

Permeability of human jejunal segments to gonyautoxins measured by the Ussing chamber technique

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The aim of this work was to study the mechanisms involved in intestinal permeability of gonyautoxins. For this purpose, the influence on transmucosal resistance of gonyautoxins and their permeability was investigated in excised human jejunal segments. To evaluate these events, the isolated mucosa was mounted in Ussing chambers for electrophysiological characterization. The organic gonyautoxin cations were applied to the mucosal side and samples collected on the serosal side. The permeability of gonyautoxins measured at 37°C was 4.3-fold greater than at 4°C, indicative of high cation selective transcellular permeability. In order to characterize the permeability of gonyautoxins, the effects of choline, ouabain, phlorizin and fluorescein were studied. The inhibition by these compounds was expressed as percent inhibition of the maximal flux of gonyautoxins at 120 min. Replacement of sodium ion by choline, showed the highest inhibition (85.5% from control). Ouabain, fluorescein and phloriz