[Biol. Pharm. Bull., **18**, 1248-1250 (1995)] [Lab. of Biochemistry]

Over-expression of Pig Lung Carbonyl Reductase in *Escherichia Coli.*

MASAYUKI NAKANISHI, YOSHIHIRO DEYASHIKI, YOSHIYUKI TAMADA, AKIRA HARA*

Tetrameric carbonyl reducatse of pig lung has been shown by cDNA cloning to be a member of the short-chain dehydrogenase family of enzymes. Constraction of the carbonyl reductase cDNA in an expression vector yielded an abundant, enzymatically active enzyme in *Escherichia coli*. The recombinant enzyme was purified to homogeneity and shown to be structurally, immunologically and functionally similar to lung carbonyl reductase.

[Cancer Res., **55**, 4053-4058 (1995)] [Lab. of Biochemistry]

Chemoprevention of Azoxymethane-induced Colon Carcinogenesis by Dietary Feeding of S-Methyl Methane Thiosulfonatein Male F344 Rats.

TOSHIHIKO KAWAMORI, TAKUJI TANAKA, MASAMI OHNISHI, YOSHINOBU HIROSE, YASUSHI NAKAMURA, KUMIKO SATOH, AKIRA HARA*

Modifying effects of dietary exposure of S-methyl methane thiosulfonate (MMTS) isolated from cauliflower on rat colon carcinogenesis induced by azoxymethane (AOM) and on the expression of cell proliferation biomarkers were investigated. Feeding of MMTS during the postinitiation phase decreased the numbers of colonic aberrant crypt foci and 5-bromodeoxyuridine-labeling index, colonic ornithine decarboxylase activity, and polyamine level in blood compared with those of AOM alone. These results suggest that MMTS might be a possible chemopreventive agent for intestinal neoplasia.

[Cancer Res., **55**, 4059-4064 (1995)] [Lab. of Biochemistry]

Chemoprevention of Rat Oral Carcinogenesis by Naturally Occurring Xanthophylls, Astaxanthin and Canthaxanthin.

TAKUJI TANAKA, HIROKI MAKITA, MASAMI OHNISHI, HIDEKI MORI, KUMIKO SATOH, AKIRA HARA*

The chemopreventive effects of two xanthophyllus, astaxanthin (AX) and canthaxanthin (CX) on oral carcinogenesis induced by 4-nitroquinoline 1-oxide (4NQO) was investigated in male F344 rats. The incidences of oral preneoplastics lesions in rats treated with 4-NQO and AX or CX were significantly smaller than that of the 4-NQO alone group. In addition, feeding of AX or CX decreased 5-bromodeoxyuridine-labeling index and polyamine level of oral mucosal tissues compared with administration of 4-NQO alone. These results indicate that AX and CX are possible chomopreventers for oral carcinogenesis, and such effects may be partly due to suppression of cell proliferation.