

Abstract

Endocrine disruptors (EDs) are defined as substances of exogenous origin that disrupt endocrine system. EDs are found in significant amounts in the natural environment, plastic products and flame retardants, leading to unavoidable exposure. Due to their broad effects, several organizations/ conventions aim to regulate their presence in the natural environment and limit, or even eliminate their production. By entering the body, they negatively affect development, reproductive, nervous or immune systems of various animal classes through hormones. Modified hormonal levels are associated not only with fertility issues, but also with physiological abnormalities, osteoporosis, depression or metabolic diseases. EDs affect the female reproductive system through hormonal modifications of the HPG axis, which can lead to an earlier pubertal onset in some cases. Under the influence of EDs, impairments can also be observed in the process of steroidogenesis, development of follicles and oocytes, particularly through meiotic defects, which can lead to premature ovarian failure or infertility. Multiple chemicals disrupt the females reproductive system across several generations through epigenetic effects. This work summarizes knowledge about these ubiquitous substances and their impact on female reproductive system, focusing on the developmental competence of mammalian oocytes.

Key words: endocrine disruptors, exposure, oocyte, hormones, embryo