

HPCCC: Simple, Linear, Volumetric Scale Up

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ABSTRACT

Scale up in Dynamic Extractions High Performance Countercurrent Chromatographic (HPCCC) instruments is simple, volumetric and linear requiring nothing more than multiplying load mass, load volume (to maintain the same solute concentration) and flowrate by a scale factor derived from the volume ratio of the two columns between which scaling up is being considered.

A normal part of the purification development process is to empirically determine the maximum possible loading on an analytical scale column and then scale this directly, by means of the scale factor, to a larger column.

Under these conditions the chromatograms obtained in scale up from analytical scale column (22ml) to the semi-preparative scale column (132ml) (Spectrum), thence to the Preparative scale column (924 ml) (Midi) and ultimately to the Maxi (18000ml), will be essentially overlayable when the appropriate scale factors are used.