

## Separation of Enantiomers of Herbicides Using Polysaccharide based Chiral Stationary Phases

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Herbicides are used for destruction of different plants. Herbicides are divided into two groups: general herbicides - which can destruct all types of plants and selective herbicides which can destruct only definite types of plants. The most herbicides belong to organic compounds and they possess high physiological activity. They are efficiently used for destruction of weeds.

Enantioseparation of eight chiral herbicides were studied on polysaccharide based chiral selectors using polar organic, mixture of hydrocarbon–alcohol and water–organic solvent as mobile phases. Influence of the structure of chiral selector and the composition of the mobile phase on the separation of the enantiomers was studied. The structure of the chiral selector has a strong influence on the separation of enantiomer – in particular the nature and position of substituents in benzene ring. The enantiomers of imazalil are partially separated on Cellulose-2 column, on Cellulose-4 column the separation is baseline. Imazapic cannot be separated on Cellulose-2, separation is baseline on Cellulose-4. When the pendand groups are the same imazaquin cannot be separated on cellulose based column but is partially separated on amylose based column.

Imazalil sulfate cannot be separated on amylose-based column but is partially separated on cellulose based column. Both selectors contain methyl radicals in benzene ring in the positions 3 and 5.

The composition of mobile phase also has influence on separation. For example in the case of imazalil, on cellulose-3 column, increase of water content in mobile phase improves the separation and increases selectivity.

Keywords: chiral herbicides, polysaccharide-based chiral columns, separation of enantiomers.