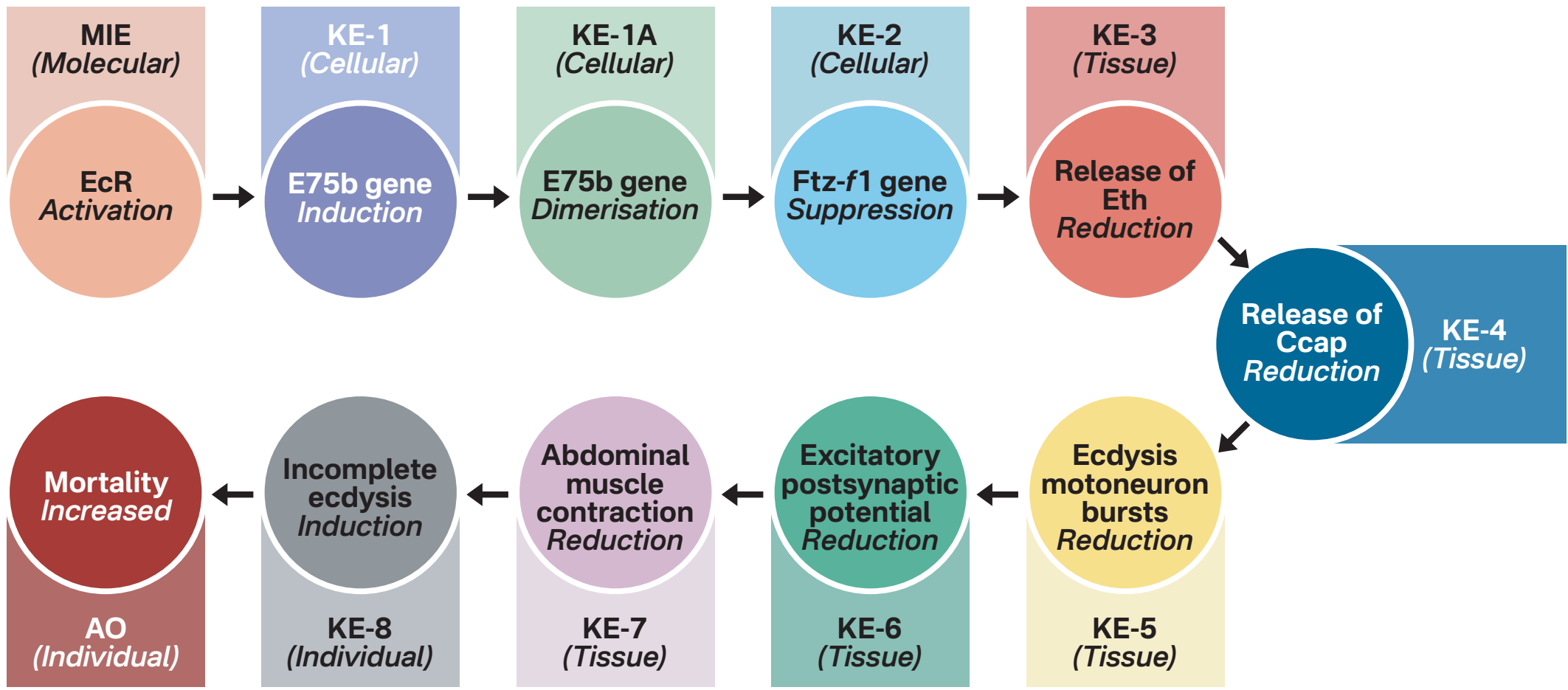
