

## Potency of LHRH Antagonists on LHRH-Induced LH Secretion in Rat Pituitary Cells *in Vitro*

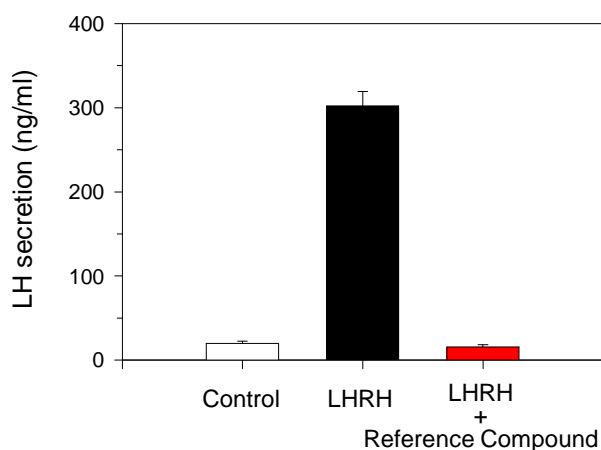
### Purpose

LHRH antagonists have been shown to be an effective and safe strategy for the treatment of hormone-dependent metastatic prostate cancer. The potency of new drug candidates as LHRH antagonists is determined by measuring their ability to inhibit the LH secretion in rat pituitary cells. Pharmacelsus has developed and validated a test system to evaluate the *in vitro* potency and efficacy of LHRH antagonists on the LHRH-induced secretion of LH.

### Our test model

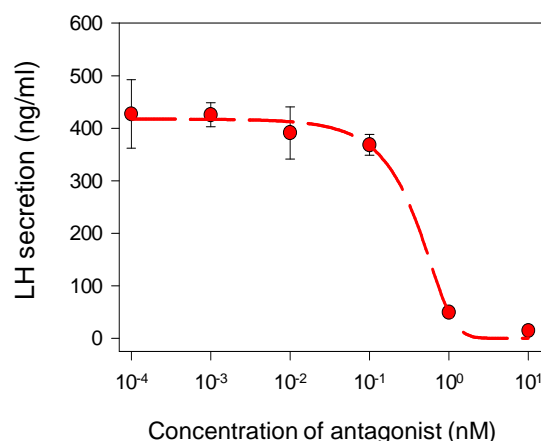
Pituitary cells are obtained from the adenohypophysis of male rats. After isolation of the anterior pituitary, the lobe is dissociated with trypsin inhibitor and papain. After centrifugation of the cell suspension, the pellet is resuspended in culture medium. The viability of the cells is determined by trypan blue exclusion. The cells are cultivated in a water saturated atmosphere at 37°C in collagen coated plates.

After 48 hours of cell culture, the LH secretion is stimulated by the addition of LHRH into the medium. Different concentrations of the test compound are added to determine the IC<sub>50</sub> of the potential LHRH antagonist. The LH concentration is determined by enzyme immunoassay.



**Figure 1:** Inhibitory effect of a LHRH antagonist on LHRH-induced secretion of LH in rat pituitary cells

### Model validation



**Figure 2:** Concentration-dependent effect of a reference LHRH antagonist on LHRH-induced LH release

### Next test step provided

Potent LHRH antagonists *in vitro* can be further tested in our *in vivo* model to determine:

- Drug efficacy/potency *in vivo* on LH release
- Duration of action
- Reversibility of the inhibition

Please don't hesitate to contact us for a customized quotation

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