

Endocannabinoids and Reproduction

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Abstract

Infertility is a worldwide reproductive health problem whose consequences have deep psychological and social impact in health, demographic change, and wellbeing. Thus, the knowledge of basic, conserved modulators of reproduction might contribute to the discovery of new potential target for the exploitation of drugs to treat infertility in humans. Besides the well-known effects of endocannabinoids in the control of pain and visceral functions, in the last decade the deep involvement of endocannabinoid system in the control of reproductive functions in both males and females emerged. In fact, endocannabinoids, endogenous lipids that bind to cannabinoid receptors, modulate reproductive axis at both central and local level. Endocannabinoid signalling is critical for gonadotropin release and sex steroid biosynthesis, for the formation of functional male and female gametes, for fertilization, preimplantation embryo development, implantation, and postimplantation embryonic growth, and for labouring delivery as well. Endocannabinoids are also involved in the neuroendocrine control of reproduction functions through the modulation of stress, food intake, appetite, and sexual behaviour. Recently, new roles in sperm “startup” and gamete quality emerged and impairment of the physiological endocannabinoid tone and signalling has been reported in clinical cases of human infertility. Our hope is that this special issue may be important and timely since a deep knowledge of endocannabinoid system in reproduction might open new perspectives in clinical applications, pointing to endocannabinoid signalling as a novel target for correcting infertility, and for improving reproductive health in humans.

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Biography

Meccariello, got her Degree in Biology at the University of Naples Federico II, Italy, and the Ph.D in Comparative Endocrinology at the University of Padova, Italy, in 1997 and 2004 respectively. Currently, she is Associate Professor of Biology at the Department of Movement and Wellness Sciences at Parthenope University of Naples,

Italy. She is an expert in: Biology of reproduction; reproductive endocrinology; spermatogenesis; sperm quality; hypothalamus - pituitary - gonad axis; endocannabinoids; kisspeptins; GnRH; endocrine disruptor chemicals; bisphenol A; local regulation of testicular activity in vertebrates..