SYNTHESIS OF STEREOISOMERIC 2-IMINO-1,3-OXAZINE AND 2-IMINO-1,3-THIAZINE DERIVATIVES WITH CONDENSED SKELETON

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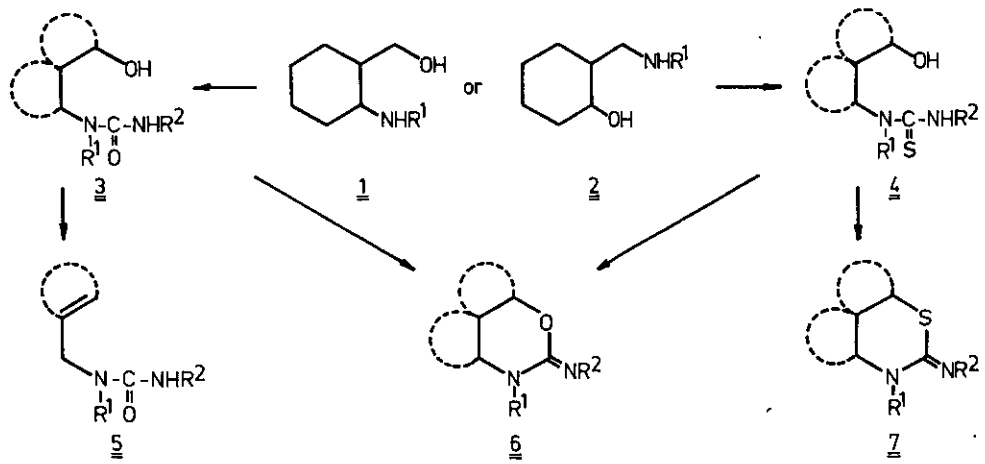
As a continuation of our synthetic and stereochemical studies[1] on bicyclic and tricyclic saturated compounds containing two hetero atoms, our present aim was the synthesis and stereochemical investigation of 2-imino-1,3-oxazines and 2-imino-1,3-thiazines. As bioisosteric analogues of guanidine derivatives, the synthesized compounds are of interest for pharmacological purposes.

From cis or trans-1,3-aminoalcohols (1, 2) the urea and thiourea derivatives 3 and 4 were synthesized, from which, depending upon the reaction conditions, compounds 5, 6 or 7 were obtained. The ring-closure reactions starting from 1 occurred with retention, and those from 2 with retention or inversion, depending on the configuration and reagents.



Configuration: cis or trans; R^1= H, CH_3, $C_6H_5CH_2$; R^2= CH_3, C_6H_5

The favoured conformations of the cis isomers of 1,3-oxazines and 1,3-thiazines were determined by ^{1}H-nmr spectroscopy. It was found that the predominant conformation depends on the bulk of the substituent attached to the annellation point.

1. F. Fülöp, M. S. El-Gharib, A. Sohajda, G. Bernáth, J. Kóbor, Gy. Dombi: Saturated Heterocycles, Part 47. Heterocycles, accepted for publication