

Inhibitory effect of semi-purified extracts obtained from Potato Tree (*Solanum erianthum*) against protein kinase and phosphatases

ABSTRACT

Kinase and phosphatase are two types of protein which copiously involved in the signal transduction cascade. Misleading of these signaling processes will cause cancer development and other related diseases in human. Therefore, over expression of these signaling proteins might be decreased by the presence of potential inhibitor. In the present study, an attempt was made to verify the potential of *Solanum erianthum* collected from Sabah, Malaysia against proteins in signal transduction involved in cancer pathway. Leaves of *S. erianthum* were extracted using methanol. Extracts were tested against protein phosphatase type 1 (PP1), MAPK kinase (MKK1) and MAPK kinase phosphatase (MSG5); which using PAY704-1 and PAY700-4, MKK1P386 and MKK1P386- MSG5 yeast strains, respectively. The results revealed that methanolic extracts of *S. erianthum* exhibited toxic activities against all assays. Bioassay-guided fractionation of *S. erianthum* showed positive activities from CHCl₃ fraction (CE) against PP1 protein. Chromatographic separation later confirmed column fractions F1 and F2 of *S. erianthum* as PP1 inhibitor. In- vitro cell growth inhibition assay of this plant sample showed moderate activities against HeLa, CaOV3 and MCF7 cell lines.