

A Review on UPLC: A Prominent Analytical Technique for Pharmaceuticals.

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Abstract: *Today's pharmaceutical industry and analytical laboratories are constantly looking for innovative solutions to save costs, shorten drug analysis and improve product quality. Ultra-performance liquid chromatography is one innovative method of using liquid chromatography. By using particles smaller than 2 μm , UPLC improves three characteristics of liquid chromatography, namely speed, sensitivity and analytical resolution. The mechanism can withstand high back pressure. UPLC separation consumes up to 100 MPa, but does not affect the analytical column or other components of the chromatography system. UPLC requires less time and less solvent than HPLC. Using high-performance liquid chromatography, improved resolution and sensitivity can be achieved through particle chemistry, system optimization and data processing. Using particles smaller than 2 mm at higher linear velocities and equipment operating at higher pressures than HPLC can greatly improve resolution, sensitivity and speed of analysis. This new branch of analytical and separation science preserves the value and concepts of HPLC by providing a step-by-step function of chromatographic efficiency. This review focuses on the basic theory, instruments and principles of UPLC. This review explains UPLC chromatography technology along with the latest research in the field.*

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