

The effect of calcium on disodium monofluorophosphate absorption from the gastrointestinal tract of rats

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The absorption of fluoride from disodium monofluorophosphate with or without added calcium has been studied in ligated stomachs and duodena of rats, in vivo. Measurements of fluoride absorption from sodium fluoride were also carried out for comparative purposes. The formation constant of the soluble, neutral calcium monofluorophosphate complex has been determined at 20°, 25° and 37°C. Its value at 37°C being 315 ± 10 (molar units). The influence of increasing concentrations of calcium on alkaline phosphatase (E.C.3.1.3.1) activity with disodium monofluorophosphate as substrate has been also studied. Gastric absorption of 2mM disodium monofluorophosphate in the presence of 50 mM calcium was much slower than that of 2mM disodium monofluorophosphate alone. The latter was slower than that of 2mM sodium fluoride. The opposite situation has been found for the duodenal fluoride absorption. Results obtained are interpreted in terms of the occurrence of an intestinal monofluorophosphate hydroly