

Iguassu Falls



Brazil

MRS Meeting

2022

September 25th to 29th



Brazilian Materials
Research Society

Excelência em Ciência e Tecnologia de Materiais

Preparation of Zein Nanoparticles from Raw Zein using the Antisolvent-Dialysis Process

Sergio Akinobu Yoshioka¹, Bruno Garcia de Oliveira Breda², Maria Eduarda Jacinto³, Francisco Vieira dos Santos⁴, Wilson Oshiro⁵, Gabriel da Silva Florintino⁶

¹Instituto de Química de São Carlos -Universidade de São Paulo (*Grupo de Bioquímica e Biomateriais - Depto de Química e Fis.Molecular*) , ²Instituto de Química de São Carlos - Universidade de São Paulo (*Depto de Química e Fis.Molecular*) , ³Instituto de Química de São Carlos - Universidade de São Paulo (*Depto de Química e Fis.Molecular*) , ⁴Universidade de Sao Paulo, ⁵Autônomo (*Autônomo*) , ⁶Instituto de Química de São Carlos - Universidade de São Paulo (*Grupo de Bioquímica e Biomateriais - Depto de Química e Fis.Molecular*)

e-mail: sergioy@iqsc.usp.br

Preparation of Zein Nanoparticles from Raw Zein using the Antisolvent-Dialysis Process

Bruno G. de Oliveira Breda¹, Maria Eduarda Jacinto¹, Francisco Vieira dos Santos¹, Wilson Oshiro², Sergio A. Yoshioka¹

¹Grupo de Bioquímica e Biomateriais- Instituto de Química de São Carlos - USP, ²Engenheiro Químico Autônomo

e-mail: sergioy@iqsc.usp.br

Zein is protein from corn endosperm with carotenoids in yellow kernels, and is found about 15-35% in dried distilled grain or corn gluten meal (corn coproducts). So these components too easy to extracting with hydroethanolic solutions to obtain raw zein extracts. Aim of this work to using cellulose tubes (Viskase) to do anti-solvent-dialysis process, where the raw zein hydroethanolic solution put inside of tube and dialyzed against deionized water for 12hs[1]. The results of this process produced the nanoparticles with different sizes (50nm-500nm). Besides this process could to separate zein and carotenoids from raw zein hydroethanolic solutions, but with small cost than Aldrich zein(<<R\$1.600,00/kg) and whiter zein.

Acknowledgements:

Ingredion Inc. for the supply of CGM60.

References:

[1] Rodriguez-Félix, F. [Food Science and Biotechnology](#), v.29, p.619-629 (2020).