

Toxicity and Limonoids of Extracts from *Citrus* and Related Genera

Sook-Young LEE, Nirmala Kishore¹⁾, Han-Yong KIM²⁾, Hong-Sub Kim
and Sung-Jun KIM

Dept of Biology, Chosun University, Korea,

¹⁾Dept of Botany, Banaras Hindu University, India

²⁾Cheju Citrus Reaearch Institute, R.D.A., Korea

The present study has been undertaken to increase availability of citrus fruit as a medicinal resource and to isolate the effective principles from them. Crude extracts from 40 species of fruits were tested against the murine leukaemia cell line P388 and the bacteria *Escherichia coli* as well as the fungus *Aspergillus flavus in vitro*. Their cytotoxicity varied from 26 to 100% in the final concentration of 100µg/mL and 10 spp. of them showed high toxicity more than 90% against P388 cells. In addition, essential oil from lemon(*C. limon*) and several yooja(*C. junos*) exhibited 97 and 100% cytotoxicity, respectively. Methanol extracts of Byungkyool(*C. platymamma*) and Haenambuckpyung(*C. junos*) exhibited 92, 90% inhibition of growth of *E. coli*, respectively, at a concentration of 1,000ppm. Besides, 6 spp. showed a considerable fungitoxic action(above 90%) against *A. flavus*. Lime(*C. aurantifolia*) displayed strong toxicity on all three cell strains tested. It was apparant that there was considerable varation in cytotoxicity and antimicrobial activity, depending upon species and maturity. However, there was insignificant toxic difference between archicitrus and metacitrus in the genus *Citrus*. From structures elucidated by ¹H- and ¹³C-NMR in addition to X-ray crystallography and their biological activity are now in progress.