Cellular assessment of the extract of bambangan (Mangifera pajang) as a potential cytoprotective agent for the human hepatocellular HepG2 cell line

Abstract

This study was conducted to investigate the potential of bambangan (Mangifera pajang) fruit extracts in the protection against oxidative damage caused by tert-butyl hydroperoxide in the human hepatocellular HepG2 cell line. Proteins which might be involved in the cytoprotective mechanism were investigated using western blotting technique. Quercetin was used as a positive control. The results showed that only the kernel extract of M. pajang and quercetin displayed cytoprotective activity in HepG2 cells, with EC 50 values of 1.2 and 5.3 l g/ml, respectively. Expression of quinone reductase, glutathione reductase and methionine sulfoxide reductase A proteins were significantly up-regulated by quercetin, suggesting their involvement in the cytoprotective activity of quercetin. However, expressions of only glutathione reduc-tase and methionine sulfoxide reductase A proteins were significantly up-regulated by the kernel extract, again suggesting their involvement in the cytoprotective activity of bambangan kernel extract. Future study is needed to investigate the involvement of other cytoprotective proteins in the cytoprotection mechanism.