A SIMPLE ENANTIOSELECTIVE SYNTHESIS OF β-LACTAMS

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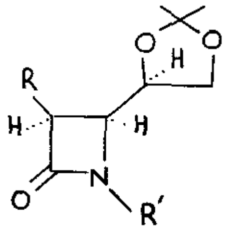
A complete diastereoselection is observed during the cyclocondensation of activated glycine derivatives with aldimines derived from L-(S)-glyceraldehyde acetonide. Compounds of type I are isolated in high optical and chemical yields. They are converted into key intermediates used in the syntheses of various mono- and bicylic ß-lactam antibiotics. A mechanism is suggested to explain this remarkable diastereoselection. Since L-(S)-glyceraldehyde acetonide is easily accessible from L-*ascorbic* acid, the reported reaction sequence is a cheap and practical enantioselective synthesis of ß-lactams.



R: phthalimido, $MeO_2C-CH=C(CH_3)-NH$

R': aryl, CH_2-aryl