Stereoselective synthesis of unnatural (2S,3S)-6-hydroxy-4-sphingenine-containing sphingolipids.

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Abstract

6-Hydroxy-(4*E*)-sphingenine-containing sphingolipids are found in mammalian and bacterial membranes and have multiple intra- and intercellular functions. Most sphingolipids contain a (2S,3R)-2-amino-1,3-diol core structure, but only limited examples of unnatural (2*S*,3*S*)-2-amino-1,3-diol derivates have so far been reported. Using a underexplored hydrozirconation-transmetalation reaction and an unusal three-step-one-pot deprotection sequence, we were able to synthesize several unnatural (2*S*,3*S*)-6-hydroxy-(4*E*)-sphingenine-containing sphingolipids in only three (protected) or four (deprotected) consecutive steps, respectively, including a fluoresence-labled derivative suitable for future biological studies.

Involved units

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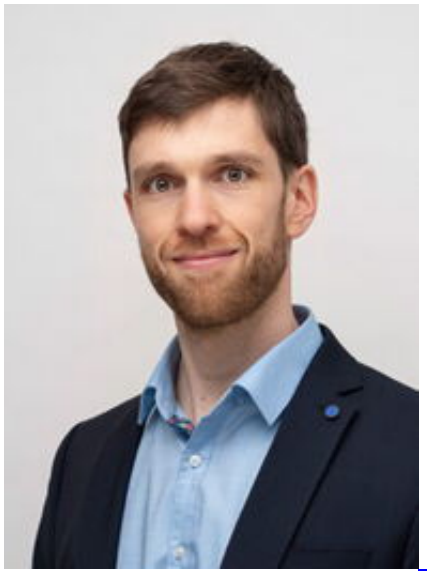
Details



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Details

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Topics

Natural product synthesis

Identifier

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