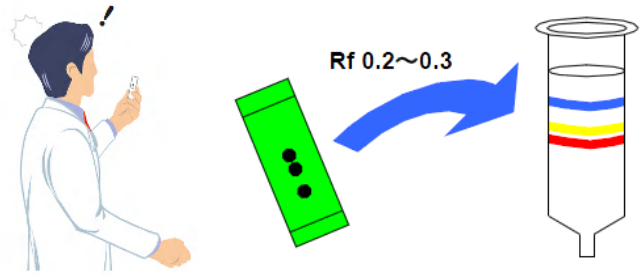
- TRUE Flash Chromatography -



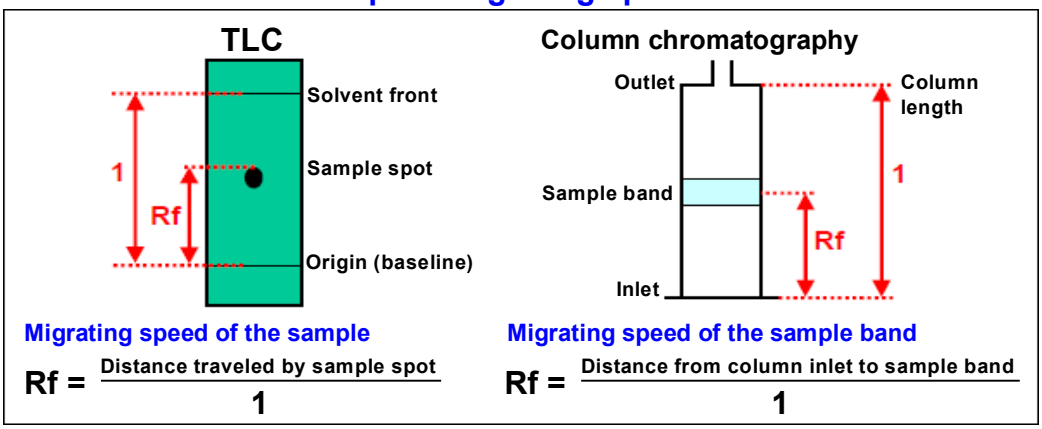
On the Flash Column Chromatography, start with the TLC and see if they are separable. (α: Check the separation factor). Then, adjust the migrating speed Rf of the target compound on TLC. It is equal to controlling the Rf of the sample in the column.

Rf		Eluting position
Rf 0.2	⇔	Elutes at 5 CV
Rf 0.25	⇔	Elutes at 4 CV
Rf 0.3	⇔	Elutes at 3.3 CV

(Most efficient elution)

If the migrating speed is too fast, the sample will not be separated.
If too slow, on the other hand, it results in a lengthy run, and the solvents will be wasted.
The most efficient chromatography can be achieved by controlling the Rf value in between 0.2 and 0.3.
It is the true flash chromatography that can precisely transfer the method obtained on TLC to the actual column chromatography. Yamazen EPC "Smart Flash" purification system automatically develops this most efficient method from the TLC information. (EPC stands for Elution Position Control).

Sample's migrating speed Rf



Migrating speed of the sample

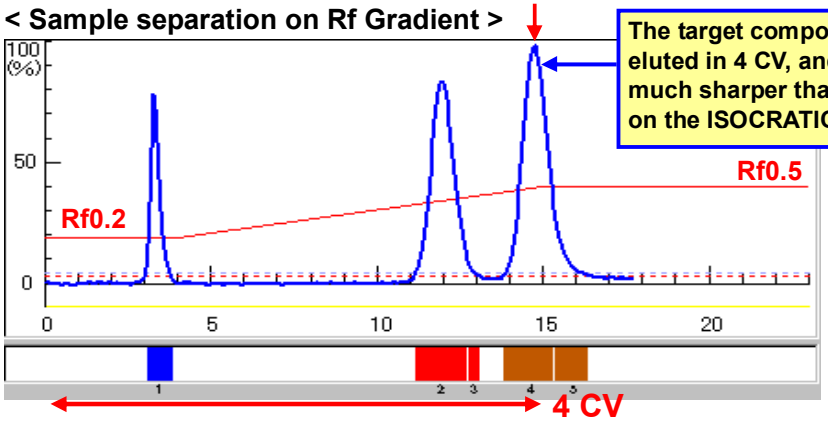
$$Rf = \frac{\text{Distance traveled by sample spot}}{1}$$

Migrating speed of the sample band

$$Rf = \frac{\text{Distance from column inlet to sample band}}{1}$$

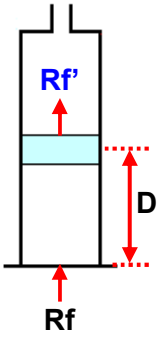
EPC Flash Chromatography
- Perfect Method transfer -

< Sample separation on Rf Gradient >



The target compound will be eluted in 4 CV, and the peaks are much sharper than those done on the ISOCRATIC method.

Rf' : EPC Equation
Real Rf value in the column



Migrating distance D is given by $\int Rf'\, d(CV)$

Eluting position is given by EPC equation $\int Rf'\, d(CV) = 1$

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