

# **Pre-implantation mouse embryo movement under hormonally altered conditions**

Hannah Lufkin, Diana Flores, Zachary Raider, Manoj Madhavan, Madeline Dawson, Anna Coronel, Dhruv Sharma, Ripla Arora

## **Contents:**

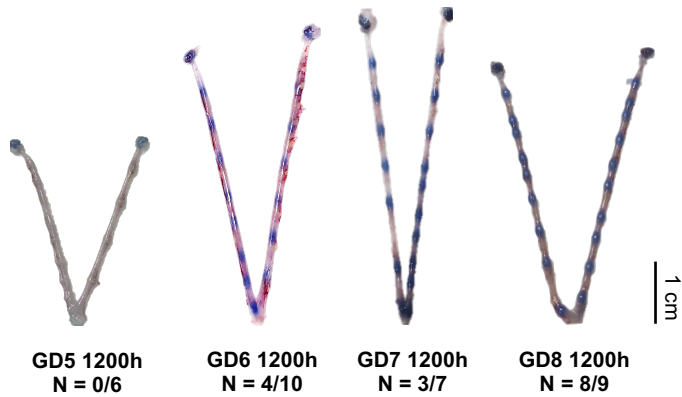
Supplementary Figure S1: Implantation frequency in Natural Diapause pregnancy.

Supplementary Figure S2: Serum ovarian hormones in Natural Diapause pregnancy.

Supplementary Figure S3: Estrogen treatment does not prevent embryo distribution throughout the horn at implantation.

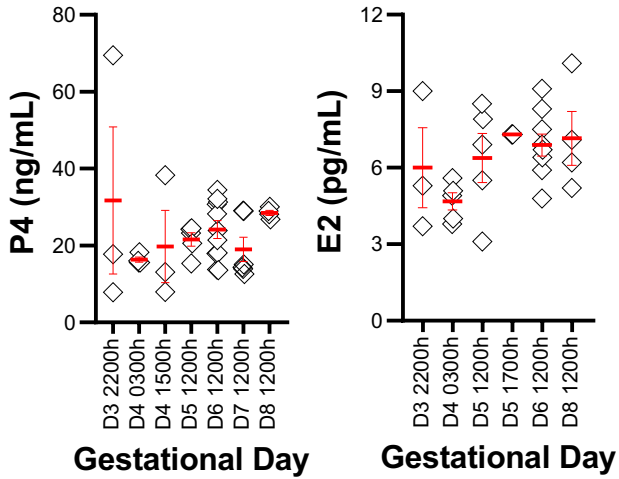
Supplementary Figure S4: Estrogen Receptor inhibitor treatment does not affect embryo location.

Supplementary Figure S5: Progesterone receptor inhibitor treatment does not affect embryo location.



**Supplementary Figure S1: Implantation frequency in Natural Diapause Pregnancy.** Implantation begins on GD6 (4/10), and most ND pregnancies display implantation by GD8 (8/9) as seen by blue dye reaction. Bulges observed at GD5 are placental scars from prior pregnancy. GD: Gestational Day; ND: Natural Diapause.

# Natural Diapause



**Supplementary Figure S2: Serum ovarian hormones in Natural Diapause pregnancy.** Serum hormone levels during different time points of embryo entry (GD3), embryo movement (GD4-GD5), and post-embryo spacing (GD6) in the ND pregnancy. Mean  $\pm$  SEM displayed in red. GD: Gestational Day; ND: Natural Diapause.

Vehicle

25ng E2

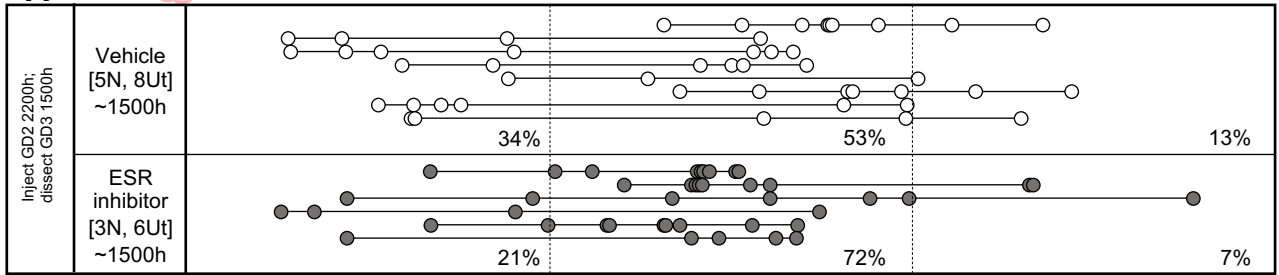


**Supplementary Figure S3: Estrogen treatment does not prevent embryo distribution throughout the horn at implantation.** Treating the NP with vehicle (A) or 25ng E2 (B) prior to unidirectional movement does not affect embryo scattering and appearance of blue dye sites throughout the uterine horn at GD4 1200h (n=5 for vehicle and treatment). NP: Natural Pregnancy; E2: Estrogen, GD: Gestational Day.

