

# 4<sup>th</sup> EUROPEAN BIOPHARMA CONGRESS

## International Conference and Exhibition on PHARMACOLOGY AND ETHNOPHARMACOLOGY

### Controlled protein release from defatted pine pollen

Arun Kumar Prabhakar  
Nanyang Technological University, Singapore

Abstract: The present study aims to develop a controlled protein release system from defatted pine pollen. The pollen grains were defatted and then loaded with a model protein, bovine serum albumin (BSA). The loaded pollen grains were then subjected to different chemical treatments to modify the pollen wall structure. The modified pollen grains were then subjected to in vitro release studies. The results showed that the modified pollen grains exhibited a controlled release profile of BSA over a period of 30 days. The release rate was significantly lower than that of the native pollen grains. The release rate was also found to be dependent on the chemical treatment used for modification. The modified pollen grains showed a higher release rate when treated with sodium hydroxide (NaOH) compared to other treatments. The results suggest that the modified pollen grains can be used as a controlled protein release system.

### Biography

Arun Kumar Prabhakar has completed his Master's (Biomedical Eng.) from IIT, Bombay (India) and Bachelor's (Biotechnology) from Anna University, Chennai (India). His area of interest is drug delivery and he has worked with both nanoparticles (polymerosomes, graphene quantum dots) and microparticles (pine pollen) for the same. He is currently working with pine pollen for protein delivery for his PhD thesis under Cho Nam Joon (Assoc. Prof. MSE dept., NTU). He has published a paper for his work on pine pollen capsules (A K Prabhakar, et al., Chemical processing strategies to obtain sporopollenin exine capsules from multicompartmental pine pollen. J. Ind. Eng. Chem. (2017)).

arun0028@e.ntu.edu.sg

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