[Tumor Biol., **17**, 320-324 (1996)] [Lab. of Pharmaceutics]

A fetal intestinal-type alkaline phosphatase produced in Caco-2 cells.

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Enzymic, immunological and lectin-binding properties of alkaline phosphatase (AP) produced in Caco-2 cells, a human colon carcinoma cell line, were investigated. The enzyme was very similar to fetal intestinal (meconium) AP in the enzymic and immunological properties, but different from fetal intestinal AP in lectin-binding properties; expression of the galactose moiety was altered in AP of Caco-2 cells, compared to that of fetal intestinal AP. These results indicate that AP of Caco-2 cells can be used in place of fetal intestinal AP when the enzymic properties of an AP of unknown origin are investigated, but cannot be used instead of fetal intestinal AP in the structural study of AP.

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Variable glyceryl dinitrate formation as a function of glutathione S-transferase.

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Nitroglycerin (GTN) has been used as the drug of choice in the treatment of angina pectoris. It has been shown that some glutathione S-transferases (GSTs) catalyze the metabolic conversion from GTN to glyceryl dinitrates (GDNs). In this study, we examined the substrate specificity of GSTs (alpha and mu GDT) for GTN. Mu GSTs degraded GTN time-dependently and formed 1,3-GDN in preference to 1,2-GDN at a ratio (1,2-GDN/1,3-GDN) of 0.61, whereas alpha GSTs formed twice as much 1,2-GDN as 1,3-GDN. These results showed that two GST families participate in the metabolic conversion of GTN at different hydrolyzing portions of the nitrogroups.

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Gastric tumorigenicity of 1,2-dimethylhydrazine on the background of gastric intestinal metaplasia induced by X-irradiation in CD (SD) rats.

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Five-week-old male CD (SD) rats were X-irradiated with a total of 20 Gy in 2 equal fractions with a 3-day interval. After the second irradiation, rats were fed normal diet supplemented with 1% sodium chloride, which is known to increase intestinal metaplasia. 1,2-Dimethylhydrazine (DMH) solution was injected i.m. into the back musculature at a dose of 20 mg/kg body weight weekly for 10 weeks, begining 20 weeks after the final irradiation. Twelve months after the initial carcinogen treatment, gastric tumors in the glandular stomach were observed in 2 (3 lesions) of 30 animals in the X-irradiated and DMH-treated group fed diet supplemented with 1% sodium chloride.