

***In vivo* effect of calcium on rat intestinal alkaline phosphatase**

Intestinal alkaline phosphatase (IAP) is an enzyme with undisclosed functions in intestinal calcium absorption. *In vitro*, calcium concentrations higher than 20 mmole/L have an inhibitory effect on the activity of IAP and produce aggregation of the enzyme. This paper provides evidence that *in vivo* calcium effect on the enzyme bound to the brush border of the enterocyte is different from that observed *in vitro* on the purified enzyme. The results indicate that calcium increases the activity of IAP even at calcium concentrations that inhibit the enzyme *in vitro*. This increase in the activity is observed after 20 minutes of instilling the intestinal lumen with a solution containing calcium 1-100 mmole/L and was reproduced in *ex vivo* experiments where calcium was eliminated by the treatment with EGTA and replaced by addition of calcium chloride. The results might indicate that IAP could act as a sensor of luminal calcium concentrations.

Keywords: calcium, intestinal alkaline phosphatase, rat, histochemistry, immunohistochemistry