

Harnessing Enzymatic Promiscuity in Myxochelin Biosynthesis for the Production of 5-Lipoxygenase Inhibitors.

Korp J, König S, Schieferdecker S, Dahse HM, König GM, Werz O, Nett M (2015) Harnessing Enzymatic Promiscuity in Myxochelin Biosynthesis for the Production of 5-Lipoxygenase Inhibitors. *Chembiochem* , [PubMed](#)

Projects

Functionality and plasticity of bacterial polyketide synthases
[Details](#)

Abstract

The siderophore myxochelin A is a potent inhibitor of human 5-lipoxygenase (5-LO). To clarify whether the iron-chelating properties of myxochelin A are responsible for this activity, several analogues of this compound were generated in the native producer *Pyxidicoccus fallax* by precursor-directed biosynthesis. Testing in a cell-free assay unveiled three derivatives with bioactivity comparable with that of myxochelin A. Furthermore, it became evident that inhibition of 5-LO by myxochelins does not correlate with their iron affinities.

Identifier

doi: 10.1002/cbic.201500446 PMID: 26416255