

Towards high resolution in fluid chromatographic techniques for pharmaceutical analysis

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Analytical needs in the pharmaceutical industry presently include both high throughput and high resolution techniques. In this contribution, routes to high resolution will be discussed and this as well from a theoretical as a practical point of view.

Possibilities to increase on efficiency (up to 100.000 plates) are high temperature liquid chromatography (HTLC), ultrahigh pressure liquid chromatography (UPLC) and supercritical fluid chromatography (SFC), while selectivity can strongly be improved by combining two orthogonal separation mechanisms like normal and reversed phase modes in a comprehensive approach.

The features of HTLC, UPLC, SFC, LCxLC and SFCxLC will be illustrated with real pharmaceutical applications. The robustness of the presented high resolution techniques compared to the conventional techniques presently applied, will be highlighted.