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An Enzyme Immunoassay for Cuprozinc Superoxide Dismutase Using Monoclonal Antibodies. Application for Pharmacokinetic Study.

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We developed an enzyme immunoassay for determining human cuprozinc superoxide dismutase (h-SOD) using two kinds of monoclonal antibodies prepared by immunizing h-SOD to BALB/c mice. This method was sensitive and specific enough to determine exogenous h-SOD injected into rats. When intravenously injected into rats, much of the immunoreactive h-SOD accumulated in the kidney and was rapidly excreted in the urine. We observed both a modified and an unmodified form of exogenous h-SOD in rat urine.

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Alkaline Phosphatase Isozymes in Non-malignant Intestinal and Hepatic Diseases.

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Human alkaline phosphatase isozymes, the tissue-unspecific (AP), the intestinal (IAP), and the placental alkaline phosphatase (PLAP), were determined in sera by use of isozyme-specific monoclonal antibodies. The clinical utility of serum determinations of alkaline phosphatase isozymes was evaluated in patients with diseases of the gastrointestinal tract and liver. No elevations of the different serum isozymes were observed in the intestinal diseases investigated. For non-malignant diseases of the liver the alkaline phosphatase isozymes presented characteristic patterns. It can be concluded that, in addition to AP, IAP and PLAP contribute to the total alkaline phosphatase activity for patients with liver diseases. The results suggest that specific methods for the identification of alkaline phosphatase isozymes could be of value.

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Pepsinogens I and II in Gastric Cancer: An Immunohistochemical Study Using Monoclonal Antibodies.

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Monoclonal antibodies were used to examine the immunohistochemical expression of pepsinogen I (PG I) and II (PG II) in 31 early and 76 advanced gastric cancers. Gastric cancer produced PG II more frequently than PG I, and production of latter is significantly associated with the former. Histologically, there were 54 intestinal-type and 53 diffuse-type cancers. The former produced PG II more frequently than the latter. Incidences of pepsinogen positively were not different between early and advanced gastric cancers or between cancers with or without lymph node metastasis, suggesting that production of pepsinogen is independent of tumor growth.