

Separation of Guanine and Cytosine in Three-Zone SMB(Simulated Moving Bed) Chromatography

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DNA play important roles in cell metabolism. Development of modern analytical technology and tool resulted in the deciphering DNA of nucleotides and bases. Among them bases change of structure and function is the main causes of inherited diseases and human cancers. Therefore, they need to achieve separation experiment and theoretical researches. Separation investigations for DNA focus on the base pairs guanine and cytosine in nucleotide.

Separation of guanine and cytosine were performed by SMB (Simulated moving bed). SMB set up by connected three C18-HPLC columns was used to separate guanine and cytosine. Aspen simulation was performed to determine the operating variables such as switching time, raffinate and extract flow rates. The outlet streams of SMB, raffinate and extract, which were sampled and analyzed by analytical HPLC system. The analysis indicated purity values ranges from 85% to 95% according to the changes of switching time ,raffinate and extract flow rate.