Oral absorption of hyaluronic acid and phospholipids complexes in rats.

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Abstract

AIM: To prepare a complex of hyaluronic acid (HA) and phospholipids (PL), and study the improvement effect of PL on the oral absorption of HA. METHODS: The complex of HA-PL (named Haplex) was prepared by film dispersion and sonication method, its physico-chemical properties were identified by infrared spectra and differential scanning calorimetry (DSC). The oral absorption of Haplex was studied. Thirty-two healthy rats were divided into 4 groups randomly: (1) a normal saline (NS) control group; (2) an HA group; (3) a mixture group and (4) a Haplex group. After intragastric administration, the concentration of HA in serum was determined. RESULTS: The physico-chemical properties of Haplex were different from HA or PL or their mixture. After Haplex was administered to rats orally, the serum concentration of HA was increased when compared with the mixture or HA control groups from 4 h to 10 h (P<0.05). The DeltaAUC0-12 h of Haplex was also greater than that of the other three groups (P<0.05). CONCLUSION: The method of film dispersion and sonication can prepare HA and PL complex, and PL can enhance the oral absorption of exogenous HA.

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