Configurational and Conformational Studies of Bicyclic Glucofuranoso-imidazolidine-2-selones by NMR

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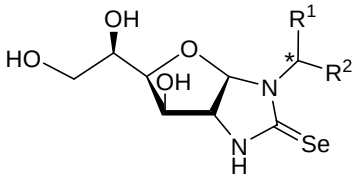
Currently there is an increasing interest in developing methods for the determination of the enantiomeric excess and the absolute configurations of chiral compounds, not only in the asymmetric synthesis area, but also in the pharmaceutical industry context.[1] A suitable procedure for studying absolute configurations is the use of *Chiral Derivatizing Agents* (CDA's) for converting enantiomers into diastereoisomeric mixtures that can be analyzed by NMR spectroscopy.[2] Silks and co-workers reported[3] the use of cyclic selenocarbamates for the detection and quantification of remotely disposed chiral centers.

We have prepared diastereomeric glucofuranoso[2,1-*d*]imidazolidine-2-selones **1** from both racemic and chiral primary amines, and have studied their applicability for the determination by NMR of the enantiomeric purity of chiral amines. We also report the synthesis of *N*-aryl bicyclic glucofuranoso-imidazolidine-2-selones **2** bearing aryl groups with bulky *ortho*-substituents; these compounds show atropisomers in their NMR spectra, as reported for their isosteric imidazolidine-2-thiones and 2-ones.[4]



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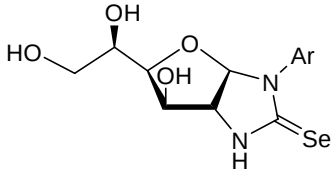

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References

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[4] Avalos, M.; Babiano, R.; Cintas, P.; Hursthouse, M. B.; Jiménez, J. L.; Light, M. E.; Palacios, J. C.; Silvero, G. *Tetrahedron* **2005**, *61*, 7945-7959; *ibid.* **2005**, 61, 7931-7944.

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