



How HPLC Is Used to Check Peptide Purity

High-Performance Liquid Chromatography, or **HPLC**, is a laboratory testing method used to make sure a peptide is **clean, pure, and exactly what it claims to be**. When peptides like **BPC-157** or **SS-31** are made, HPLC is one of the most important tools scientists use to verify their quality.

Think of HPLC as a **very advanced filter and scanner combined into one system**.

First, a tiny amount of the peptide is dissolved in a liquid and injected into the HPLC machine. That liquid is then pushed through a narrow tube (called a column) under high pressure. Inside the column are microscopic particles that briefly “grab onto” different substances in the sample.

Here’s the key idea:

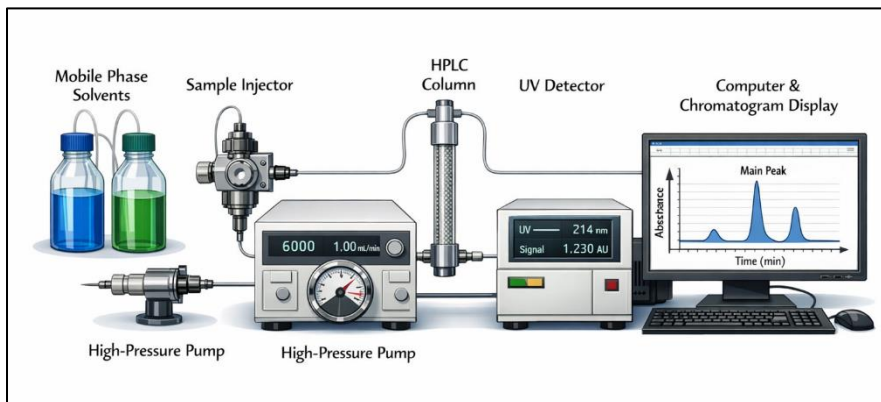
Different molecules move through the column at different speeds.

The correct peptide moves through the column in a predictable way, while unwanted materials—such as leftover fragments, damaged peptides, or impurities—move differently. As each substance exits the column, a detector measures it and records the result as a peak on a graph called a **chromatogram**.

If a peptide is very pure, the graph will show:

- **One large, clean peak** (the correct peptide)
- **Little to nothing else**

If there are impurities, extra smaller peaks appear.



Scientists then measure how much of the total signal belongs to the main peak. If 98% of the signal comes from the correct peptide, the product is labeled “**98% pure by HPLC**.” This is a standard way of expressing peptide quality across research and pharmaceutical industries.

Why does this matter?

Because even tiny impurities can change how a peptide behaves. High purity means:

- More predictable results. Better consistency from batch to batch. Greater confidence in safety and performance

In many labs, HPLC results are also confirmed with another test that checks the peptide’s exact molecular weight, adding an extra layer of verification.

In simple terms, **HPLC is how scientists prove that a peptide is clean, correctly made, and worthy of trust**. When you see peptide purity reported using HPLC, it means the product has been carefully tested using one of the most reliable quality-control methods available.