抗酸化作用を有する徐放性キトサン錠に関する研究

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Useful Extend-release Chitosan Tablets with High Antioxidant Activity

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ABSTRACT: The antioxidant properties of different low molecular weight chitosans (CS1; 22 kDa, CS2; 38 kDa, CS3; 52 kDa, CS4; 81 kDa) were examined for possible use in extended-release tablets. CS2 showed the highest scavenging activity. CS1 and CS3, however, were much less effective and CS4 was not a viable antioxidant. The results suggest that CS2 could be useful in combating the development of oxidative stress. A series of chitosan tablets were prepared using a spray drying method and evaluated as an extended-release matrix tablet using theophylline (TPH) as a model drug. The release of TPH from the different MW chitosan tablets increased with increasing MW of the chitosan used. CS2, CS3 and CS4 showed a reasonable release activity, but CS1 showed the shortest release activity. Moreover, the CS2-TPH tablet showed the highest scavenging activity of the three chitosan tablets (CS2-CS4) using 2,2'-azinobis (3-ethylbenzothiazoline-6-sulfonic acid) radicals. These results suggest that a CS2-TPH tablet could be potentially useful in an extended-release matrix tablet with a high antioxidant activity.

抄録　徐放性錠剤の基材への応用を目的として、分子量の異なる 4 種のキトサン (CS1; 22 kDa, CS2; 38 kDa, CS3; 52 kDa, CS4; 81 kDa) の抗酸化作用を比較検討した。CS2 は最も高いラジカル消去能を示した。テオフィリン（モデル薬物）とキトサンの物理混合物の直打錠を調製し、溶出試験法により薬物放出性を比較したところ。キトサン分子量の高いものほど徐放性を示した。これらの結果から、CS2 は抗酸化作用および薬物徐放性効果を併せもつことを明らかにした。

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