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Author: M.A. Costa

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The endocannabinoid system: an emergent player in human placentation

M. A. Costa

PhD in Pharmaceutical Sciences by Faculdade de Farmácia, Universidade do Porto, Porto, Portugal

Address correspondence and reprint requests to:
Mariana Costa, PhD
E-mail: marianaac@sapo.pt

Highlights

- The endocannabinoid system (ECS) is expressed in human placenta
- Anandamide, 2-arachidonoyglycerol and tetrahydrocannabinol affect trophoblast biology
- Alterations in the expression of the ECS are observed in pathological placentas
- The endocannabinoid signaling may modulate the human placentation

Abstract

Cannabis sativa is the most consumed illegal drug around the world. Its consumption during pregnancy is associated with gestational complications, particularly with fetal growth restriction. Endocannabinoids are lipid molecules that act by activating the G-protein coupled cannabinoid receptors, which are also target of the phytocannabinoid Δ^9-tetrahydrocannabinol (THC). The endocannabinoid system (ECS) participates in distinct biological processes, including pain, inflammation, neuroprotection, and several reproductive events. In addition, an abnormal expression of ECS is associated with infertility and miscarriages. This manuscript will review and discuss the