

Cycloaddition of 5-substituted 1-pyrroline 1-oxide and conversion of the nitrono cycloadducts into cis- and trans-2,5-disubstituted pyrrolidines.

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Abstract

A study of the regiochem. behavior of the oxidn. of 2-substituted-1-hydroxypyrrolidines I (R = Me, CH₂Ph) leading to aldo- and keto-nitrones has been carried out. The mechanism of the peracid induced ring opening reaction of isoxazolidines II (R₁ = Ph, CH₂OH, CH₂OSiMe₂CMe₃, CH₂CH₂CH₂OH, Bu, R₂ = H, CO₂Me, CH₂OH, CH₂OSiMe₂CMe₃) is now firmly established. Second cycloaddn. reaction of 5-substituted 1-pyrroline 1-oxides III provides an efficient and stereoselective entry into the 2,5-disubstituted pyrrolidines trans- and cis-IV.

