

Scale up on peptide purification from Benchscale FCPC200 to Pilot scale FCPC5000

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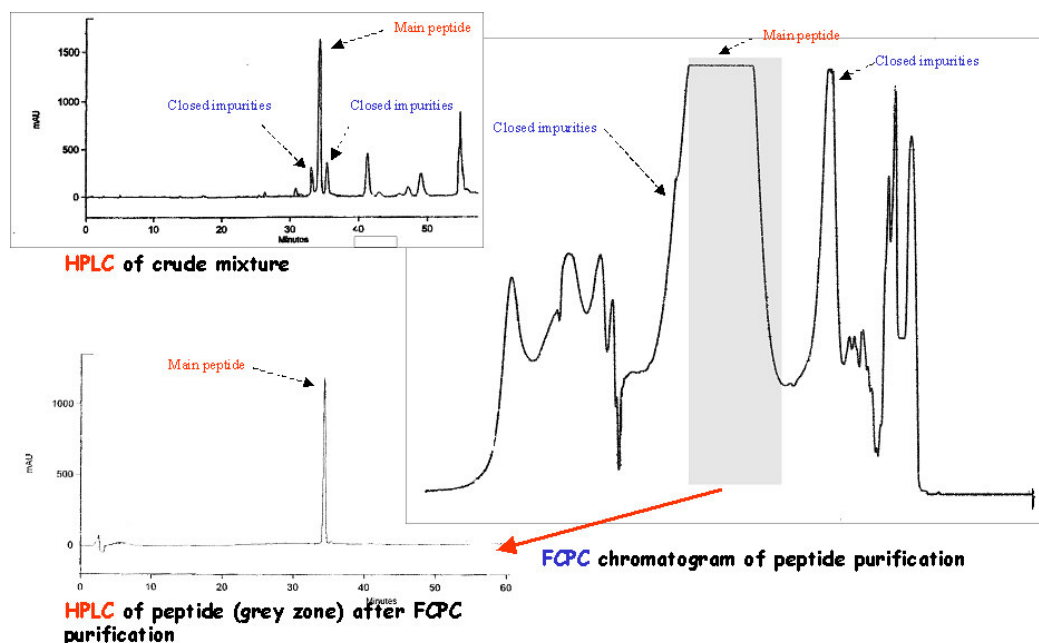
Introduction

Bioactive synthetic peptides have a wide range of therapeutic activities as antioxidant, anti-inflammatory, anti-HIV ...

Their purification from synthetic mixture can be complex and expensive. CPC can be easily used with the butanol/water system for low cost production and high purity recovery.

Application note N°04006 deals with 1 gr purification of mixture on Bench scale FCPC200. This new application note deals with scale up of this experimentation on Bench scale FCPC1000 and Pilot scale FCPC5000. Detection is done with UV/Vis detector at 220 nm. HPLC analysis are done on C18 column.

Results



Column volume	FCPC 200 ml	FCPC 1000 ml	FCPC 5000 ml
Crude mixture	Synthetic mixture with 23 % (w/w) of main peptide		
Mass injected	1 gm	5 gm	25 gm
Scale up		Scale up X5	Scale up X25
Mass injected	1 gm	5 gm	25 gm
Solvent consumption	0,7 L	3,2 L	19 L
Total weight of peptide recover	220 mg (95%)	1050 mg (91%)	5132 mg (90%)
% (w/w) of peptide recovered with purity > 90%	74,5 %	84,5 %	85 %
% (w/w) of peptide recovered with purity > 95%	32 %	49 %	77 %

Conclusions

You could noticed the selectivity obtained in this case which allows to eliminate very closed impurity with preparative injection. Moreover, the direct scale up (based on column volume ratio) shows better resolution on larger column. Optimisation could be done on 5L with larger injection up to 50-100X compared to 1 gm injection on 200 ml column.