# The effect of temperature on separation of enantiomers with coated and covalently immobilized polysaccharide-based chiral stationary phases in high-performance liquid chromatography

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This presentation describes our attempt to re-visit the role of temperature in separation of enantiomers with polysaccharide-based chiral columns in high-performance liquid chromatography (HPLC). Rarely observed increased retention and separation factor with increasing temperature, as well as temperature dependent reversal of enantiomer elution orderare reported for few arylpropionic acid derivatives. Chiral columns with coated and covalently immobilized chiral selectors were compared from the viewpoint of effect of temperature on analyte retention, enantiomer separation and enantiomer elution order. Thermodynamic parameters were calculated for analyte transfer from the liquid phase to the chiral stationary phase and the effect of temperature on chiral selectors was investigated by using differential scanning calorimetry (DSC). As the results of DSC, as well as chromatographic studies indicate, polysaccharide-based chiral selectors undergo some kind of transition at elevated temperature that is not reversible in the thermodynamic sense of this term.

**References**:

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