- Abstract -

The purpose of this study was to investigate the toxic effects of 1-bromopropane (1-BP) on Sprague-Dawley (SD) rats which were treated(6 hrs a day, 5 days a week, 8 weeks) by inhalation.

The results were as follows ;

1. There was no observable genetic mutaions *in vitro* tests (Ames test) which were utilized *Salmonella* and *E. coli* and *in vivo* test (micronucleus for mutation) on rats exposed to 1-BP for eight weeks.

2. The lethal concentration for 50 percent kill (LC_{50}) was estimated 14,374 ppm (confidence limit 95% ; 13,624 - 15,596 ppm). No abnormal clinical signs related to the 1-BP were not observed with the acute inhalation dose for four hours.

3. By repeated inhalation the body weights of male and female were significantly reduced ($p<0.001$) by the dose of 1,800 ppm compared with control group, while the relative weights of liver were significantly increased ($p<0.001$) in both sexes. However there were no significant variation in food consumption, urine biochemistry, hematology and blood biochemistry for the treated rats compared with the untreated rats. No toxicologic lesions were observed by the histopathological test.

4. For the response of rats to the exposure to 1-BP, it was found that cytochromes P-4502B1/2 and P-4502E1 were responsible for the metabolism.

5. In cellular immune systems, the numbers of $CD4^{+}T$ cell and $CD8^{+}T$ cell of female rats were reduced, but the difference were not statistically significant for both male and female rats. However significant reduction in the numbers of NK cells of the females was observed with exposure to 1,800 ppm of 1-BP ($p<0.05$).

6. In the test of smelling urine, there were no changes in neural behaviors of male and female rats which were due to the test substances.