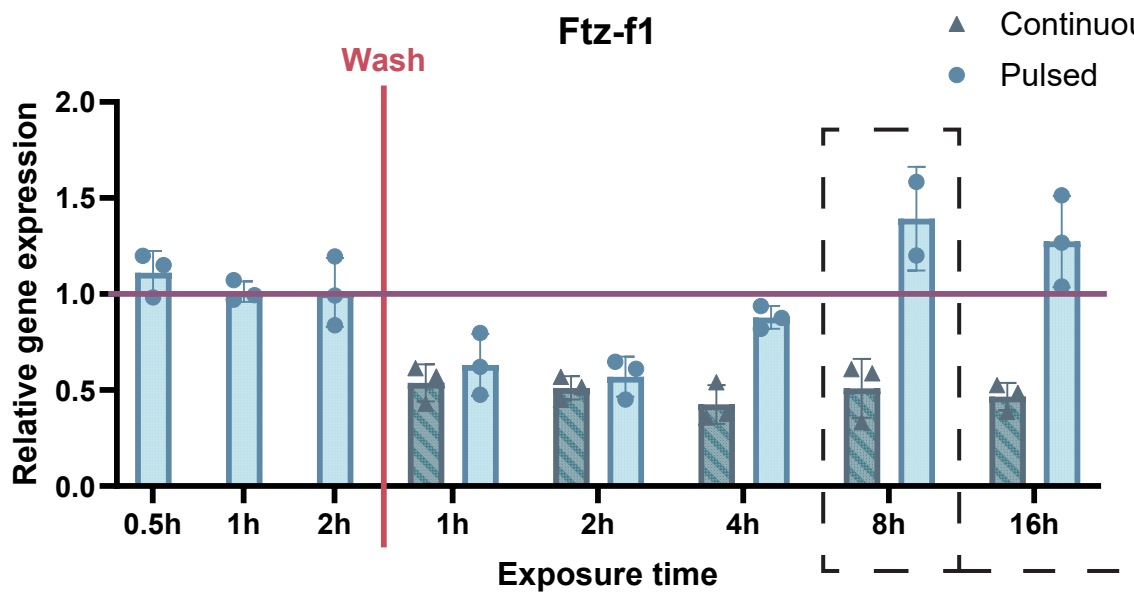
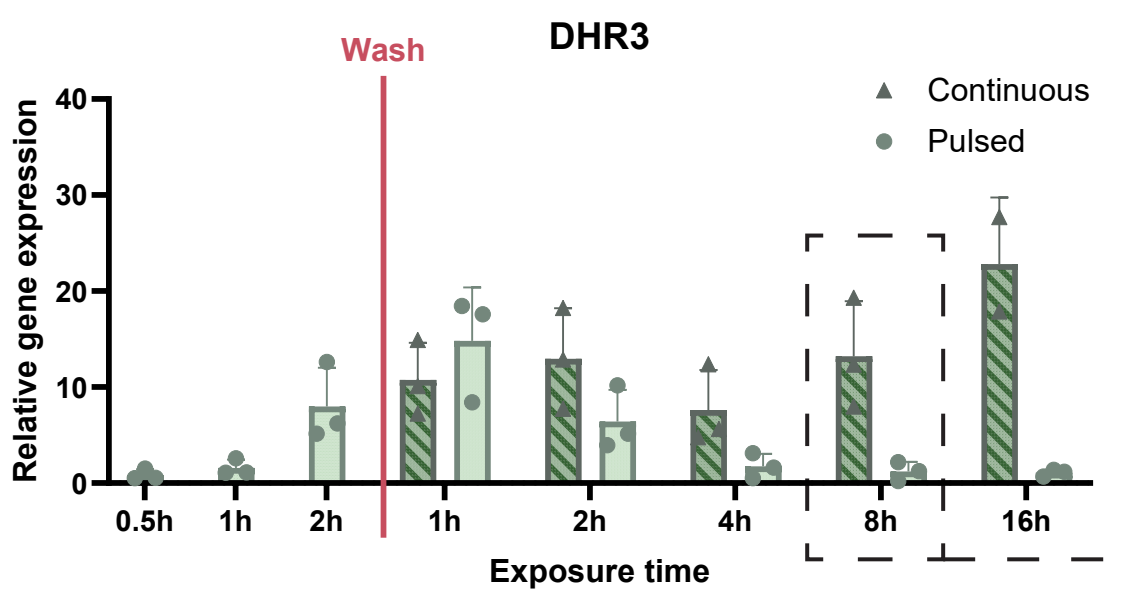
