〔Chem. Pharm. Bull., **40**, 986-989 (1992)〕 [Lab. of Hygienic Chemistry]

## Synthesis and Antitumor Activities of Mitomycin C (1→3)-β-D-Glucan Conjugate.

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The conjugate of mitomycin C (MMC) with linear (1→3)-β-D-glucan was synthesized and its antitumor activities investigated. *In vitro* cytotoxicity of MMC-CMPS conjugate against L1210 cells was similar to that of MMC. In i.p.-i.p. system *in vivo* against P388 leukemia in mice, the maximum increase of MMC-CMPS conjugate in life span was higher than that of MMC but the therapeutic index was reduced. The reduction of the number of leukocytes caused by MMC was suppressed by attaching MMC to CMPS. On assay using serum of sarcoma 180 solid tumor-bearing mice with injection of MMC-CMPS conjugate, a drastic loss of tumor cells and an increase in PMN were observed.

〔Yakugaku Zasshi, **112**, 663-668 (1992)〕 [Lab. of Hygienic Chemistry]

## Synthesis and Antitumor Activities of Conjugates of Mitomycin C-Polysaccharide from *Tremella fuciformis*.

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The conjugates of MMC with glucuronoxylomannan (AC) from *Tremella fuciformis* were synthesized by the use of spacers (glycine, glycylglycine, glycylglycylglycine). The antitumor activity of the conjugates against sarcoma 180 tumor in mice was similar to that of MMC, except for MMC-G-ACP. The reduction of the number of leukocytes caused by MMC was suppressed by attaching MMC to AC. The conjugates did not lower the cytotoxicity of MMC against L1210 mouse leukemia cells *in vitro*. The release rate of MMC from the conjugates *in vitro* was much faster than that of MMC-dextran, and differed in the length of the spacer.

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## Cytochrome $b_{560}$ (QPs1) of Mitochondrial Succinate-Ubiquinone Reductase. Immunochemistry, Cloning, and Nucletide Sequencing.

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Mitochondrial succinate-ubiquinone reductase is composed of two parts, a water-soluble succinate dehydrogenase (SDH) and a two membrane-anchoring proteins (QPs). The larger polypeptide of QPs is believed to be associated with cytochrome $b_{560}$ (QPs1). The structure of QPs1 was studied by immunochemistry and molecular cloning and sequencing. The immunological studies using anti-rabbit QPs1 antibody indicated that QPs1 was a transmembranous protein and that some of its specific epitopes were covered by SDH. A cDNA encoding QPs1 was cloned by immunological screening using anti-QPs1 antibody. From the deduced amino acid sequence and predicted secondary structure of QPs1, the conserved two histidines appear to be involved in heme ligation of cytochrome $b_{560}$.