

## Evidence for a possible foetal control of prostaglandin output from the pregnant rat uterus *in vitro*

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Prostaglandins (PGs) of the F-type are released from the pregnant rat uterus *in vitro* in increasing amounts during the last 5 days of pregnancy, reaching a maximum on the day of delivery and rapidly decreasing post-partum. Ovarian hormones have little effect on the time course of this output (Harney, Sneddon & Williams, 1974). As the

isometrically and the results are shown in Table 1.

All operative procedures significantly reduced PG release and foetectomy reduced uterine activity, preparations becoming quiescent after 15-30 minutes. In every horn that became quiescent addition of arachidonic acid (5 µg/ml) or phospholipase A (160 mU/ml) increased PG output and restored uterine activity (as did PGF<sub>2α</sub>, 30-60 ng/ml). Indomethacin (20 µg/ml) abolished the responses to arachidonic acid and phospholipase A, but not that to PGF<sub>2α</sub>.

These results suggest that PG release from the pregnant rat uterus *in vitro* is dependent upon substrate availability which itself is influenced by the presence of the foetus.

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**Table 1** Prostaglandin release from day 22 pregnant rat uteri.

Experimental group	n	Uterine activity		Prostaglandin release (ng/g)/h		
		Unoperated	Operated	Unoperated	Operated	
Control (unoperated)	16	**	—	214 ± 37	—	
Ligated	14	***	**	130 ± 18	72 ± 30	<i>P</i> < 0.05
Unilaterally foetectedomized	8	**	*	176 ± 66	54 ± 13	<i>P</i> < 0.01
Bilaterally foetectedomized	12	—	*	—	86 ± 8	<i>P</i> < 0.001

The number of asterisks represents uterine activity relative to control preparations. The level of significance of PG release was determined by the Wilcoxon test.

foetus influences parturition in the sheep (Liggins, Grieves, Kendall & Knox, 1972) possible foetal control of uterine PG release has been investigated.

Two experimental groups were studied: (1) animals made unilaterally pregnant by ligating the cervical end of one uterine horn 1-2 weeks before mating; (2) animals in which the foetuses were removed from one or both horns on days 16 or 17, retaining the placentae *in utero*. The PG release from single uterine horns was determined by the method of Vane & Williams (1973) for each experimental group on the expected day of delivery. Uterine activity was recorded

## References

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