〔J. Biochem., **112**, 840-844 (1992)〕 [Lab. of Biochemistry]

Inhibition of Dimeric Dihydrodiol Dehydrogenase by 4-Hydroxyphenylketone Derivatives-Aspects of Inhibitor Structure and Binding Specificity.

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Dimeric dihydrodiol dehydrogenases from pig liver, monkey kidney, and rabbit lens were inhibited more potently by 4-hydroxyphenylketones than by isoascorbate and ascorbate, known inhibitors of the enzymes. The steady-state kinetic analyses of the inhibition of the pig enzyme indicated that the 4-hydroxyphenylketones bound to an enzyme-$NADP^+$ binary complex. The structural comparison of 4-hydroxybenzaldehyde and ascorbate suggests that the hydroxy group at C-5, carbonyl group at C-1 and lactone ring of ascorbate are important for the binding to the enzyme.

〔Japan. J. Pharmacol., **58**, 269-282 (1992)〕 [Lab. of Pharmacology]

Novel Derivatives of 5-Fluorouridine and 5-Fluorouracil Having Potent Antitumor and Lower Immunosuppressive Activities.

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We studied the antitumor activities of 5-fluorouridine (5-FUR) and 5-fluorouracil (5-FU) derivatives and found satisfactory activities in 2',3',5'-tris-O-[N-(2-n-propyl-n-pentanoyl)glycyl]-5-FUR (UK-21) and 1-{6-[N-(2-n-propyl-n-pentanoyl)glycyl]amino-n-hexylcarbamoyl}-5-FU (UK-25). These compounds suppressed Meth A and E.L.4 tumor growths without decreasing body weight and blood leukocyte count. UK-21 and UK-25 are expected to develop anticancer drugs with lower immunotoxicological effects.

〔Japan. J. Pharmacol., **59**, 77-87 (1992)〕 [Lab. of Pharmacology]

Mechanisms for Glucocorticoid Inhibition of Immediate Hypersensitivity Reactions in Rats.

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The inhibitory mechanisms of immediate hypersensitivity reactions by glucocorticoid (GC) were studied in rats. GC inhibited IgE antibody-mediated passive cutaneous anaphylaxis (PCA), mediator cutaneous reactions and IgE antibody-mediated histamine release in the rat peritoneal cavity. Cycloheximide abrogated the inhibition of mediator cutaneous reaction, but failed to affect the inhibition of PCA and histamine release. These results indicate that PCA is inhibited by GC through inhibition of mediator release and vascular permeability increase. The latter action of GC is dependent upon protein synthesis.