

# キチンおよびキトサンの製剤への応用 I . 膜の調製とそれらの In Vitro での評価

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## Application of Chitin and Chitosan to Pharmaceutical Preparations. I . Film Preparation and *in vitro* Evaluation

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**ABSTRACT** Three types of chitosan films containing prednisolone (PD) were prepared and drug release from the films was studied *in vitro*. The films prepared include 1) a monolayer type (ML) film prepared by evaporating the solvent from a chitosan/drug mixture, 2) a double layer type (DL) film prepared by sticking together two ML films, one of which contained a drug, and 3) N-Ac film which is a DL film with one of the ML films N-acetylated and stuck onto the other ML film, which contained a drug. Release of PD from ML films was retarded as the films became thicker. Release of the drug from N-Ac films was more depressed than from the corresponding DL film and was found to follow zero-order kinetics. Pores were observed in chitosan films by scanning electron microscopy. These results suggested that chitosan and N-acetyl chitosan (chitin) films could be applicable for controlled-release preparations of drugs.

抄録 プレドニゾロンを包含するキトサン膜を、調製法をかえて3種類調製した。それらは、①薬物/キトサン溶液から溶媒を除去することにより得られた膜、②その①の膜に、薬物を除いて調製したキトサン膜を貼り合せたダブル膜、③は①の膜に、N-アセチルキトサン膜(キチン膜)を貼り合せたダブル膜、の3種である。それらの膜からの薬物放出を、*in vitro*で検討した。その結果、③のキチン膜を貼り合せたダブル膜からの薬物放出が最も抑制され、しかも0次放出挙動を示すことがわかった。従って、キチン膜を薬物放出制御を必要とする製剤に利用することができるだろう。

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