

## DIFFERENTIAL EXPRESSION OF THE RELAXIN RECEPTOR (LGR7) IN THE MAMMARY APPARATUS OF THE LACTATING TAMMAR WALLABY (*MACROPUS EUGENII*)

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Growth and development of the mammary apparatus (nipple and mammary gland) are important aspects of lactation. Macropodid marsupials can suckle young of two different ages simultaneously, a phenomenon known as asynchronous lactation. As a result, the type of milk produced and the structure of the two mammary glands supporting young of different ages vary considerably. A role for the peptide hormone relaxin in lactation has been demonstrated in relaxin receptor (LGR7)-deficient mice, which fail to deliver milk to their offspring due to impaired nipple development (1). This study investigated the distribution of LGR7 in the different mammary glands and nipples during asynchronous lactation in the tamarin wallaby. The specific aim was to determine if the age of the pouch young influences LGR7 gene expression. Tissues were collected from the mammary apparatus sustaining the neonate and an older pouch young in the same mother, between Days 0 and 21 of lactation ( $n = 5/\text{stage}$ ). A partial sequence (250-bp) of the tamarin LGR7 was first obtained from a region close to the N-terminus of the soluble ectodomain, with 82% amino acid homology compared to the human LGR7 sequence. LGR7 gene expression was then measured by quantitative-PCR, using a TaqMan probe in the Opticon 2 thermal cycler (MJ Research, GeneWorks). Expression of LGR7 was upregulated in both the nipple and mammary gland supporting the neonate between 5 and 11 days after birth. There was no difference in LGR7 expression between these two tissues. However, LGR7 mRNA concentrations were significantly ( $P < 0.05$ : paired  $t$ -test) higher in the mammary apparatus supporting the neonate compared with that of the older young. These data suggest that a local stimulus, such as the continuous sucking by the neonate, may influence LGR7 expression in the mammary apparatus.

(1) Krajnc-Franken *et al.* (2004) *Mol. Cell. Biol.* **24**, 687–696.