2 - 1

IN VIVO INVESTIGATION ON THE INTESTINAL ABSORPTION OF VITAMIN A-ALCOHOL (RETINOL) IN RATS

WHANG, Eun-Mi* & BÜRGER, Hans Jürgen.
Inst. Parasitologie, Justus-Liebig-Universität Gießen, Germany

Absorption of fat-soluble vitamin, retinol occurs mainly in the proximal part of small intestine. But its intestinal transport mechanism isn't yet clear. The aim of the present study was to investigate on the mechanism of absorption of retinol by determining a concentration-dependent kinetic of retinol absorption in rats. The study was carried out by applying in vivo technique in which vitamin solution was infused to intestinal lumen and at the same time thoracic duct and choledochus duct were canulated to collect samples.

The investigations showed that retinol is absorbed in the small intestine by a saturable, carrier-mediated transport system, i.e. without significant differences between the proximal and distal halves of the small intestine. The transport of retinol taken up by the enterocytes occured via different mechanisms: while the main vitamin A transport via the thoracic duct was saturated by limiting transport factors such as retinol-CRBP-II-complex formation and retinol esterification with increasing substrate concentrations, the transport of retinol metabolite product via the portal vein was proportional to the substrate concentration.