FIBICO –CANNABINOID AMINOQUINONE COMPOUNDS AS ACTIVATORS OF AMPK/SIRTUIN-1 PATHWAY.

Abstract

A research group from the Andalusian Public Health System (SSPA) has developed an invention that relates to cannabinoid aminoquinone compounds for use in the prevention and/or treatment of conditions mediated by AMPK/Sirtruin1 pathway, in particular with vascular senescence.

Description

Controlled cellular senescence is important to maintain tissue homeostasis; however, when cellular senescence is dysregulated leads to the over accumulation of senescent cell. Vascular aging (senescence) causes chronic hypertension, Alzheimer's disease, heart failure, ischemic heart disease, vascular calcification, and abdominal aortic aneurysm.

The present disclosure is based on cannabinoid aminoquinone compounds with exhibits activity in modulating the AMP-activated protein kinase (AMPK)/Sirtuin 1 (Sirt1) pathway and prevent endothelial vascular senescence. Also provided is a method of treating or preventing vascular diseases associated with vascular endothelial senescence. The method comprises administering to the mammal a compound defined in a manner sufficient to prevent and/or to treat vascular diseases associated with vascular endothelial senescence.

In other embodiments of the invention the compound for the claimed has a heterocycloalkyl ring selected from the group consisting of: tetrahydrofuran, pyrrolidine, or thiophene, piperidine, pyridine, or tetrahydrothiopyran, 1,4 dioxane, imidazole, pyrazole, pyrimidine, pyridazine, pyrazine, oxazole, thiazole, or morpholine.

Finally, the invention also covers pharmaceutical or nutraceutical composition comprising at least one compound for use in the treatment or prevention of a disease or condition that benefits from the modulation of the AMP-activated protein kinase (AMPK)/Sirtuin 1 (Sirt1) pathway.

Advantages

The main technical advantage is that a series of cannabinoid molecules have been developed with multitarget action and that acts on the AMPK/Sirt1 pathway.

Industrial/ intellectual protection

This technology is protected by international patent.

Objective of the Collaboration

Seek a collaboration that leads to the commercial exploitation of the invention presented.

Clasification

Activity/Type: Cardiovascular
Pathology: vascular senescence

Representative Institution and Inventor

The principal investigator behind the innovation is Eduardo Muñoz Blanco, a researcher in the GC04 group Inflammation and cancer.

The development of the project has been possible thanks to the Andalusian Health Service and the University of Cordoba.

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