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Title: Direct lactonization of α -amino γ,δ -unsaturated carboxylic acid esters via olefin activation: stereo- and regioselective production of homoserine lactone scaffolds having contiguous stereocenters

Authors: Aslam, N.A. (/jspui/browse?type=author&value=Aslam%2C+N.A.)
Babu, S.A. (/jspui/browse?type=author&value=Babu%2C+S.A.)

Keywords: Amino acid derivatives
Butyrolactone
Homoserine lactone
Triflic acid
Regio- and stereoselective synthesis
Unsaturated carboxylic acid esters

Issue Date: 2014

Publisher: Elsevier

Citation: Tetrahedron, 70(37), pp.6402-6419.

Abstract: Triflic acid-mediated stereoselective direct lactonization of a variety of α -amino γ,δ -unsaturated carboxylic acid esters and the construction of new γ -butyrolactone structural motifs are reported. Several α -amino γ,δ -unsaturated carboxylic acid esters underwent stereo- and regioselective 1,5-cyclization and afforded a variety of highly substituted homoserine lactone scaffolds having contiguous stereocenters. The direct lactonization of the chiral α -amino γ,δ -unsaturated carboxylic acid esters with triflic acid led to the enantioselective synthesis of the novel homoserine lactones. A plausible mechanism for the direct lactonization of α -amino γ,δ -unsaturated carboxylic acid esters is presented. The stereochemistry of major isomers 3f, 7a, 7b, and 7d was unambiguously established from the X-ray structure analysis.

URI: <https://www.sciencedirect.com/science/article/pii/S0040402014010412?via%3Dihub>
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