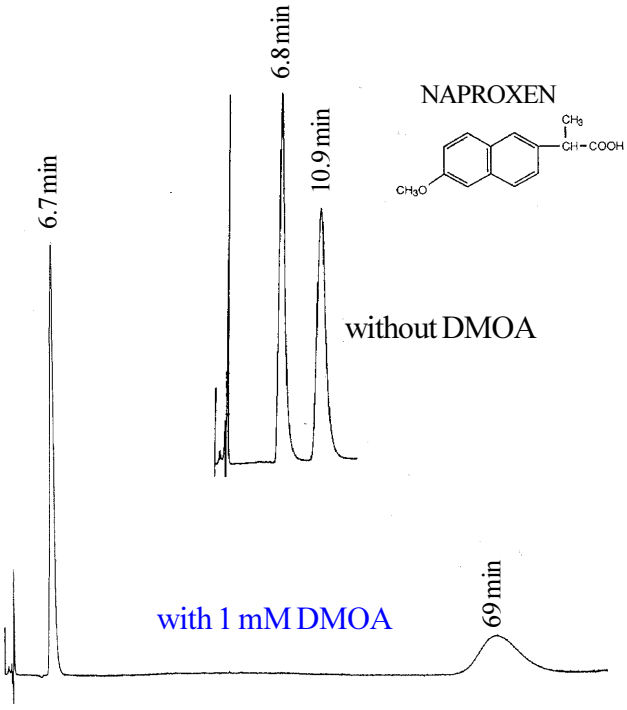
Magic additives

The majority of all separations performed on the **CHIRAL-AGP** column have been performed using simple mobile phases consisting of a buffer and an uncharged organic modifier (2-propanol, acetonitrile etc.). However, for some compounds, the addition of a charged modifier may induce or improve the enantioselectivity and/or improve the separation efficiency and the resolution. Examples of charged modifiers that have been used are octanoic, hexanoic and heptanoic acid, N,N-dimethyloctylamine (DMOA), tetraethyl- and tetrapropyl-ammonium bromide. Advice on when to use different types of charged modifiers can be found in the Method Development Scheme shipped with each column.

A very illustrative example on the effect that can be obtained with charged modifiers is the addition of DMOA to the mobile phase when chromatographing naproxen.



*Column: **CHIRAL-AGP** 100x4.0 mm*

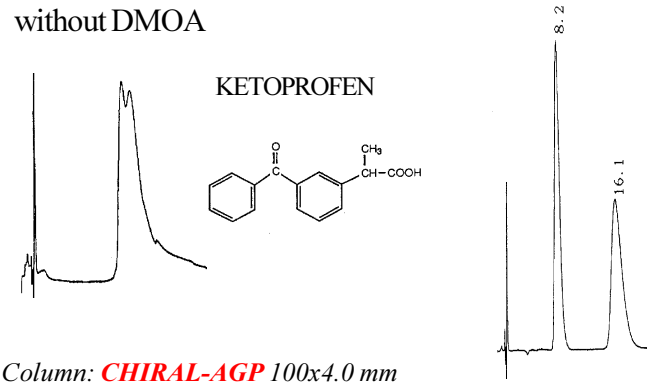
Mobile phase: 10 mM sodium phosphate buffer pH 7.0

Flow rate: 0.9 ml/min

Detection: UV 225 nm

Note the extreme effect on the second eluted enantiomer of naproxen.

DMOA strongly affects the enantioselectivity of all the profens and other acidic compounds, however the most dramatic effect is obtained for naproxen. Another example is ketoprofen, where DMOA is essential for the separation:



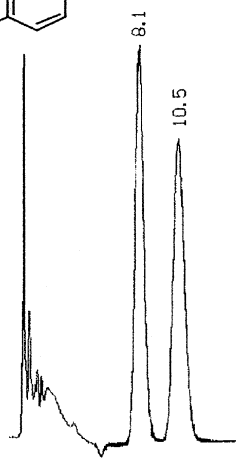
*Column: **CHIRAL-AGP** 100x4.0 mm*

Mobile phase: 10 mM sodium phosphate buffer pH 7.0

Flow rate: 0.9 ml/min *Detection: UV 225 nm*

DMOA can also be used to improve the chromatography of basic compounds on **CHIRAL-AGP**. An example is shown below:

CLOPIDOGREL



*Column: **CHIRAL-AGP** 100x4.0 mm*

Mobile phase: 16% acetonitrile and 1 mM DMOA in 10 mM ammonium acetate

Flow rate: 0.8 ml/min

Detection: UV 225 nm

Without the addition of **DMOA** to the mobile phase the separation of clopidogrel is very poor or non-excisting, depending on the mobile phase.

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