



## UHPLC-MS NEW ERA OF PHARMACEUTICAL ANALYSIS: A REVIEW

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### ABSTRACT:-

In recent years, different approaches have been taken to improve chromatographic performance in terms of analysis time and/or resolution. The use of columns packed with sub-2 $\mu$ m particles in ultra-high-pressure liquid chromatography (UHPLC) has become a technique of choice in many laboratories. Furthermore, for the analysis of complex matrices (e.g., biological fluids, plant extracts, and food and environmental samples), coupling UHPLC with mass spectrometry (MS) or tandem MS provides a powerful analytical tool.

This review describes major advances in the field of UHPLC-MS. We strongly emphasize the possibility of speeding up bio analysis, drug metabolism, and multi-residue screening assays, while maintaining qualitative and quantitative performance equivalent to HPLC-MS. We also report the possibility of gaining additional information in metabolomics, using high-resolution UHPLC with a time-of-flight analyzer. It is become an ideal tool for bio analysis. The combination of fast separation and high resolution of UHPLC with high sensitivity, selectivity and specificity of MS provides a more powerful tool in bio analysis than conventional HPLC-MS.

**KEYWORDS:** - Bioanalysis; Drug metabolism; Mass spectrometry (MS); Multi-residue screening; Time of flight; Ultra-high-pressure liquid chromatography (UHPLC); UHPLC-MS; UPLC-MS .

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