



Purification of antileukemic drugs through silica-based supported ionic liquids

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L-asparaginase (LA) is an enzyme used as a biopharmaceutical for the treatment of acute lymphoblastic leukemia. LA can be produced via fermentation and its purification usually comprises ion exchange chromatography, which is often preceded by precipitation with salts as a first pre-chromatographic step. However, this purification strategy result in low yields and purity, requires long processing times, while leading to a consequent increase of the process costs. Therefore, the demand for new cost-effective purification processes play now a priority role. In this work silica-based supported ionic liquids (SILs) are investigated as an alternative technology to purify LA from the complex fermentation medium from *Bacillus subtilis*. The concentration of the extract from the fermentation, material/ extract from fermentation ratio and contact time effects in the purity and yield of LA were optimized. With this strategy, process costs, energy consumed, and waste generated, may be significantly decreased, which may lead to this biopharmaceutical price decrease and wider application.

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