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GnRH analogoues-agonists and antagonists

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GnRH analogues have achieved widespread clinical use for control of reproduction in animals. Over 2000 analogues of GnRH have been developed and tested the last 30 years. Paradoxical anti-fertility effects are seen when the more potent agonists are delivered continuosly to animals. The evaluation of agonist potency depends largely on the model used and wide varying potencies are reported for same agonist. The design of analogues has centered on improving the receptors-binding and subsequent activation for agonists. Antagonists have been produced with strong receptor binding but without activation. Deslorelin is calssified as a superagonist,with a potency perhaps 100 times that of GnRH. the interactions between agonist potency,dose and duration of treatment largely determine whether pro- or anti-fertility effects are induced. Due to the peptide nature of the synthetic analogues, oral administration, and potential gastrointestinal enzymatic degradation, poor bioavailability results, necessitating a parenteral delivery system. Some GnRH antagonists have been associated with significant histamine release, inhibiting their widespread use. More recently,antagonists have been developed that avoid this side effect without compromising potency. However the GnRH antagonists development has lagged behind that of the agonists, in part related to their high cost of production. In conclusion ,GnRH agonists have achieved widespread clinical use in animals for controlling reproduction in either pro- or anti-fertility roles, antagonists development has been slower yet.

Keywords: GnRH analogue, GnRH potency, GnRH agonists, Deslorelin, GnRH antagonist.

Antihelmintic activity of pulp of *Punica granatum* against *Marshallagia marshalli* (*in vitro*)

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Nowadays, parasitic infections are considered as serious and common chronic diseases, According to the researches, *Marshallagia marshalli* is one of the most common and significant parasites in Kerman province. In this study, the in vitro antihelmintic activity of two extracts of pulp of *Punica granatum* against *Marshallagia Marshalli* was investigated, in comparison with levamizol. The aqueous and methanoli extracts was used and each extracts was evaluated at three concentrations (25, 50 and 75mg/ml). Levamizol was used as positive control in three concentration (5, 50 and 500µl/ml) and PBS was used as negative control. During experiments, the inhibition of motility of the worms was used as the criterion for antihelmintic activity of extracts, during 10 hours post exposure. During experiments, the methanolic extracts of pulp of *Punica granatum* (concentration of 75 mg/ml) completely inhibited the motility of worms and his effect was comparable with levamizol (concentration of 500µl/ml). ($p<0.05$) The aqueous extracts had no antihelmintics effect during experiments and none of the worms were found dead or paralysis during 10 hours post exposure in PBS. According to the results of this study, the examination of this component by in vivo method is needed and it is suggested that these extracts should be tested on worm infestations in domestic animals.

Keywords: *Punica granatum, Marshallagia marshalli*, pulp, parasitic infections , antihelmintic