

Direct scale up on FCPC® apparatus

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Introduction

The alkyl benzene test [1] is used to achieve a scale up between Analytical FCPC®50, Bench scale FCPC®200 and Pilot scale FCPC®5000.

A mixture of two alkyl benzene (1) and (2) is injected in each apparatus with Hept/MeOH system. Resolutions are measured and calculated for each chromatogram for comparison.

Results

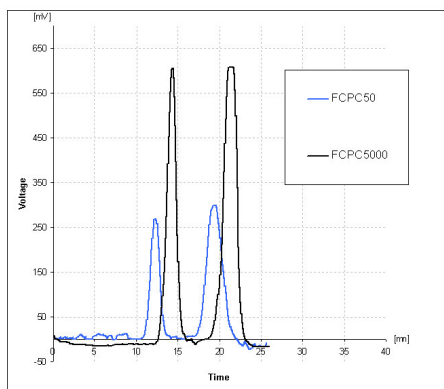
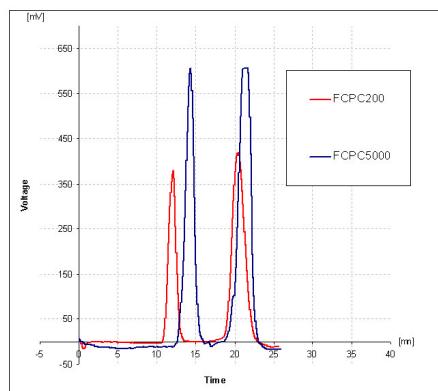


Fig 2 : Chromatograms of the binary separation for **Bench scale FCPC®200** and Pilot scale FCPC®5000

Fig 1 : Chromatograms of the binary separation for **Analytical scale FCPC®50** and Pilot scale FCPC®5000



	FCPC® 50	FCPC® 200	FCPC® 5000
Column volume	50 ml	200 ml	5L
Sample concentration	75 g/L for (1), 50 gr/L for (2)		
Volume injected	2 ml	8 ml	200 ml
Flow rate	2 ml/mn	8 ml/mn	200 ml/mn
Rotation speed	2000 rpm	1600 rpm	1200 rpm
Resolution	2,5	3,2	2,3
Separation time	25 mn		

Conclusions

FCPC® apparatus allows scale up directly link to column volume. In consequence, application could be easily developed on the analytical scale FCPC®50 and then scale up on larger FCPC® column for preparative or production purposes.

[1] Alain Berthod and Madelaine Bully
High-Speed Countercurrent Chromatography Used for Alkylbenzene Liquid-Liquid Partition Coefficient Determination, Analytical Chemistry, 1991, 63.