

## **Gallopamil racemate separation using UV spectrophotometer with preparative chromatographic column**

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Racemate is a mixture of enantiomers and these enantiomers are generally present in equal proportions in synthetically manufactured racemates which are being used as pharmaceuticals drugs. The enantiomers are two chemically identical molecular species but differ from each other as non-super imposable mirror images. These enantiomers are also known as chiral elements. The synthetic racemates provide not only mirror images, but also two different individuals in the organism relative to pharmacodynamics and pharmacokinetics. Hence separation of synthetic racemate has become an essential task in recent days and the present article describes a method for separating Gallopamil racemate. Gallopamil Racemate, which is a mixture of R and S enantiomer is a drug to treat cardiovascular diseases and is more potent than Verapamil, the drug being currently prescribed. The UV spectrophotometer provided with a flow cell attached with the preparative chromatographic column packed with alpha1-acid glycoprotein (AGP), purchased from M/s. Chromtech (available at Department of Chemical and Biomolecular Engineering, NUS, Singapore) was used in the present study. The experimental chromatogram obtained in the present work was used to develop a model for the prediction of concentration profile of Gallopamil enantiomers coming out the preparative column. The proposed speech will also describe the methodology for developing a continuous separation of Gallopamil racemate based on the model developed using experimental chromatogram. Since evaluating multiple columns and mobile phases is expensive in terms of time, materials, and effort, this methodology will be very useful to Indian pharmaceutical companies and research institutes to focus on racemic separations.

### **Biography**

P. Kalaichelvi has completed her Ph.D at the age of 30 years from Anna University, Chennai and got selected for BOYSCAST fellowship from DST, India for undergoing research training on racemate separation under the guidance of A.K. Ray and his research group, Department of Chemical and Biomolecular Engineering, National University of Singapore. She has published more than 25 papers in reputed journals and serving as an Associate Professor in the Department of Chemical Engineering, National Institute of Technology, Tiruchirappalli, Tamil Nadu.

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