

What will the pressure be with a mobile phase of 90% methanol and 10% DI water with a 4.6 x 250mm Cogent TYPE-C HPLC column – FAQ

There are a number of points to address in answering this question:

- **Factors that affect pressure.** In addition to the mobile phase composition, a number of other parameters will determine the pressure. These include flow rate, temperature, and instrument tubing. Therefore it is difficult to say what the pressure will be in general cases. Using a 4.6 x 250mm column, a flow rate of 1.0 mL/min, a temperature of 25 °C, a mobile phase of 90% methanol/ 10% DI water, and an HP 1100 instrument, we obtained a pressure of 165 **bar**. However, you may obtain a different pressure due to differences in your own instrument's tubing.
- **Column Length.** You will obtain a higher pressure using a 250mm length column compared to 150mm. If you are already obtaining good resolution with a 250mm column, try a shorter length and see if the resolution is still acceptable. You may be able to obtain good chromatographic results with a lower run time and less solvent consumption.
- **Viscosity of methanol.** Note that the pressure will be higher when using methanol compare to acetonitrile, a more commonly used mobile phase solvent. This is because methanol is more viscous than acetonitrile. Therefore you may want to reconsider your choice of solvent for this reason. The Cogent TYPE-C Silica™ columns can be used up to 4000 psi during runs without damage. However, your instrument flow cell may have a lower pressure threshold. Please consult with your instrument manufacturer to prevent damage to the components if you plan to operate at higher pressures.
- **Aqueous Normal Phase ANP compatibility.** If you are using the column in the **Aqueous Normal Phase** ANP mode, methanol will not be the best choice. ANP works best with polar aprotic solvents as the organic component. Viable choices include acetonitrile, acetone, and Tetrahydrofuran THF. You may want to reconsider your solvent selection for this reason.

