

[Bull. Chem. Soc. Jpn., **69**, 195-205 (1996)]

[Lab. of Pharm. Synthetic Chemistry]

Alcoholysis of Epoxides Catalyzed by Tetracyanoethylene and Dicyanoketene Acetals.

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A typical π -acid tetracyanoethylene and capto-dative olefin dicyanoketene acetals were found to catalyze stereospecific alcoholysis of epoxides at the ambient temperature to 50 °C in good yields. Mildness and significant chemoselectivity of the catalysts were demonstrated by intactness of tetrahydropyranyl ether and ethylene acetal groups. A novel regioselectivity associated with anchimeric assistance of the ethereal group on the side chain was observed in the ring opening reaction of the 1,2-disubstituted epoxides.

[Heterocycles, **43**, 11-14 (1996)]

[Lab. of Pharm. Synthetic Chemistry]

Synthesis of Optically Active, Unusual, and Biologically Important Hydroxy-amino Acids from D-Glucosamine.

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Manipulation of D-glucosamine as a chiral pool including stereoinversion of the C3-hydroxyl group, degradation of the C6-carbon, and/or one carbon homologation at the C1-position realized chiral syntheses of (2*S*,3*S*)-dihydroxy-(4*S*)-amino acid moieties, important structural components of a gastroprotective substance AI-77-B and a group of antitumor substances calyculins.

[Chem. Pharm. Bull., **44**, 454-456 (1996)]

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C_2 -Symmetric *N*-(β -Mercaptoethyl)pyrrolidine as a Chiral Catalyst Ligand in the Addition Reaction of Aldehydes and Diethylzinc.

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A chiral C_2 -symmetric *N*-(β -mercaptoethyl)pyrrolidine bearing 6-membered benzylidene acetal functionalities at the 2,3- and 4,5-positions was found to exhibit high efficiency in the asymmetric addition reaction of aldehydes with diethylzinc.