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[Lab. of Public Health]

**The Effect of Bio-antimutagens on Chlorambucil and Methotrexate Using
the Wing Spot Test in *Drosophila melanogaster***

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When certain mutagenic anti-cancer medicines are used for cancer therapy, secondary production of cancer is feared. Certain bio-antimutagenic substances may decrease secondary cancer induction without interfering with the effectiveness of the anti-cancer therapies. The bio-antimutagenic effects of cobaltous chloride, gallic acid, taurine and isethionate on chlorambucil and methotrexate were investigated using the *Drosophila melanogaster* wing spot test. Cobaltous chloride reduced the mutagenicity of methotrexate, but not chlorambucil. Gallic acid reduced the mutagenicity of both medicines. Taurine and isethionate also reduced the mutagenicity of methotrexate.

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[Lab. of Public Health]

Enhancing Effect of Metallothionein on Tumor Cell Invasion *in vitro*

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We have investigated the effect of Metallothioneins (MTs) on tumor cells invasion to reconstituted basement membrane Matrigel (MG). Human fibrosarcoma HT-1080 and mouse melanoma B16-BL6 cells invasion into MG coated filters was enhanced in a concentration - dependent fashion by addition of rat Cd MT I, purified from livers of Wistar male rats administered with CdCl₂. Whereas cells adhesion or chemotactic motility was not affected by addition of rat Cd MT I. Our experiments made clear this effect was enhancement of activities of two matrix metalloproteinases (MMPs), MMP2 and MMP9, secreted from HT-1080 cells by the addition of rat Cd MT I. Our investigations suggest that MT may be a significant activator of MMPs and deeply related to cancer metastasis as a factor on the host side.

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[Lab. of Public Health]

**Estimation of the Hemolytic Effects of Various Organotin Compounds by
Structure-Activity Relationships**

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The hemolytic effects of 27 organotin compounds, which are environmental pollutants, were studied with rabbit erythrocytes. Various EC₅₀ values caused by differences in their chemical structures were observed. The hemolytic activities of tri-n-butyltins and triphenyltins were higher than that of SDS. Tri-n-butyltin chloride showed the highest hemolytic activity. Methyltin compounds were less active than any other organotin compound tested. In the multiparametric regression analysis, the best regression equation ($r=0.854$) for estimation of their hemolytic effects was obtained by adopting the descriptors Index Value, Mean Information Index and Molecular Connectivity Index.