Sirivipa Mongkolkitikul et al., Chem Sci J 2017, 8:2(Suppl)
http://dx.doi.org/10.4172/2150-3494-C1-009

Electrically controlled release of ibuprofen from pectin hydrogel in transdermal drug delivery

Sirivipa Mongkolkitikul and **Anuvat Sirivat**
Chulalongkorn University, Thailand

Transdermal drug delivery system (TDDS) is the alternative route to transport drug molecule to a systematic circulation through the human skin. The major advantage of TDDS is the ability to avoid the first-pass metabolism. However, TDDS has certain limitations: the level of drug permeated across the skin is low and the drug size has an adverse effect on the permeation. To improve those limitations, the electrical potential and conductive polymer were utilized. This work attempted to design a transdermal patch consisting of ibuprofen as a model drug and pectin hydrogel as a drug matrix. The effects of the crosslinking agent type, crosslinking ratio (the mole of the crosslinking agent to the mole of the pectin monomer), mesh size, and electric potential were investigated. The diffusion coefficients and the release mechanism of the ibuprofen on the pectin hydrogels were determined and investigated using a modified Franz-Diffusion cell in an MES buffer solution of pH 5.5, at a temperature of 37 °C, for 48 h. The amount of drug release was analyzed by UV-Visible spectrophotometry. The result showed the drug diffusion coefficient increased with increasing mesh size and electric potential.

Biography

Sirivipa Mongkolkitikul completed her B. Eng. with a second-class honour in Petrochemical and Polymeric Materials from Silpakorn University, Thailand in 2014, and now she is studying for a Master degree in Polymer Science at the Petroleum and Petrochemical College, Chulalongkorn University, Thailand.

bell9156@gmail.com

Notes: