# Purification of anti-hyperlipidemic agents using simulated moving bed

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The simulated moving bed (SMB)is extensively applied to pharmaceutical and fine chemical industries. Compactin is a core structure of anti-hyperlipidemic agents which is HMG-CoA reductase inhibitors. Pravastatin, a bioconversion product of compactin, is more effective drug in lowering serum cholesterol.

The separation of compactin and pravastatin is carried out using Licosep micro SMB (Novasep, France). The SMB consists of four zones and each zone has two columns and the column(10 cm x 1.0 cm I.D) is packed with Kromasil(ODS, 25 μm). The mobile phase acetonitrile/deionized water/acetic acid/triethlyamine(65/35/0.01/0.01, v/v/v/v), which has appropriate selectivity, was found by changing compositions of solvents.The adsorption isotherms of compactin and pravastatin were obtained by multiple frontal analysis. Mass transfer parameters were estimated by correlations and confirmed by single pulse tests. The optimum operating conditions for the SMB process were obtained from the triangle theory. The simulation results shows over 98 % of purity and yield at the raffinate and extract port.