

SYNTHESIS OF STEROIDAL HETEROCYCLES BY 1,3-DIPOLAR CYCLOADDITION

Erzsébet Mernyák, Gabriella Benedek, Gyula Schneider, János Wölfling

University of Szeged, Department of Organic Chemistry, H-6720 Szeged, Dóm tér 8.

The D-secoaldehyde (**1**) of the 13 α -estrone-3-methylether was transformed into dipoles, of which intra- and intermolecular dipolar cycloaddition reactions were investigated. Cyclization of oximes (**2**) with $\text{BF}_3 \cdot \text{OEt}_2$ led to isoxazolidines (**3**) with *cis* ring anellations. The halogen-induced formation of cyclic nitrones (**4**) and their subsequent intermolecular 1,3-dipolar cycloaddition with *N*-phenylmaleimide (NPM) yielded the cycloadducts (**5**) with high chemo- and stereoselectivity. Reactions of the hydrazone (**6**) and the aldazine (**8**) with Lewis acid yielded nitrogen-containing 13 α -estrone derivatives (**7, 9**).

