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Abstract: 29225

FETAL MORTALITY AND FERTILITY IN DIVERGENTLY SELECTED LINES FOR BIRTH WEIGHT HOMOGENEITY IN MICE

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HOMOGENEOUS animals are more **ROBUST**:
Litter size
Survival at weaning

OBJECTIVE
Analyze the differences between lines selected divergently in terms of fetal mortality and pregnancy rate

86♀ from a divergent selection experiment for birth weight (**BW**) environmental variability in mice:

✓ Ultrasound scans at 14 days of gestation

✓ Litter size at birth (**LS**)

Fetal mortality (M)
**Number of fetuses (NF)**
Receptivity (R)

Model:
$$y = \mu + line + generation + line * generation + NF + NF * NF + \varepsilon$$

✓ where y was:
- sexual receptivity (percentage of vaginal plugs created by females in the first three days after mating) (**NF** not fitted)
- number of fetuses at 14 days of gestation (**NF** not fitted)
- fetal mortality (difference between **NF** and **LS**, in percentage)

✓ line: low and high variability lines for **BW**

✓ generation: 17 and 18

ULTRASOUND SCANS AT 14 DAYS OF GESTATION
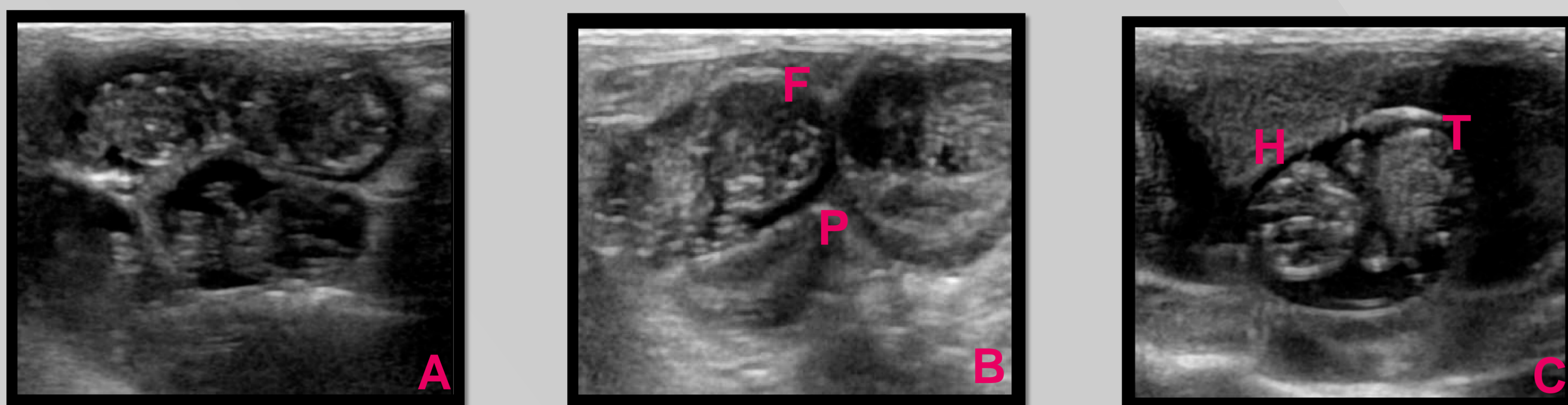
A: Four fetuses.
B: Two fetuses coronal image. Differentiation of placenta (**P**) from fetus (**F**).
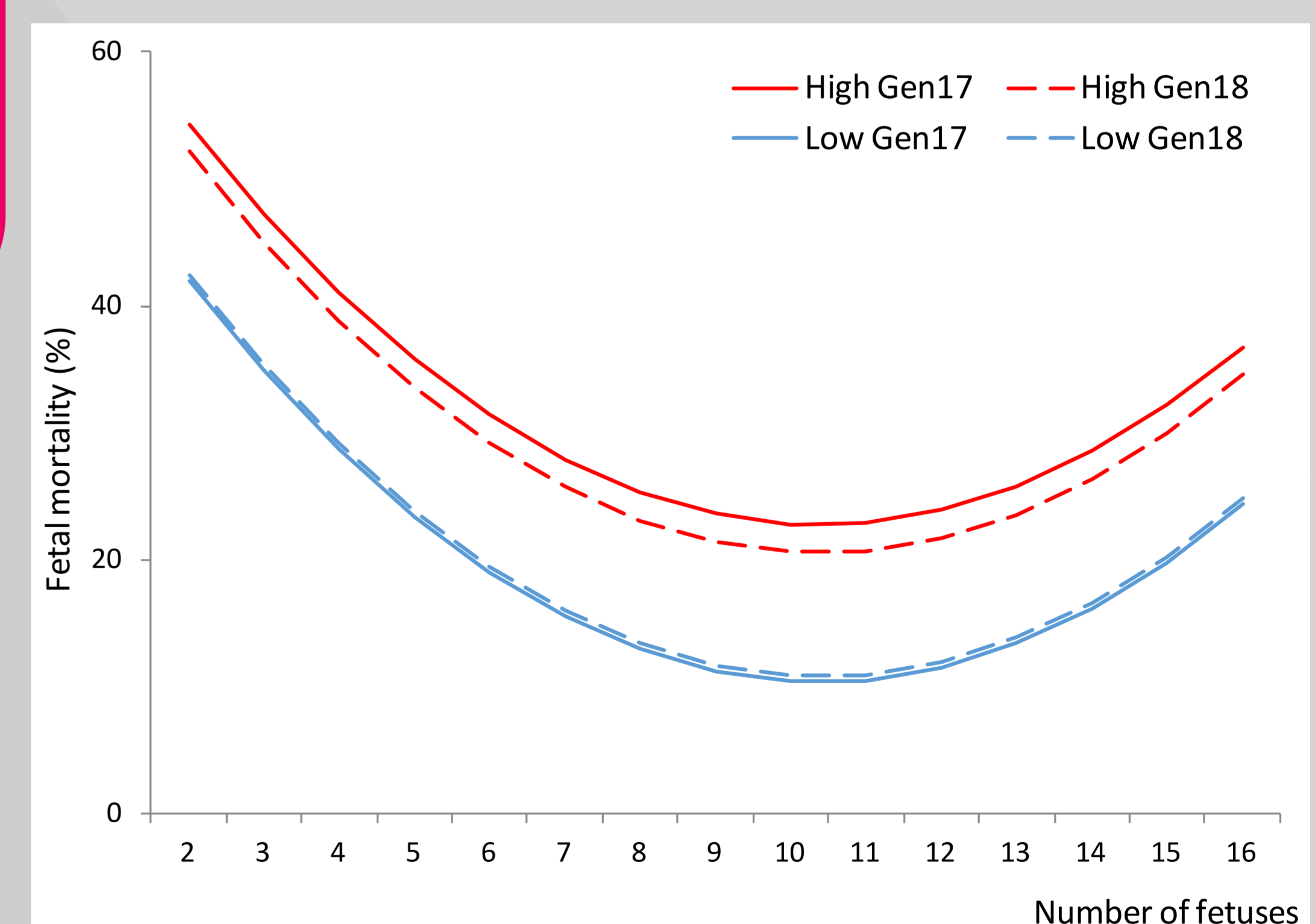**C**: A foetus coronal image shows formation of the head (**H**) and torso (**T**).

BIRTH

Mice litter at birth.

Evolution of the fetal mortality (%) by number of fetuses at 14 days of gestation in low and high variability line in both generations considered.

	NF (fetuses)	M (%)	LS (pups)	R (%)
Low variability line	11.16	12.49	9.82	53.49
High variability line	11.23	26.13	8.36	23.26
p	n.s.	***	*	***

NF = number of fetuses at 14 days of gestation; M = fetal mortality; LS = litter size at birth; R = receptivity.
n.s. = not significant; * p < 0.05; ** p < 0.01; *** p < 0.001

CONCLUSION
Low variability line would be preferable in terms of fetal survival and sexual receptivity being both indicators of robustness and animal welfare