

# The circadian variation of prolactin in fetal sheep is affected by the seasons

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Plasma PRL concentration shows a circadian variation in fetal and adult sheep. In the adult sheep the presence of this variation depends on the season. In this paper we investigated whether season affects the presence of the circadian variation of PRL in the fetal sheep. To that effect we measured plasma PRL concentration every 2 h for 24 h during summer, fall, and winter in three groups of fetal sheep whose gestational ages ranged from 125-133 days. Mean ( $\pm$  SEM) fetal plasma PRL concentrations were  $352.8 \pm 65.0$  ng/ml during summer ( $n = 6$ ),  $98.7 \pm 12.9$  during fall ( $n = 8$ ), and  $10.5 \pm 2.6$  during winter ( $n = 4$ ). A 24-h variation of plasma PRL was detected during summer [PRL (ng/ml) =  $352.8 \pm 85.2 \cos 15 (t - 18.5)$ ;  $P = 0.007$ ] and fall [PRL (ng/ml) =  $98.7 + 26.6 \cos 15 (t - 23.6)$ ;  $P = 0.041$ ] but not during winter. The mesor and amplitude of the variation are higher in summer than in fall, and the acrophases differ by 5 h, taking place at dusk in summer and close to midnight in fall. These