

# Chromatographic Separation of Tröger's Base in a Batch Column

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## Abstract

The objective of the study is to investigate the chiral separation of Tröger's base enantiomers using batch chromatography. Chiral separation of enantiomers is an important separation process, especially in the pharmaceutical field where compounds of high purity must be produced. Because of its resolution, chromatography is often the preferred method for chiral separations.

The separation of Tröger's base is resolved by using the COMSOL Multiphysics® software. It is modeled by one dimension geometry, having the length of the column set and computed with a time-dependent solver. Furthermore, the physics set of equations used is Species transport in porous media which is based on an equilibrium dispersive model.

Through COMSOL Multiphysics®, different parameters, such as flow rate, total concentration pulse input and rectangular step time on the outlet concentration profile, were varied to investigate the effect of these parameters on the separation performance indicators: purity, productivity and solvent consumption.