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Genotoxicity Study of Sophoricoside in Bacterial and Mammalian Cell System

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Sophoricoside was isolated as the inhibitor of IL-5 bioactivity from *Sophora japonica* (Leguminosae). It has been reported to have an anti-inflammatory effect on rat paw edema model. To develop as an anti-allergic drug, genotoxicity of sophoricoside was investigated in bacterial and mammalian cell system such as Ames bacterial test, chromosomal aberration assay, Comet assay and MOLY assay. In Ames test, sophoricoside of 5000 ~ 313 μg/plate concentrations was not shown significant mutagenic effect in *Salmonella typhimurium* TA98, TA100, TA1535 and TA1537 strains. The cytotoxicity (IC_{50} and IC_{20}) of sophoricoside was determined above the concentration of 5000 μg/ml in Chinese hamster lung (CHL) fibroblast cell and L5178Y mouse lymphoma cell line. At concentrations of 5000, 2500 and 1250 μg/ml, this compound was not induced chromosomal aberration in CHL fibroblast cell in the absence and presence of S-9 metabolic activation system. Also in comet assay, DNA damage was not observed in L5178Y cell line. Also in MOLY assay, sophoricoside of 5000 ~ 313 μg /ml concentrations was not shown significant mutagenic effect in absence of S-9 metabolic activation system. However, the higher concentration of 5000 and 2500 μg/ml of sophoricoside induced the increased mutation

frequency (MF) in the presence of S-9 metabolic activation system. From these results, no genotoxic effects of sophoricoside observed in bacterial systems whereas, genotoxic effects observed in mammalian cell systems in the presence of metabolic activation system. These results suggested that the metabolite(s) of sophoricoside can cause some genotoxic effects in mammalian cells.