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**PREPARATION OF CROSS-LINKED CHITOSAN/SILK FIBROIN  
BLEND FILMS FOR DRUG DELIVERY SYSTEM**

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**ABSTRACT**

Crosslinked chitosan/silk fibroin blend films were prepared by solution casting using glutaraldehyde as crosslinking agent. Drug release characteristics of the blend films with various blend compositions were investigated. Theophylline, diclofenac sodium, amoxicillin trihydrate and salicylic acid were used as model drugs. The release studies were carried out at 37°C in buffer solutions at pH 2.0, 5.5 and 7.2. It was found that the blend film with 80% chitosan content showed the maximum amount of drug release at pH 2.0 for all types of drugs. From swelling study, the maximum degree of swelling of the drug-loaded blend films was also obtained at pH 2.0 for the blend film with 80% chitosan content. The amounts of drugs released from the films with 80% chitosan content were in the order: salicylic acid > theophylline > diclofenac sodium > amoxicillin. The maximum amounts of salicylic acid, theophylline, diclofenac sodium and amoxicillin released from the blend films with 80% chitosan content at pH 2.0 were 92.7%, 81.1%, 76.6%, and 37.2%, respectively.

Keywords : Chitosan, Silk Fibroin, Drug delivery system