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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

Biochemistry studies - Lipids 10066
Pathology - Therapy 12512
Metabolism - General metabolism and metabolic pathways 13002
Metabolism - Metabolic disorders 13020
Endocrine - Pancreas 17008
Pharmacology - General 22002
Pharmacology - Endocrine system 22016
Physiology and biochemistry of bacteria 31000

IT

Major Concepts
Metabolism; Pharmacology

IT

Parts, Structures, & Systems of Organisms
mycelium

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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

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372092-03-0 (CYCLIPOSTINS)