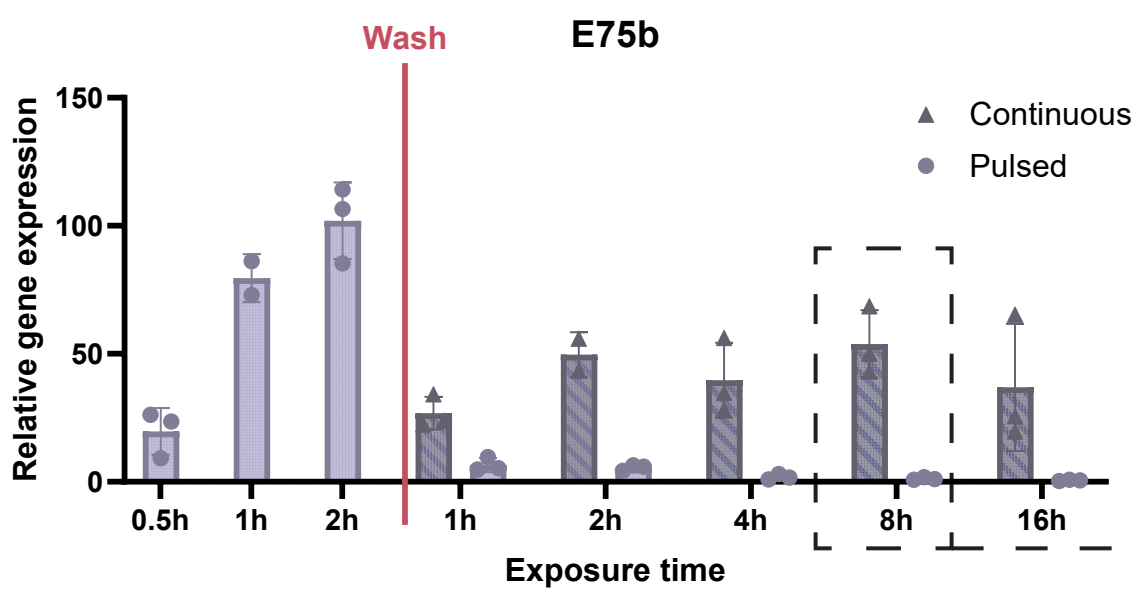


