High sensitivity analysis column for LC/MS

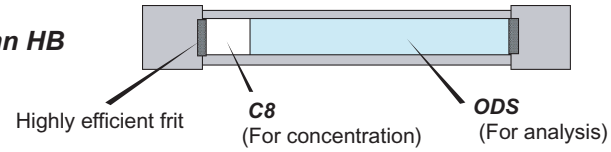
L-column HB

Patent Pending

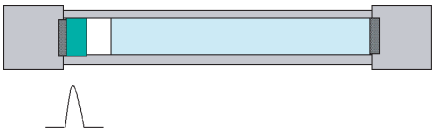
The demand for LC/MS is increasing in the field of medicine and environmental sciences. Trace analysis is often required in these fields. However, it is difficult to inject a large volume sample because the semi-micro column has a small diameter. Although a large-volume sample could be injected using the column-switching method, exclusive equipment, complicated operation, and complicated maintenance management are required.

L-column HB is packed up to one column with the packing material for concentration and for analysis at a hybrid, and it demonstrates power for high-sensitivity analysis because of the large volume (more than 100μL) of the sample injection.

Structure of ***L-column HB***

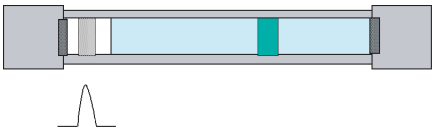


Injection



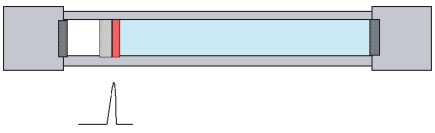
Since a sample injected in large quantities requires time for entering a column, the peak will be diffuse.

Concentration



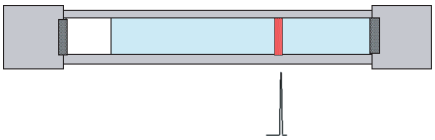
A sample is concentrated by L-column C8 at an entrance portion.

Re-concentration

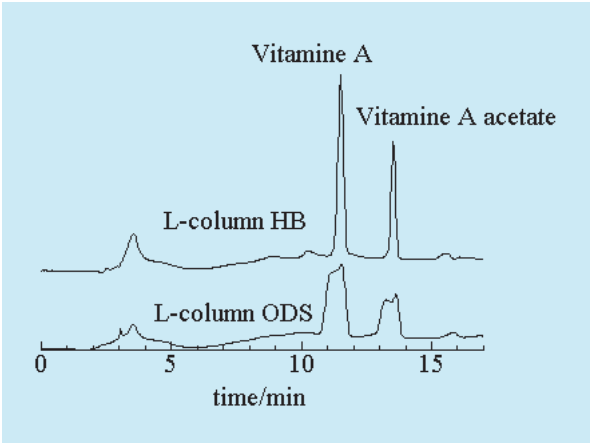


On starting gradient analysis, a sample will move promptly from the L-column C8 layer, to then become re-concentrated at the top of the L-column ODS layer with a stronger retention power.

Movement
Separation
Detection



Furthermore, if gradient analysis is continued, the re-concentrated sample gets separated in the L-column ODS layer. According to this double-concentration effect, high-sensitivity analysis of samples injected in large quantities can also be carried out from a sharp peak, without peak spreading.



Analysis of 100μL Vitamin A

Sample: 1μg/mL Vitamin A, Vitamin A acetate
in Acetonitrile
Sample Volume: 100μL
Column Temp.: 40℃
Flow rate: 0.15mL/min
Mobile phase: A) Methanol, B) Water
80-100% A (0-5 min , linear)
100% A (5-20 min)