**Discovery and evolutionary history of gonadotropin-inhibitory hormone (GnIH), a new key neuropeptide controlling reproduction**

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Gonadotropin-releasing hormone (GnRH) primarily regulates gonadotropin secretion and is a crucial neuropeptidergic component of the vertebrate reproductive system. Since the discovery of GnRH in the brain of mammals at the beginning of 1970s, several other GnRHs have been identified in the brain of non-mammalian vertebrates. Based on extensive studies in vertebrates, it was generally believed that GnRH is the only hypothalamic regulator of pituitary gonadotropin synthesis and release. In 2000, we discovered a novel hypothalamic neuropeptide that, in contrast to GnRH, actively inhibits gonadotropin release in quail and termed it gonadotropin-inhibitory hormone (GnIH). From the past 10 years of research, we now know that GnIH exists in several avian species and regulates avian reproduction by decreasing gonadotropin release and synthesis via action on the GnRH system and the anterior pituitary gland, mediated via GPR147. Importantly, we have further identified GnIH orthologs in a number of other vertebrates from fish to mammals including humans. Mammalian and fish GnIH orthologs also inhibit gonadotropin release, indicating a conserved role for this neuropeptide in the control of the reproductive axis across species. Thus, the discovery of GnIH has changed our understanding of the vertebrate reproductive axis in the last 10 years.