

孕酮受体介导哺乳动物雌性生殖活动的分子机理

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摘要 孕酮作为一种甾体激素, 在哺乳动物雌性生殖活动的调控中起着关键作用。孕酮的生理功能依赖于核孕酮受体介导的基因组效应和膜孕酮受体介导的非基因组效应, 这两种效应共同介导了孕酮在各种雌性生殖活动中的不同作用, 包括排卵、胚胎植入、妊娠维持、分娩启动和乳腺发育等。近年来, 通过基因芯片技术筛选出大量的孕酮下游靶基因, 但至今未能在这些基因的启动子区域上找到传统意义上的孕酮响应元件, 故推测核孕酮受体调节下游靶基因转录活动的方式可能不同于传统的类固醇核受体。基于目前最新的研究成果, 文章综述了在哺乳动物雌性生殖活动中, 孕酮受体介导各种生理效应的分子机理。

关键词: 孕酮 孕酮受体 生殖功能 基因组效应

Abstract: The steroid hormone, progesterone, plays a critical role in regulation of mammalian female reproductive activities. Besides the non-genomic activity of progesterone on target cells, its main physiological effect is caused through genomic action by the ligand-dependent nuclear progesterone receptor. The genomic and non-genomic effects of progesterone collectively mediate various female reproductive functions, including ovulation, embryo implantation, maintenance of pregnancy, initiation of parturition, and development of mammary gland. Although a large number of candidate genes regulated by progesterone have been identified by gene chip technology, the traditional progesterone response elements located in the promoter region of downstream target genes havenot been detected. Accordingly, it was suggested thatthe mechanism of nuclear progesterone receptors regulating transcription may be different from other nuclear steroid receptors. In this review, we summarized the mechanisms of progesterone receptors mediating the physiological effects in various female reproductive activities.

Keywords: progesterone, progesterone receptor, reproductive function, genomic action

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