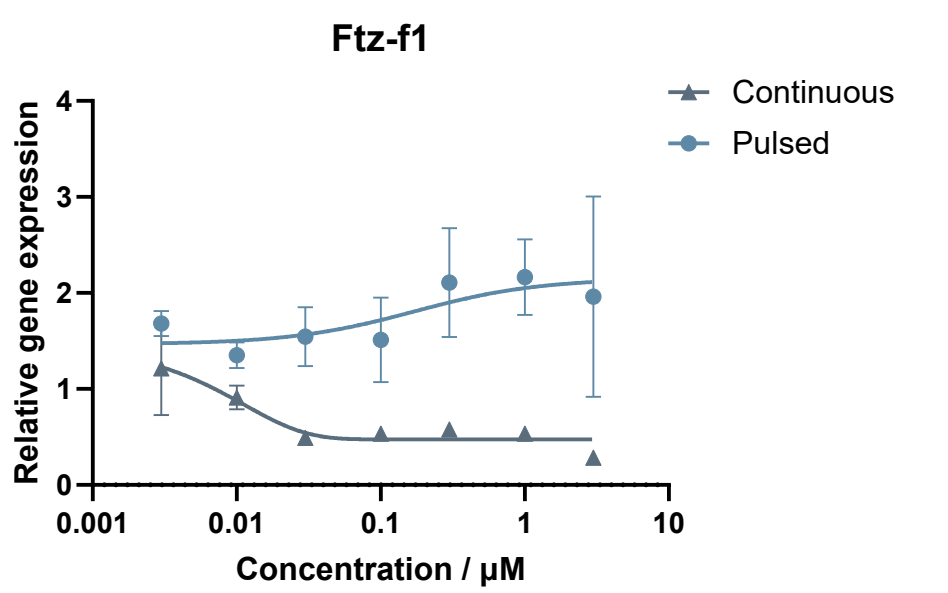
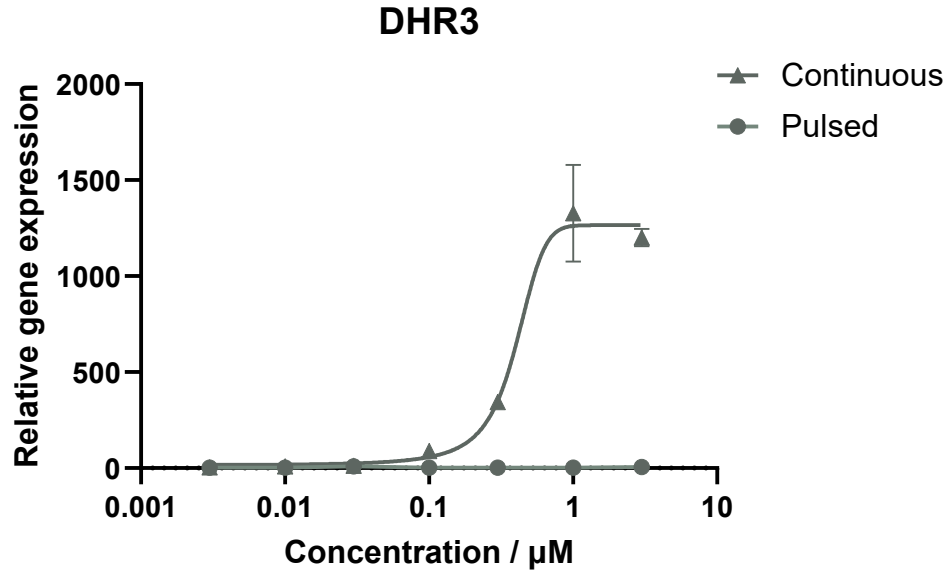
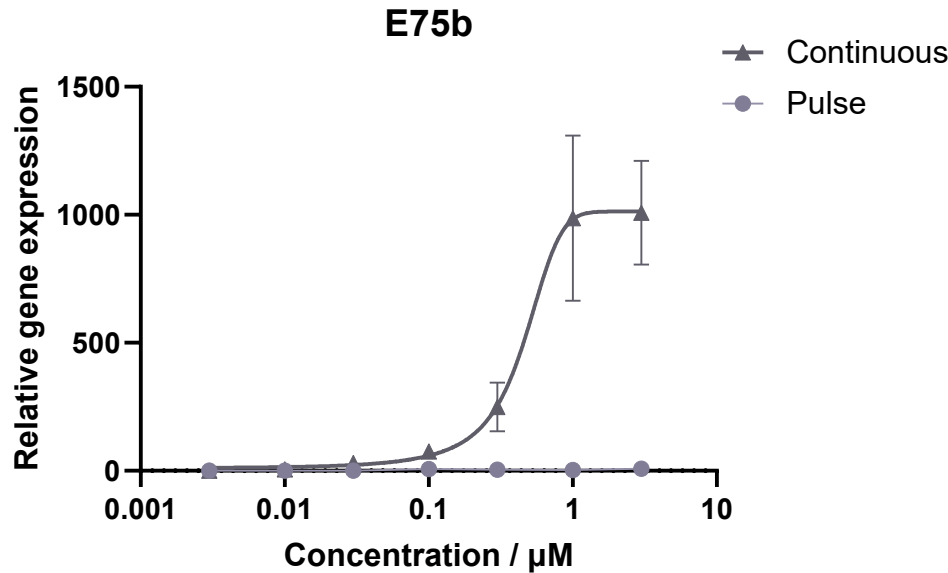
Figure 1 Graphical representation of Ecdysone receptor agonism Adverse Outcome Pathway (AOP) based on Song et al (2017)

