

# **CICECO JORNADAS**

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**HAND IN HAND**  
**WITH SOCIETY**

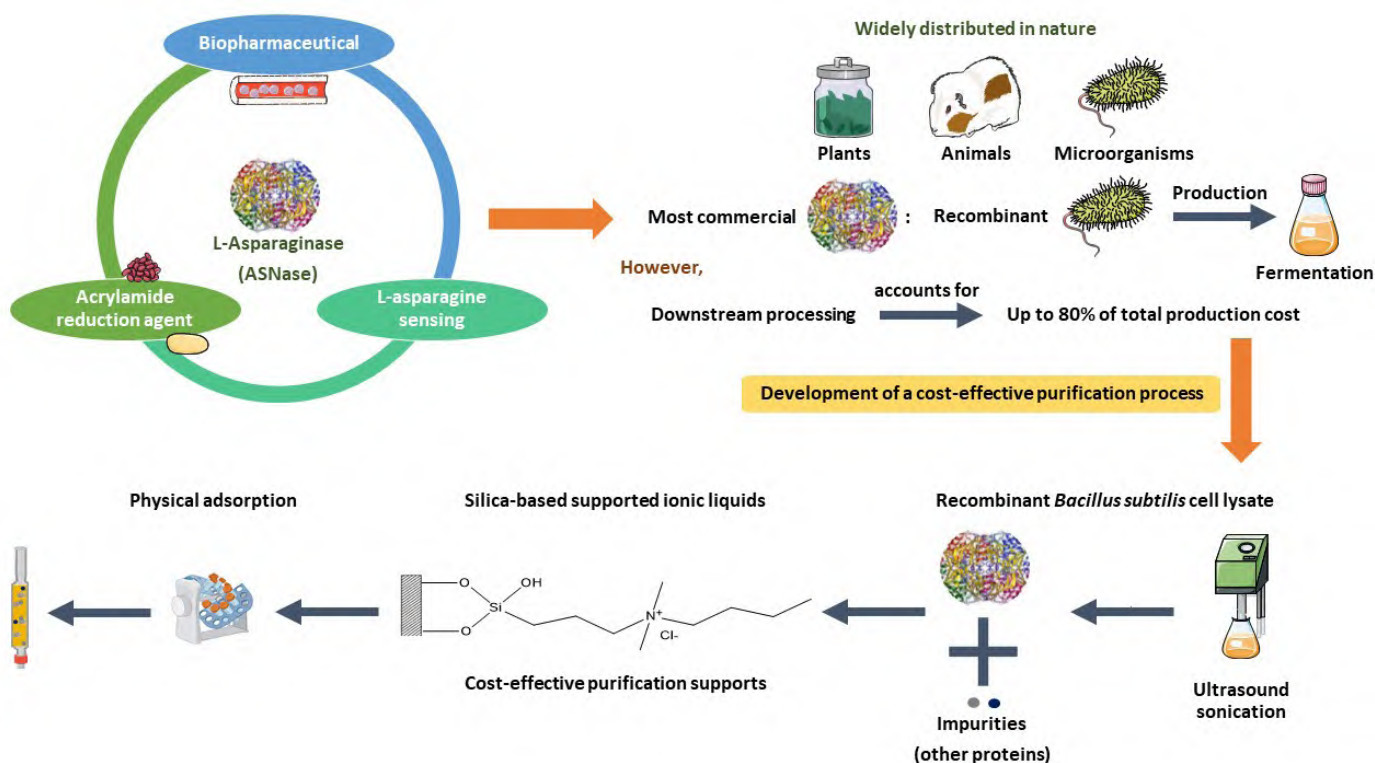


# **ABSTRACT BOOK**

# SILICA-BASED SUPPORTED IONIC LIQUIDS FOR THE PURIFICATION OF L-ASPARAGINASE

João C. F. Nunes (a); Mafalda R. Almeida (a); Valéria C. Santos-Ebinuma (b); Márcia C. Neves (a); Ana P. M. Tavares (a); Mara G. Freire (a)

(a) CICECO - Aveiro Institute of Materials, Department of Chemistry, University of Aveiro, 3810-193 Aveiro, Portugal (b) Department of Engineering of Bioprocesses and Biotechnology, School of Pharmaceutical Sciences, São Paulo State University (UNESP), 14800-903 Araraquara, Brazil



L-asparaginase (ASNase) is an amidohydrolase enzyme used as a biopharmaceutical on the treatment of lymphoproliferative disorders, as an acrylamide reduction agent and in L-asparagine sensing [1]. Despite being widely distributed in nature, most commercial ASNase are from recombinant microorganisms. Whilst ASNase production can be performed through fermentation, its downstream processing accounts for up to 80% of total production cost [2]. This work aims the development of a novel cost-effective process for ASNase purification from recombinant *Bacillus subtilis* cell lysates obtained by ultrasound sonication. Silica-based supported ionic liquids comprising quaternary ammonium and chloride as counterions were investigated as cost-effective ASNase purification supports through a simple physical adsorption method. The effect of specific experimental conditions, e.g., medium pH and solid/liquid ratio, in the purity of ASNase were optimized. Through this strategy, process costs, energy consumption, and waste produced, might be significantly decreased, leading to ASNase price decrease, to allow its use by a widespread population. References [1] Nunes, J. C. F. et al. *Molecules* 27 (2022). [2] Lopes, A. M. et al. *Critical Reviews in Biotechnology* 37 (2017).

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