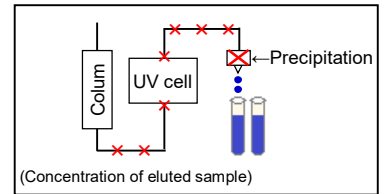


How to separate the easily precipitated samples?

Case: A highly concentrated sample precipitates in the line after it is eluted from the column.

Solution: Decrease the concentration of the sample eluted from the column.



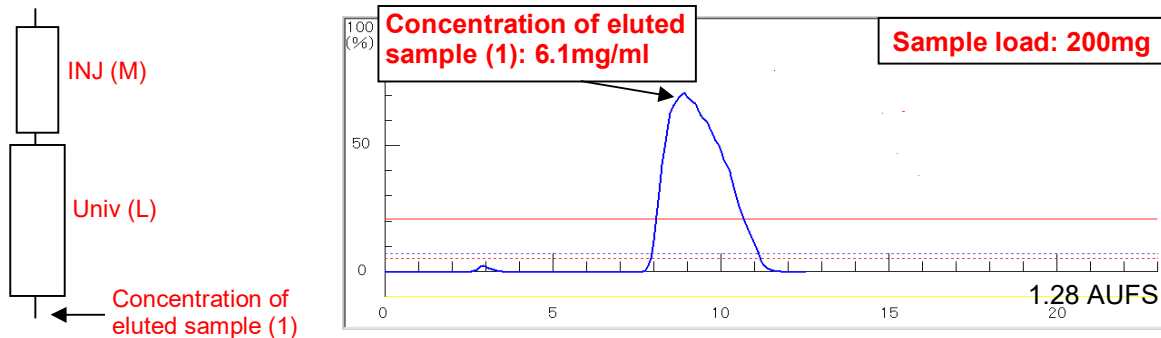
Precipitation of sample occurs after it is eluted from column.



Sample: Butyl p-hydroxybenzoate
Method: Hexane/Ethyl acetate = 79/21, ISOCRATIC method

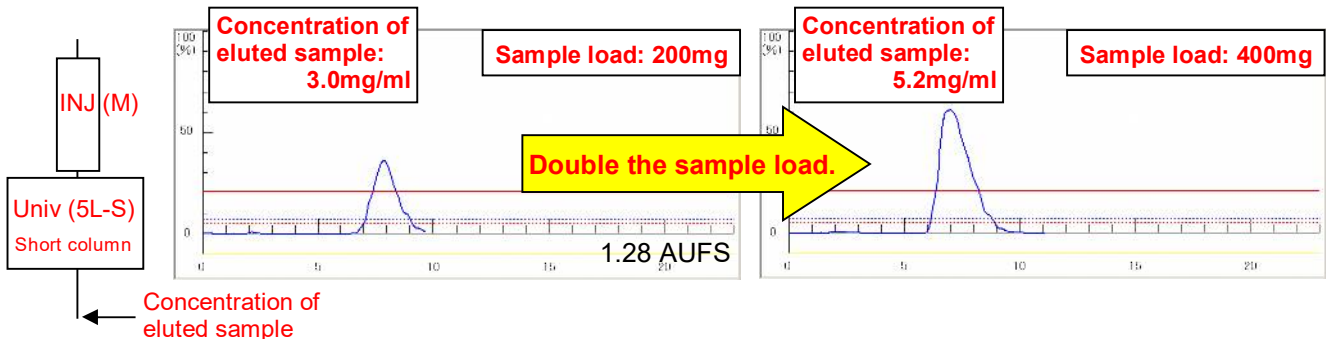
Concentration of eluted sample is too high when using a standard length column, which causes precipitation of the sample.

< 1 > Inject Column M-size + Universal Column L-size (40g), Flow rate: 20ml/min



Solution 1: Concentration of the eluted sample is decreased by using a short separation column. And it prevents a sample from precipitating.

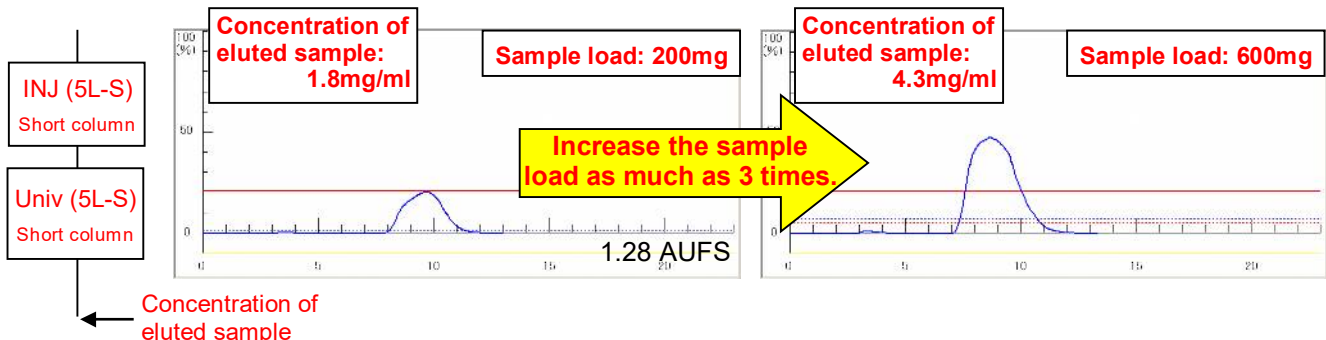
< 2 > Inject Column M-size + Universal Column 5L-S, Flow rate: 80ml/min



The values of the top of the peak indicate that concentration of the eluted sample was diluted as much as 2 times by using a short separation column than when using the standard length columns. This means that the sample loading amount can be increased 2 times without precipitation as compared with above < 1 >.

