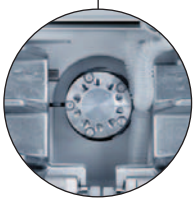


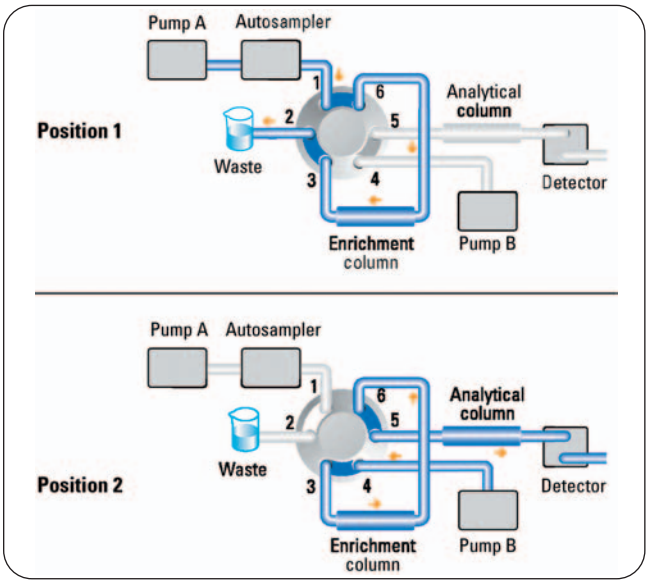
# Sample enrichment and sample clean-up

## Agilent 1100 Series 2-postion/ 6-port valves

**Advantages:**

- **Easy automation of sample preparation**
- **Higher reproducibility**
- **Increased productivity**
- **Increased sensitivity**

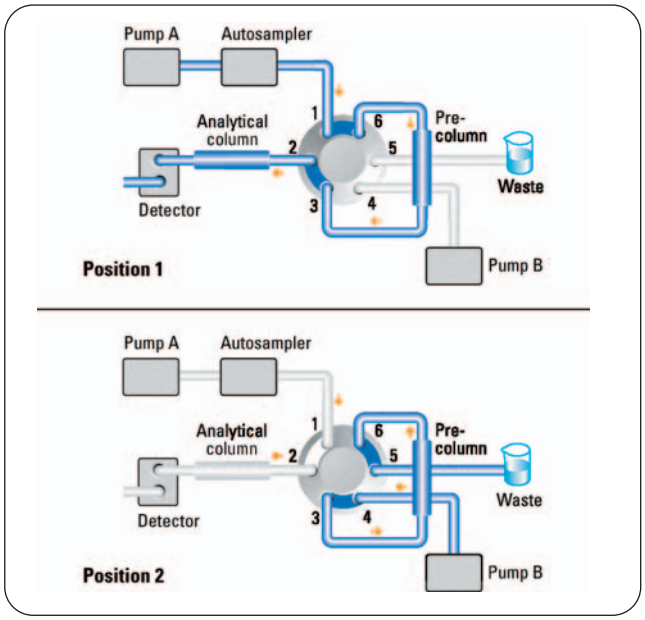
Sample cleanup is very important for samples with complex matrices, such as biological fluids, food extracts and wastewater. Before injection into a LC or LC/MS system, the sample matrix must be separated from the analytes of interest. Otherwise, contaminants can disturb separation and detection or even damage the analytical column.




### Enrichment methods

For highest sensitivity and removal of the sample matrix, enrichment methods are the technique of choice for such applications as proteomics, drug metabolism and environmental trace analysis.

The analytes are retained and concentrated on the pre-column, while the sample matrix is passed to the waste. After the valve switch, a second pump back-flushes the analytes out of the pre-column onto the separation column. This allows injection of large volumes onto the pre-column, significantly expanding sensitivity in the range of ten to several thousands.




### Stripping methods

Stripping methods handle analytes and matrices in a way opposite from enrichment methods. Matrix components are retained on the pre-column while the analytes pass through onto the separation column. Then the valve switches and an additional pump backflushes the matrix components out of the pre-column to waste while the analytes are separated on the main column. Backflushing the pre-column prepares it for the next injection.