



Assessing Microbial Cell Interaction with Semi Rigid Chromatographic Beads for Better Process Design

Muhammad Tariq

Department of Biotechnology, University of Malakand, Pakistan

Abstract:

Adhesion of biomass with chromatographic supports and cell to cell accumulations are the common restrictions coming across during chromatographic techniques, ultimately affecting the overall performance. The study was conducted for investigating the interactions of proteases producing cells with the selected size exclusion chromatographic/ hydrophobic interaction chromatographic beads for direct recapture of the product from feed stock. The interaction was calculated through experimental determination of optical density by utilizing condition during size exclusion chromatography and hydrophobic interaction chromatography. The data obtained was used to calculate cell partition index between the cells and chromatographic beads. Calculation performed for size exclusion chromatography indicated stronger interaction between cells and Toyopearl HW as compared to Toyopearl phenyl used for hydrophobic interaction chromatography. The interaction between beads and cells increased with increase in salt concentration. The lowest interaction value recorded for Toyopearl HW beads 0.47 using 20mM PO₄ as buffer and 0.38 using 0.5 Molar AS buffer. While the highest interaction value recorded was 0.20 in 1.6 Molar AS. The interaction value recoded for Toyopearl Phenyl was high when 20mM PO₄ was used 0.41 and 0.63 using 0.5 Molar AS and lowest CPI value recorded using 1.6m AS was 0.38.

Biography:

Muhammad Tariq has completed his Bachelor at the age



of 22 years from University of Malakand, currently a private school teacher at Talash Institute of Modern Education, Pakistan.

Publication of speakers:

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