

## Inhibiton effect of mahkota dewa (*phaleria macrocarpa*) on benzo(a)pyrene induced cytotoxicity in CCRF-CEM cell lines

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Abstrak

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Mahkota Dewa as a traditional plant has been commonly used as traditional cancer medication. However, the mechanism of usage is not yet clear. The objective of this study was to know the mechanism of the protection effect of Mahkota Dewa on Benzo(a)pyrene (BaP) induced cytotoxicity in CCRF-CEM cell line. The result showed BaP induced cell death with in CCRF-CEM cell line was dose-dependent but not based on time-course. Exposure of this cell for 24 h with variation of dose between 5-20  $\mu$ M increased the percentage of apoptosis to about 15%. On the other hand, Mahkota Dewa itself has dose-dependently induced cytotoxicity and has no effect in the inhibition of BaP exposure.

Phosphorylation of p38 MAPK in both BaP and Mahkota Dewa induced cytotoxicity has been seen but the involvement of oxidative stress is unclear. However, in other cancer cell line SH-SY5Y human neuroblastoma cells, the inhibition effect of Mahkota Dewa in BaP exposure has been seen and no cytotoxicity effect appeared in this cell line. In conclusion, Mahkota Dewa has induced apoptosis in CCRF-CEM cancer cell line but not in SH-SY5Y cell line, so it has a potential anticancer effect; Mahkota Dewa, however, requires more researches on DNA level using other type of cancer to observe the mechanism.