



## Method Development Strategies for Cogent TYPE-C™

Silica Based, Bonded Stationary Phases.

*Using Aqueous Normal Phase (ANP)*

These columns can be used for reverse (RP) or normal phase (ONP) mode as well as ANP.

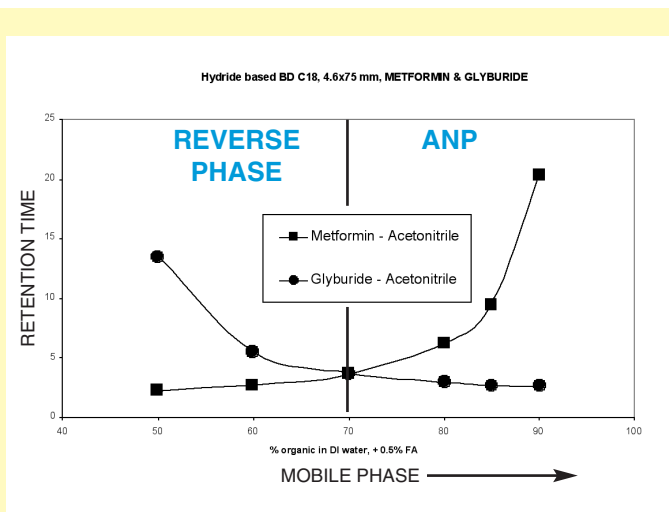
Use typical method development strategy when using these columns in RP or ONP modes.

## INTRODUCTION

### Cogent TYPE-C™ Silica Based Bonded Stationary Phases

Cogent Type C™ Silica based, bonded stationary phases (based on silica hydride surfaces as opposed to silanols that are present on all other commercial stationary phases) have the ability to retain polar solutes at high concentrations of the organic component while maintaining an aqueous component in the mobile phase. The Cogent Type-C™ phases (Bidentate C18, Bidentate C8, UDC-Cholesterol and UDA) all possess this capability. The exact composition of the mobile phase where aqueous normal phase (ANP) retention begins depends on the solute as well as the stationary phase selected.

Because of the attached organic group that is part of the stationary phase, the Type-C columns can also retain nonpolar compounds based on the typical reversed phase mechanism. The diagram below illustrates how this dual retention capability works for both polar (metformin) and nonpolar (glyburide) compounds:



## QUICK START INSTRUCTIONS

Aqueous Normal Phase (ANP)

### A generic strategy for using the ANP method is relatively simple.

1. Start with a mobile phase composition of 50:50 acetonitrile/water (begin with 20:80 acetonitrile/water for UDA). As shown previously, most polar solutes will have little or no retention under these conditions.
2. Change the mobile phase successively to 60, 70 and 80% acetonitrile until the desired retention (or separation of multiple components) is achieved.
3. If suitable retention or separation is not obtained by 80% acetonitrile, then successively change the mobile phase to 85, 90, 95% acetonitrile until sufficient retention or separation is achieved.
4. In a few cases, strong and even infinite retention is possible. If this occurs, flush the column with a 10:90 acetonitrile/water mobile phase to remove the strongly retained compound. Next start increasing the acetonitrile to 20, 30 and 40% until the desired retention or separation is achieved.
5. If these strategies are not working, please consult our customer service support at [technical.service@mtc-usa.com](mailto:technical.service@mtc-usa.com).

For more information visit [www.MTC-USA.com](http://www.MTC-USA.com)

**Aqueous  
Normal Phase:**  
*Achieve  
Normal Phase  
Separation  
with Reverse  
Phase  
Solvents*



**Q. What is Selectivity3™?**

A. Selectivity3™ is our term describing what our Cogent TYPE-C™ silica based HPLC columns can do. Due to their chemical nature and the way they adsorb and de-sorb the mobile or liquid phase, one column can perform Reverse Phase, Normal Phase or Aqueous Normal Phase.

For Normal or Reverse Phase starting points contact:  
technical.service@mtc-usa.com



**Quick Method Development  
Strategy for  
Cogent TYPE-C™**

Silica Based Bonded  
Stationary Phases

*Using Aqueous  
Normal Phase (ANP)*



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**METHOD DEVELOPMENT**