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## ラットにおけるインスリン及び水溶性薬物の消化管吸収に及ぼすキトサンオリゴマーの吸収促進効果

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【**Purpose**】 The purpose of this research is to study the effects of chitosan oligomers on the absorption of insulin and fluorescein isothiocyanate - dextrans (FDs) across the rat intestinal membranes, assess their intestinal toxicity and elucidate their intestinal absorption enhancing mechanism.

【**Methods**】 The absorption of insulin and FDs across the rat intestinal membranes and intestinal membrane toxicity were examined by an *in-situ* closed loop method. The transepithelial electrical resistance (TEER) was measured using a short-circuit current amplifier.

【**Results**】 Chitosan hexamer (5%, w/v) greatly improved the intestinal absorption of insulin and FD-4 from the jejunal membrane. There were no significant difference in the amount of total protein and activity of lactate dehydrogenase (LDH) 4hr after administration of chitosan hexamer (0.5% w/v) as compared with the control, indicating that this compound is a safe absorption enhancer for improving the intestinal absorption of poorly absorbable drugs. Furthermore, chitosan hexamer (5%, w/v) could moderately decrease the TEER value compared with the control, suggesting that it may loosen the tight junction of the intestinal epithelium, and thus improve the intestinal transport of drugs via a paracellular route.

【**Conclusion**】Chitosan hexamer could improve the intestinal absorption of insulin and FD-4 in rats and did not cause any significant membrane toxicity, indicating that they would be promising absorption enhancers for improving the intestinal absorption of poorly absorbable drugs.