Solution 2: If a short Inject column and a short separation column are used in pair, it will further help prevent a sample from precipitating.

< 3 > Inject column 5L-S + Universal column 5L-S, Flow rate: 80ml/min



A combination of a short Inject column and a short Universal column will further dilute the sample concentration, which results into increasing sample loading amount 3 times without precipitation as compared with above < 1 >.

Case: Separation of two compounds

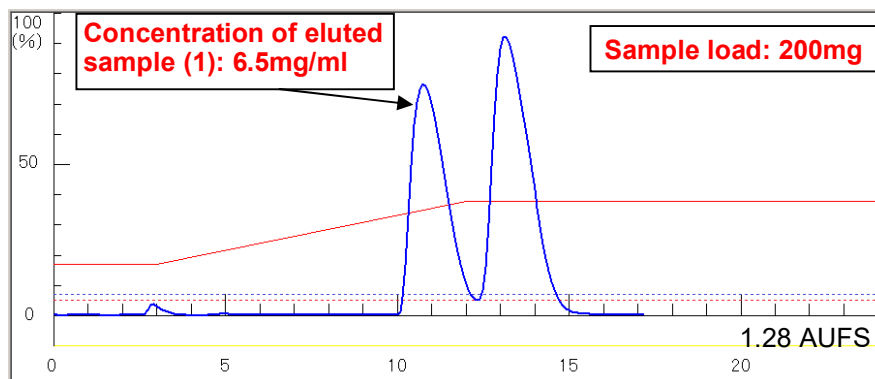
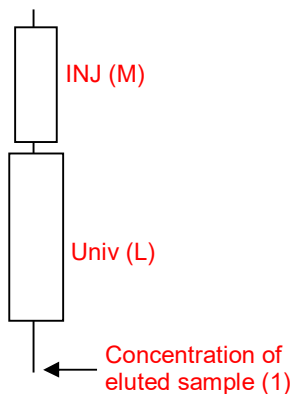


Sample concentration:
100mg/ml
(2 compounds combined)

Sample: Butyl-p-hydroxybenzoate + Methyl-p-phdroxybenzoate
Method: Ethyl-acetate, from 17% to 38% on Rf gradient

Standard length columns were used.

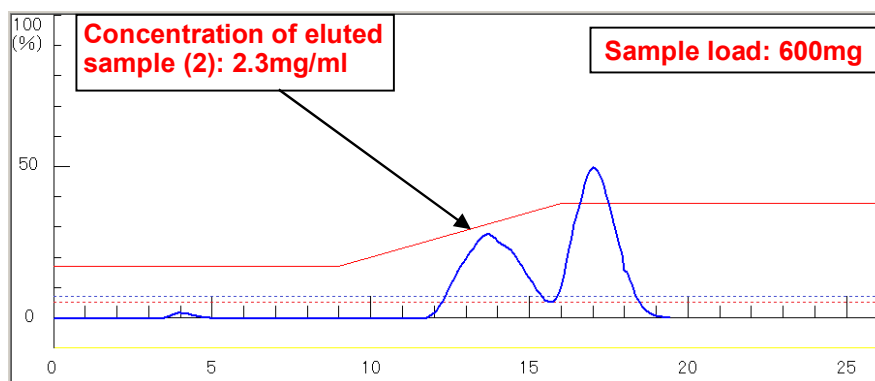
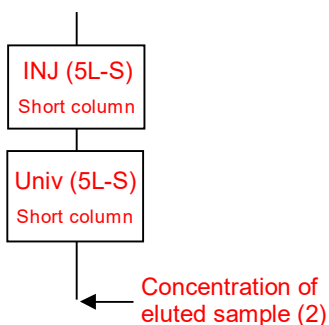
< 4 > Inject Column M-size + Universal Column L-size (40g), Flow rate: 20ml/min



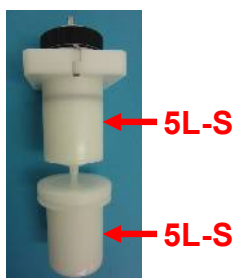
Dilute highly concentrated sample to avoid the precipitation of the sample

Use a short separation column together with a short Inject column.

< 5 > Inject column 5L-S + Universal column 5L-S, Flow rate: 80ml/min



3 times as much sample was loaded and was still separated as well as in < 4 >.



A short column avoids a sample from getting precipitated.

A short length column help reduce the concentration of the eluted sample and avoids the sample from getting precipitated.



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