S2 cells mimic the initial Key events of EcR AOP

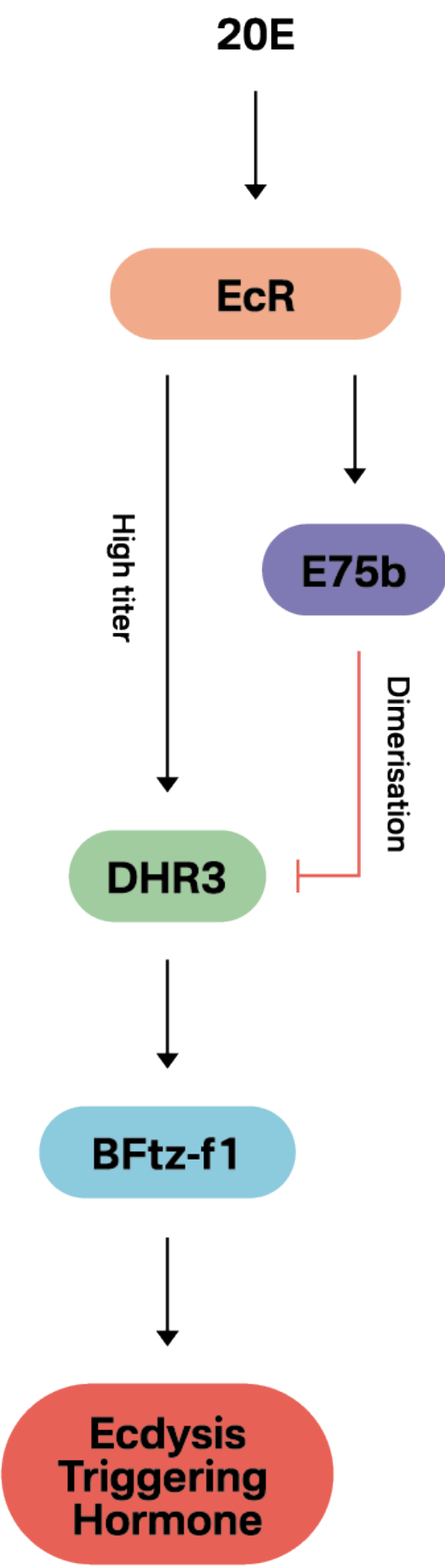
Ecdysis gene expression cascade in time exposed to 0.1 μ M ecdysone



Ecdysis gene expression cascade shows a dose-response relationship



Genetic cascade in vivo²

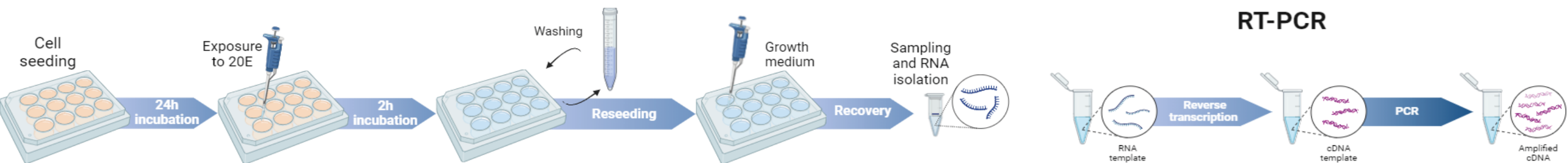


CONCLUSIONS

- S2 cell line is a promising model for EcR agonism AOP pending *in vivo* validation
- S2 cells portray the initial KEs in a time and dose dependent manner

METHODS

Two exposure scenarios and a range of ecdysone concentration



REFERENCES:

- Song Y, et al. (2017); DOI: 10.1021/acs.est.7b00480
- Sullivan A and Thummel C, (2003); DOI: 10.1210/me.2002-0430

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