[*Pharm. Res.*, **15**, 1753-1759 (1998)] [Lab. of Pharm. Engineering]

Surface-modified Antiasthmatic Dry Powder Aerosols Inhaled Intratracheally Reduce the Pharmacologically Effective Dose.

Yoshiaki KAWASHIMA,* Takanori SERIGANO, Tomoaki HINO, Hiromitsu YAMAMOTO and Hirofumi TAKEUCHI

The aim of this study was to construct a reliable dry powder inhalation (DPI) testing system for use in guinea pigs. Using this system, we were able to demonstrate the superiority of pulmonary administration of hydrophilically surface-modified pranlukast hydrate powder (SM-DP) over IV and PO administration as reflected in improved pharmacological action. The hydrophilically surface-modified pranlukast hydrate powders were ideally aerosolized by the present DPI system, and were uniformly deposited in the iung lobes after inhalation. The pulmonary administration system with SM-DP is strongly recommended as an ideal system for the treatment of bronchial asthma in order to avoid systemic side-effects due to a dramatically reduced ED_{50}, comparable with or lower than IV, and the low plasma concentration of drug, 1/12 or less than that following IV and PO administration.

[*J. Anal. Bio-Sci.*, **20**, 371-374 (1998)] [Lab. of Pharmaceutics]

Isolation of Soybean Fermented Product and Its Effect on Mouse Liver Injury Caused by CCl_4.

Takaya MURAKAMI, Akihiro TAKASAKI, Kazuyuki HIRANO,* Naomichi OGITSU and Yoichi NAGAMURA

SL is a health food which is made from the extract of soybean fermented by Lactobacillus. We prepared a peptide fraction of SL by trichloroacetic acid (TCA) precipitation. Intraperitoneal administration of this peptide indicated a significant effect on curing liver injury caused by carbon tetrachloride (CCl_4). Further analysis of this precipitate was carried out by high performance liquid chromatography (HPLC), and a peptide with 1,000 Da moleculer weight was isolated.

[*J. Cancer Res. Clin. Oncol.*, **124**, 677-682 (1998)] [Lab. of Pharmaceutics]

Expression of Sucrase and Intestinal-type Alkaline Phosphatase in Colorectal Carcinomas in Rats Treated with Methylazoxymethanol Acetate.

Kimihide YOSHIDA, Wataru NAKAMURA, Kazuyuki HIRANO,* Hirofuki YUASA, Tetsuya TSUKAMOTO and Masae TATEMATU

In this study the small-intestine phenotype in rat colonic was investigated in terms of sucrase and intestinal-type alkaline phosphatase (I-ALP) activity. F344 rats were given intraperitoneal injections of methylazoxymethanol acetate at a dose of 25 mg/kg body weight once a week for 8 weeks and were killed 40 weeks after the first injection. Sucrase and I-ALP activities in proximal and distal colon adenocarcinomas were significantly higher than those in the normal colon epithelium. In the jejunum, normal tissue had significantly higher levels than tumors. Immunohistochemical staining of I-ALP was also strong in striated cell borders of colon adenocarcinoma cells. These data suggest that, whereas absorptive cells of the small intestine lose their own traits with tumor development, colonocytes acquire phenotypic features of the small intestine. Intestinal enzymes associated with the striated-cell border, such as sucrase and I-ALP, may be useful markers for malignant phenotype expression in colonocytes.

[*Urol. Res.*, **26**, 23-28 (1998)] [Lab. of Pharmaceutics]

Immunolocalization of Anti-placental Alkaline Phosphatse Monoclonal Antibody in Mice with Testicula Tumors and Lymph Node Metastasis.

Kiyoshi KOSHIDA, Kunihiko YOKOYAMA, Tetsuya IMAO, Hiroyuki KONAKA, Kazuyuki HIRANO,* Tadao Uchibayashi and Mikio NAMIKI

To evaluate the ability of an anti-placntal alkaline phosphatase (PLAP) monoclonal antibody (MAb) to localize to PLAP-exppressing tumors, we established a model of testicular tumor with metastasis to lymph nodes and liver in severe combined immunodeficient (SCID) mice. ^{131}I-labeled or ^{125}I-labeled MAb was simultaneously administered *via* the intravenous or lymphatic route, respectively. Preferential accumulation of MAb in PLAP-expressing tumors at primary as well as metastatic sites was demonstrated. The percentage of the injected dose of MAb found in the tumor was generally higher when MAb was administered intravenously. Identical tumor/blood ratios were found with that intravenous administration of a radiolabeled MAb is superior to lymphatic administration for tumor imaging and radioimmunotherapy.