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TI

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

AU

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DT

Article

LA

English

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

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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)

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

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Methods & Equipment

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

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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)