

## Verifying New Cogent HPLC Column Performance - Tech Information

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### Verifying New Cogent™ HPLC Column Performance

When you receive a new Cogent™ TYPE-C™ HPLC column, performing a quick verification check ensures that the column is operating at peak performance before you rely on it for analytical work.

This simple process protects data quality, shortens troubleshooting time, and helps determine whether an issue arises from the instrument or the column itself.

#### 1. Compare Your Results to the Included QC Chromatogram

Every Cogent™ column is shipped with a packing test chromatogram that reflects its performance at the time of manufacturing. This includes:

- Peak shape / symmetry
- Plate count / efficiency
- Test conditions and analytes used

By replicating these exact conditions—same mobile phase, test analytes, flow rate, and temperature—you can perform a like-for-like comparison. Matching performance confirms that the column is functioning properly.

#### 2. Evaluate Peak Symmetry and Efficiency

Two characteristics that are especially important for verifying a new column are:

- Peak symmetry: should closely match the QC reference.
- Efficiency: measured by theoretical plates, should be comparable to the documentation.

Significant deviations may indicate improper installation, instrument dead volume issues, or column damage.

#### 3. Identify Whether Issues Are Column-Related or System-Related

If results are unexpectedly poor, verification helps pinpoint the cause:

- Column-related issues — rare, but possible if something slipped through QC.
- Instrument-related issues — much more common, including excessive extra-column volume, worn injector rotor seals, or poorly seated fittings that distort peak shape. Running a standardized test removes variables and accelerates diagnosis.

#### 4. Fastest Path to Resolution

If performance does not match the QC chromatogram, contacting technical support with:

- Your reproduced chromatogram
- The original QC test chromatogram
- Conditions used

...allows support staff to rapidly evaluate the discrepancy and provide a solution. Verifying early prevents wasted samples, lost analysis time, and unnecessary troubleshooting.

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## Summary

New Cogent™ TYPE-C™ HPLC columns include a QC chromatogram that documents their factory performance. By reproducing the same test conditions and comparing peak symmetry, efficiency, and retention, analysts can quickly confirm that the new column is performing correctly.

This process is the fastest way to differentiate column-related issues from instrument-related problems such as excessive extra-column volume. Early verification ensures confidence in the column, prevents troubleshooting delays, and provides technical support with the information needed to resolve issues efficiently.



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