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TI

Cyclipostins, Novel hormone-sensitive lipase inhibitors from Streptomyces sp. DSM 13381: II. Isolation, structure elucidation and biological properties.

AU

Vertesy, Laszlo [Reprint author]; Beck, Bernd; Broenstrup, Mark; Ehrlich, Klaus; Kurz, Michael; Mueller, Guenter; Schummer, Dietmar; Seibert, Gerhard

CS

LG Natural Products Research, H 780, Frankfurt/Main, Germany
Laszlo.Vertesy@aventis.com

SO

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Article

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ED

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AB

Hormone-sensitive lipase (HSL) is a key enzyme of lipid metabolism and its control is therefore a target in the treatment of diabetes mellitus. Cultures of the Streptomyces species DSM 13381 have been shown to potently inhibit HSL. Ten inhibitors of HSL, termed cyclipostins, have been isolated from the mycelium of this microorganism and a further nine related compounds detected. Their structures were characterized by 2-D NMR experiments and by mass spectrometry and were found to comprise neutral cyclic enol phosphate esters with an additional gamma-lactone ring. On account of their ester-bound fatty alcohol side chain, the cyclipostins have physicochemical properties similar to those of triglycerides. The outstanding characteristic of the cyclipostins is their strong anti-HSL activity, with IC50 values in the nanomolar range.

CC

Biochemistry studies - Lipids 10066
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Pharmacology - Endocrine system 22016
Physiology and biochemistry of bacteria 31000

IT

Major Concepts
Metabolism; Pharmacology

IT

Parts, Structures, & Systems of Organisms
mycelium

IT

Diseases
diabetes mellitus: endocrine disease/pancreas, metabolic disease, drug therapy
Diabetes Mellitus (MeSH)

IT

Chemicals & Biochemicals
cyclic enol phosphate esters; cyclipostins: antidiabetic-drug, enzyme inhibitor-drug, biological properties, structure; hormone-sensitive lipase; triglycerides

IT

Methods & Equipment

mass spectrometry: Spectrum Analysis Techniques, analytical method;
two-dimensional NMR: analytical method

IT

Miscellaneous Descriptors
lipid metabolism

ORGN

Classifier
Streptomycetes and Related Genera 08840
Super Taxa
Actinomycetes and Related Organisms; Eubacteria; Bacteria;
Microorganisms
Organism Name
Streptomyces sp.: strain-DSM 13381
Taxa Notes
Bacteria, Eubacteria, Microorganisms

RN

372092-03-0 (CYCLIPOSTINS)