

**[P-24]****Comparative Evaluation of the Alkaline Comet Assay with the Micronucleus Test for Genotoxicity Monitoring in Vivo**

Jae-Hyung Lee, Il-Yong Kim, and Chang-Kee Hyun

*School of Life and Food Sciences, Handong University, Pohang 791-780, Korea*

In recent years, attention has focused on the application of the alkaline single cell gel electrophoresis (SCGE or Comet) assay in environmental mutagenesis. To evaluate the suitability of the assay as a monitoring technique, the DNA damages in liver cells and erythrocytes of carp (*Cyprinus carpio*) exposed to benzo[ $\alpha$ ]pyrene (B[ $\alpha$ ]P) were estimated comparatively with the in vivo Comet assay and the micronucleus test (MNT). The genotoxicity of B[ $\alpha$ ]P in liver cells was shown by a good correlation between DNA damage and exposure time (and B[ $\alpha$ ]P concentration) obtained from the Comet assay. The MNT also showed a correlation between the frequency of micronucleated cells and the exposure time (and B[ $\alpha$ ]P concentration), but the correlating sensitivity was a bit lower than that of the Comet assay. The results indicate that the in vivo alkaline Comet assay has an advantage, together with its rapidness and high sensitivity, as an aquatic pollution monitoring technique over the MNT which has long been established as a well validated genotoxicity-monitoring test.

**Keyword** : Genotoxicity, Comet assay, micronucleus test, benzo[ $\alpha$ ]pyrene