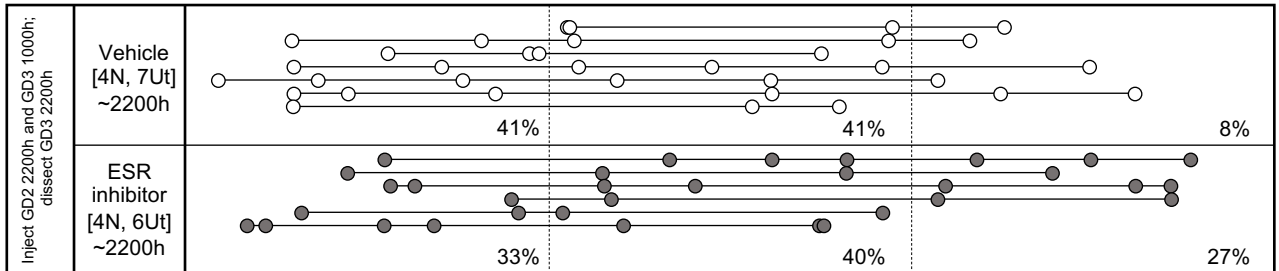
Oviduct

Cervix

A



B



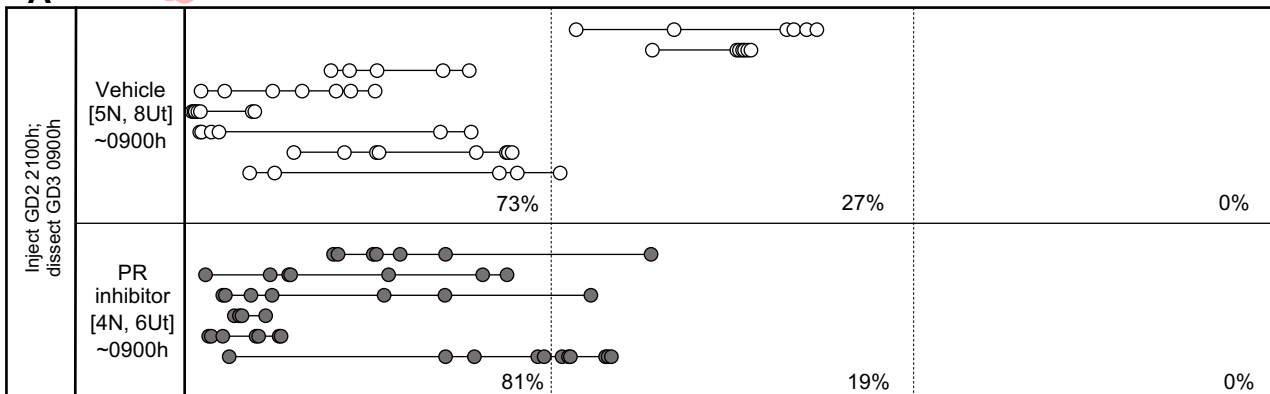
### Supplementary Figure S4: Estrogen Receptor inhibitor treatment does not affect embryo location.

Treating the NP with ESR antagonist during unidirectional movement (A), or bidirectional movement (B), fails to alter the movement pattern of embryos. White circles represent mice treated with vehicle and grey circles represent mice treated with ESR antagonist NP: Natural Pregnancy; ESR: Estrogen Receptor.

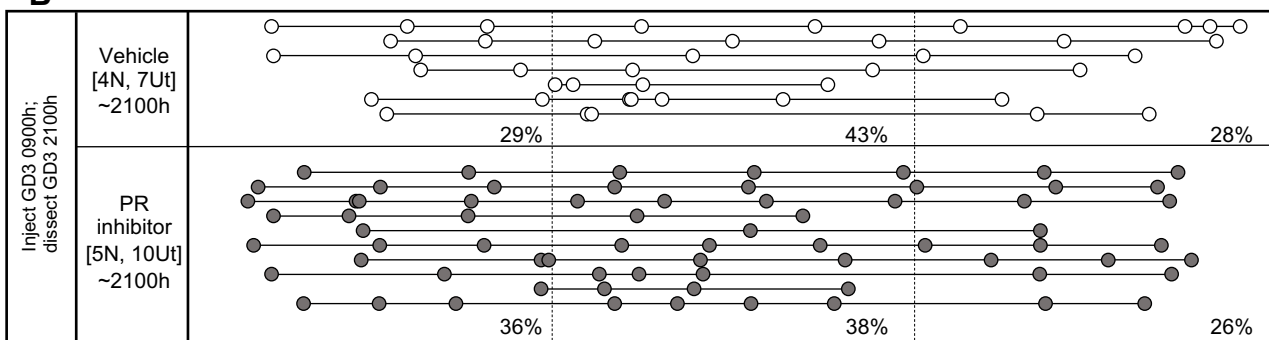
Oviduct

Cervix

A



B



### Supplementary Figure S5: Progesterone receptor inhibitor treatment does not affect embryo location.

Treating the NP with low dose P4 receptor (PR) antagonist Mifepristone during unidirectional movement (A), or bidirectional movement (B), fails to alter the movement pattern of embryos. Each circle represents an embryo, and circles connected with a line are embryos from the same uterine horn. White circles represent mice treated with vehicle and grey circles represent mice treated with PR antagonist. NP: Natural Pregnancy; P4: Progesterone.