

## Fast screening on CHIRAL-AGP, CHIRAL-CBH and CHIRAL-HSA

By applying our screening methods it is possible to develop methods very fast for an extremely broad range of compounds. Two different approaches can be chosen:

- I. With sample characterization
- II. Without sample characterization

### I. Screening with sample characterization

This is the recommended screening method. The advantage of the method is that by classifying the sample using the six groups in the table below, it is possible to choose the starting columns and the starting mobile phase. The time to reach an optimized method will be shorter with this approach.

In the table below six different groups of compounds are listed. It is also indicated which columns should be tested for each compound group.

Group	Type of compound	AGP	CBH	HSA
1.	Hydrophobic amine	X	X	
2.	Hydrophilic amine	X	X	
3.	Nonprotolyte	X		X
4.	Ampholyte	X		X
5.	Weak acid	X		X
6.	Strong acid	X		X

When the sample has been characterized according to the table, the appropriate columns are tested using the mobile phases outlined below.

### Mobile phases

In the next table is a list of suggested starting mobile phases for the different groups of compounds. As can be seen, there are only a few mobile phases that cover the extremely broad range of compounds on all three columns.

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#### Starting mobile phase Compound group 1:

**CHIRAL-AGP:** 10 mM amm. or sod. acetate pH 4.5

**CHIRAL-CBH:** 5% 2-propanol in 10 mM sod.ph.b. pH 6.0

#### Starting mobile phase Compound groups 2, 3 and 5:

**All columns:** 5% 2-propanol in 10 mM sod.ph.b. pH 7.0

#### Starting mobile phase Compound groups 4 and 6:

**All columns:** 10 mM sod.ph.b. pH 7.0

The results obtained using the starting mobile phase can then be developed further using the Method Development Schemes supplied with each column.

### II. Screening without sample characterization

This is a screening method where characterization of the sample is not needed. All types of compounds are tested on all three columns using three different mobile phases:

- 5% 2-propanol in 10 mM sod.ph.b. pH 7.0
- 5% 2-propanol in 10 mM sod.ph.b. pH 6.0
- 2% 2-propanol in 10 mM amm.ac.b. pH 5.0

Depending on the results obtained when using these three mobile phases, the most suitable column is chosen for method development. The Method Development Scheme for that particular column is used for optimization.

Although this method might seem tempting compared to the first approach, as it is not necessary to determine the character of the sample, there is a possibility to miss out on a separation. **CHIRAL-AGP**, **CHIRAL-CBH** and **CHIRAL-HSA** all have the extra dimension that enantioselectivity can be induced by changes in the mobile phase (i.e. pH, modifier etc.).

With the use of the first approach above, **screening with sample characterization**, a very large amount of compounds are tested and resolved every year in the Free Screening Service provided by ChromTech.