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ABSTRACT BOOK

- 1. PLENARY LECTURES**
- 2. SYMPOSIA**
- 3. SPECIAL INTEREST SYMPOSIA**
- 4. NANO SYMPOSIA**
- 5. HISTORY POSTERS**
- 6. POSTER SESSION**
- 7. BRAIN AWARENESS WEEK POSTERS**

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Room Atlantic 1
Room Atlantic 2

POSTER SESSION 1

P137

CONTINUOUS GNRH TREATMENT BLOCKS BASAL FSHB BUT NOT LHB EXPRESSION IN RAT PITUITARY GONADOTROPHS

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Aim: To investigate mechanisms of inhibition of reproductive functions by continuous GnRH application, with focus on gonadotropin gene expression and secretion.

Methods: Experiments were performed in vivo and in vitro using female and male rats and cultured pituitary cells. Gene expression was characterized by qRT-PCR analysis. For this purpose, we searched for an appropriate reference gene. Protein expression was characterized by immunocytochemistry, and ELISA and Western blot analyses were used for LH measurements.

Results: Continuous exposure of pituitary cells in static cultures to GnRH agonists induced a prolonged blockade of Fshb expression after a brief stimulation. However, only a minor and transient inhibitory effect on Lhb expression was detected. Such Lhb profile probably reflects the expression status of three genes controlling Lhb transcription during the treatment: stimulation of Egr1, inhibition of Nr5a1, and no effect on Pitx1 expression. In contrast, continuous GnRH treatment stimulated Lh secretion in static cultures, leading to depletion of the secretory pool. In vivo administration of a GnRH agonist was also accompanied with a rapid increase in serum Lh levels and a progressive depletion of the intrapituitary Lh levels without major effects on Lhb expression.

Conclusion: Blockade of Fshb expression and depletion of the Lh secretory pool are two major factors accounting for weakening of the gonadotroph secretory function during continuous GnRH treatment.

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