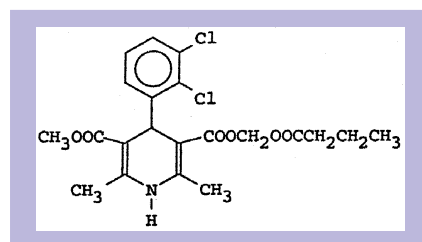


Determination of enantiomeric purity

One of the major areas where **CHIRAL-AGP**, **CHIRAL-CBH** and **CHIRAL-HSA** columns are used is in the determination of enantiomeric purity, either on bulk drugs or on finished drug products.

The aim is of course to quantify the small amount of the unwanted enantiomer. To do this, a sample containing a high concentration of the preferred enantiomer, is injected onto the column in order to be able to detect the small impurity. Below is an example where the two enantiomers of disopyramide have been chromatographed separately on the **CHIRAL-AGP** column. Small impurities of the other enantiomer have been found in each:

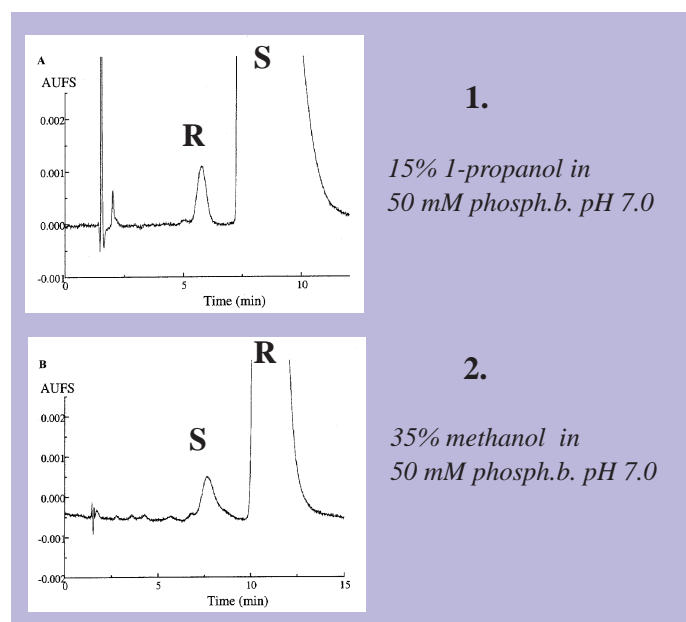
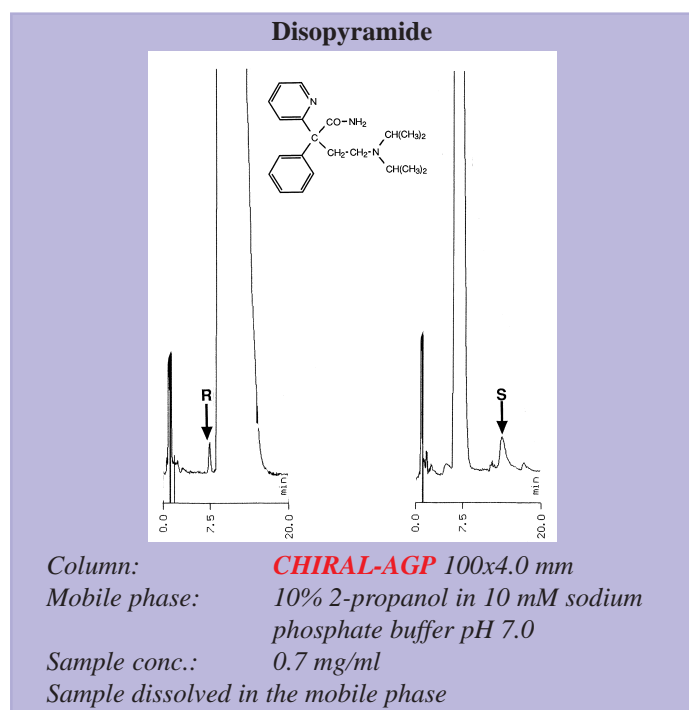
The authors have investigated the influence of different organic modifiers on the retention order of the enantiomers of clevidipine:



They obtained the following results:

<u>Solvent</u>	<u>Retention order</u>
Methanol (36%)	S, R
Ethanol (30%)	S, R
1-propanol (16%)	R, S
Acetonitrile (20%)	S, R
2-propanol (20%)	No resolution

This made it possible to optimize two methods for determination of enantiomeric purity:



In order to facilitate the quantification of the small impurity peak it is of advantage to have it eluting in front of the large peak. As this is not always the case, there are still some possibilities to change the retention order of the enantiomers.

For some compounds it may be worth testing different solvents as organic modifier. Such an example is presented in an article by A. Karlsson at AstraZeneca in *Chromatographia*, vol.53 (2001) 135-139.

Please note that these conditions are suitable for clevidipine. It may however be worth testing different modifiers also for other compounds in order to obtain similar results.

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