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[Lab. of Pharm. Synthetic Chemistry]

**Stereoselective Reduction of Chiral 3-(*p*-Tolylsulfinyl)-2-thienyl
Ketones. A Facile Entry to Optically Active Thienylcarbinols.**

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Stereoselective reduction of chiral 3-(*p*-tolylsulfinyl)-2-thienyl ketones with diisobutylaluminum hydride (DIBAL) or lithium tri-*sec*-butylborohydride (L-Selectride) has been achieved. Reduction of the ketones with DIBAL in the presence of a Lewis acid or with L-Selectride afforded predominantly the corresponding thienyl carbinols, while the reduction with DIBAL alone gave the other diastereoisomeric alcohols as the major product. This method has been successfully applied to an efficient route to chiral thienyl alcohols.

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[Lab. of Pharm. Synthetic Chemistry]

**Chiral Synthesis of Dihydroxyamino Acid Moieties of AI-77-B and
Calyculins from D-Glucosamine.**

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Manipulation of *cis* (4*S*,5*S*)-4,5-disubstituted 2-oxazolidinones, derived easily from D-glucosamine as a chiral pool, including degradation of the C6-carbon and/or one-carbon homologation at the C1-position allowed chiral syntheses of (2*S*,3*S*)-dihydroxy-(4*S*)-amino acid moieties, which are important structural components of a gastroprotective substance, AI-77-B, and a group of antitumor substances, calyculins.

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[Lab. of Pharm. Synthetic Chemistry]

**A highly asymmetric, Lewis Acid-catalysed Diels-Alder reaction
using optically active 2-(3-tolyl-*p*-sulfinyl)furyl α , β -unsaturated
ketones as a dienophile.**

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The Diels-Alder reaction of chiral 2-(3-tolyl-*p*-sulfinyl)furyl α , β -unsaturated ketones with cyclopentadiene in the presence of a Lewis acid proceeds smoothly to give the corresponding *endo* adducts, respectively, in excellent yield with high diastereoselectivity.