

## Abstract

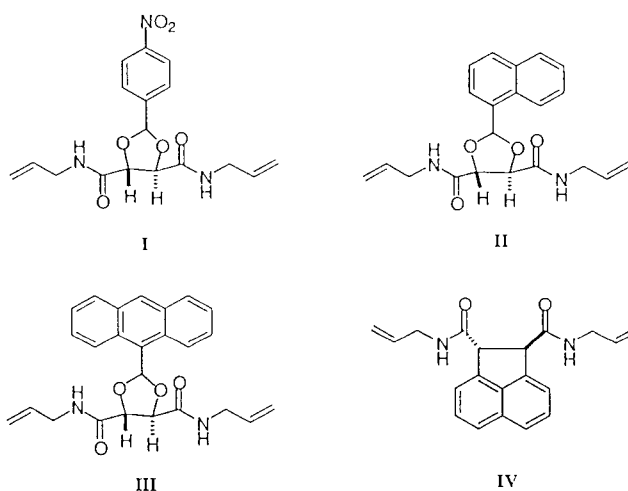
### Some New Strategies in Chiral Stationary Phase Development

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Four conformationally restricted *bis*-allylamide chiral selectors based on  $C_2$ -symmetric dicarboxylic acids have been synthesised. The selectors have been investigated and evaluated with both NMR and HPLC in order to get information about their chiral discriminating abilities.



Each selector was immobilised as a polymer on vinylsilica and evaluated as a chiral stationary phase by HPLC using normal phase conditions. A series of benzodiazepinones were successfully separated on the CSPs and chromatographic results show that multiple hydrogen bonding interactions are involved in the retention mechanisms.

The equilibrium constants ( $K$ ) for formation of the diastereomeric complexes between the chiral selector *N,N'*-diallyl-*L*-tartardiamide *bis*-(4-*tert*-butylbenzoate) (TBB) and *O,O'*-dibenzoyltartaric acid (DBTA) enantiomers have been calculated from NMR chemical shift data. An extensive explanation of the mathematical treatment of the NMR chemical shift data is also given. The results obtained from the NMR data are compared to the results obtained from the chromatographic separation of DBTA on the chiral selector Kromasil-CHI-TBB. These results show that a satisfactory correlation exists between the NMR and chromatographic data.

**Keywords:** Chiral chromatography, chiral stationary phase, *bis*-allylamide chiral selector, equilibrium constant, diastereomeric complex, non-selective interactions.