

Patent Status	International PCT application field
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Treatment of obesity and the metabolic syndrome

IMIM and IMABIS foundations and CSIC have developed a family of fatty acid amides of amphetamine related compounds showing food intake inhibitory capacity in food deprived animal models, antioxidant capacity against LDL oxidation and reduction of hepatic fat in obesity animal models. These compounds may have application for treatment of obesity or the metabolic syndrome

An offer for Patent Licensing and/or R+D collaboration

Antiobesity properties

Cannabinoid receptor-1 (CB1) plays an important role in several diseases, as those related to control of food intake such as obesity or metabolic syndrome and also in cardiovascular diseases.

The peroxisome proliferator-activated receptors (PPARs) are a group of nuclear receptor proteins that function as transcription factors regulating the expression of genes. PPARs play essential roles in the regulation of lipids metabolism among other processes. Drugs like hypolipidemic fibrates act via the activation of PPAR-alpha receptors.

The newly synthesized compounds induce a decrease in food intake in a food deprived animal model. They are also potent inhibitors of LDL ex-vivo induced oxidation, with an antioxidant activity similar to that seen for hydroxytyrosol. They have also the capacity to reduce significantly fatty in liver in an obese metabolic syndrome animal model (Zucker rats).

A number of the series of compounds synthesized displayed affinity for the CB1 receptor, similar to the endocannabinoid anandamide, and some exhibited activity against PPAR-alpha. Observed pharmacodynamics of the biologically active compounds could be explained by CB1, PPAR-alpha, or a dual CB1/PPAR-alpha receptor interaction.

These compounds may have use for treatment of eating disorders such as obesity or metabolic syndrome, by means of satiety induction and control of food intake, and also for prevention of cardiovascular diseases related to metabolism of lipids.



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Main advantages and applications

The dual cannabinoid and PPAR interaction of newly synthesized compounds allows approaching obesity or the metabolic syndrome with two mechanisms of action, the control of food intake and an enhanced lipids clearance.

Preliminary studies suggest a very low toxicity, no cardiotoxicity and little interactions with metabolizing enzymes (no drug-drug interaction expected).

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