

**Guinea pig gonadotropin-releasing hormone: expression pattern, characterization and biological activity in rodents.**

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Gonadotropin-releasing hormone (GnRH) is a decapeptide widely known for its role in regulating vertebrate reproduction by serving as a signal from the hypothalamus to pituitary gonadotropes. The first form of GnRH to be identified was isolated from mammals (mGnRH) and the same form has been reported for all mammals studied, which includes marsupials and placental mammals. Later, another variant, chicken GnRH-II (cGnRH-II) was shown to be expressed together with mGnRH in the brains of all jawed vertebrates, including mammals such as rats, monkeys and humans. Our objective was to characterize a third form of GnRH that was isolated previously as mRNA from guinea pigs (gpGnRH), but has not been reported for any other mammal to date. Furthermore, the gonadotropic activity of gpGnRH has not been fully characterized. Our results, using chromatographical and immunological methods, show for the first time that gpGnRH is expressed together with mGnRH in some rodents (wild guinea pig and capybara), but not in others (mouse and hamster). Also, the gonadotropic activity of gpGnRH and mGnRH was tested in two different rat cell culture systems. Although there have been reports that the salmon(s) form of GnRH is present in mammals, we did not detect sGnRH in capybara, wild guinea pigs, hamsters, rats or mice. Taken together with previous reports, the present results support the idea that the expression of multiple GnRH variants in a single species is a common pattern in most vertebrate groups.

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