# Resolution studies according to flow rate and rotation speed with piperine purification on Analytical FCPC® with 50 ml column

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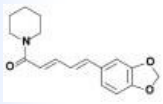
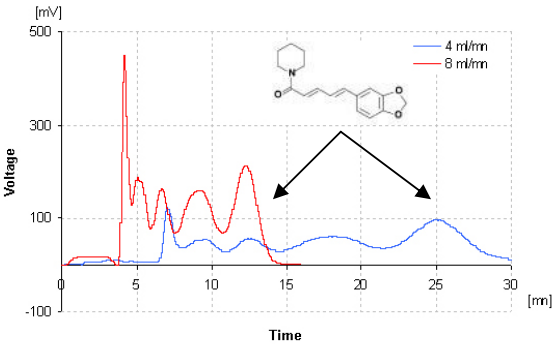
## Introduction

Piperine ($C_{17}H_{19}NO_3$) is the alkaloid responsible for the taste and smell of black pepper. It has been also used for the traditional medicine and like insecticide.

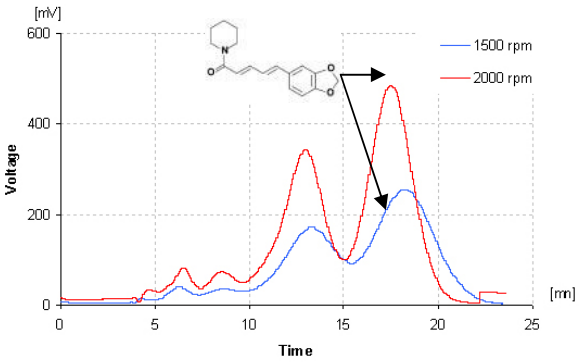


Trials were done on Analytical FCPC® equipped with 50ml column to follow resolution of the separation at different flow rate and rotation speed with few 100 mg injection of crude *Piper nigrum* extract. Detection is done with UV/Vis detector at 254 and 300 nm.

## Results




UV 254 nm FCPC® chromatograms of 100 mg *Piper nigrum* extract injection
Parameters : 4 and 8 ml/mn, 2000 rpm




UV 300 nm FCPC® chromatograms of 100 mg *Piper nigrum* extract injection
Parameters : 1500 and 2000 rpm, 6 ml/mn

| Parameters | |
|---|---|
| Flow-rate | 4 and 8 ml/mn |
| Rotation speed | 1500 and 2000 rpm |
| Quantity injected | 100 mg |
| Solvent system | ARIZONA |

| Results | |
|---|---|
| Separation time | 15 and 30 mn |
| Solvent consumption | 170 mL |

## Conclusions

Chromatogram shows same resolution between 4 and 8 ml/mn trials and better efficiency at 2000 rpm than 1500 rpm. In this case, separation with ARIZONA solvent system is achieve very fast at 8 ml/mn and 2000 rpm with injection up to 1 gr.



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