Type of presentation: Poster

LS-1-P-1404 Protective effect of Derris reticulata extract against alloxan-induced cell death in pancreatic RINm5F cells

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Derris reticulata Craib. (Family: Leguminosae) is a climbing plant distributed in the tropical regions of Asia and East Africa which is traditionally used as anti-coughing and expectorant. Several pharmacological activities of this plant, such as anti-inflammatory effect and antiviral action against herpes simplex virus type 1, have been documented. It was also employed as alternative diabetes treatment by local medicinal plant practitioners in some parts of Thailand. The aims of this study were to evaluate antioxidant and protective effects of the aqueous extract of *Derris reticulata* (ADR). Antioxidant activities were determined using FRAP, ABTS and DPPH scavenging methods *in vitro*. The scavenging activities of ADR against DPPH and ABTS free radicals were found at the IC_{50} of 239.85 ± 0.13 and 515.05 ± 0.13 µg/ml, respectively, whereas the FRAP value of ADR was 0.23 ± 0.05 µmol of Fe^{2+}/mg dried extract. Morphological changes and density of pancreatic RINm5F cells were observed under inverted microscope. The protective effect of ADR against alloxan-induced cell death was studied by MTT assay. It was found that alloxan, a free radical producing agent, decreased the number of RINm5F cells and altered their morphology as well as caused cell detachment from plate. In accordance with microscopic examination, the result from MTT assay showed that pretreatment of cells with ADR increased cell viability after exposure to alloxan. These findings suggest that antioxidant activities of ADR may play a key role in the protective effect against alloxan-induced toxicity *in vitro*.

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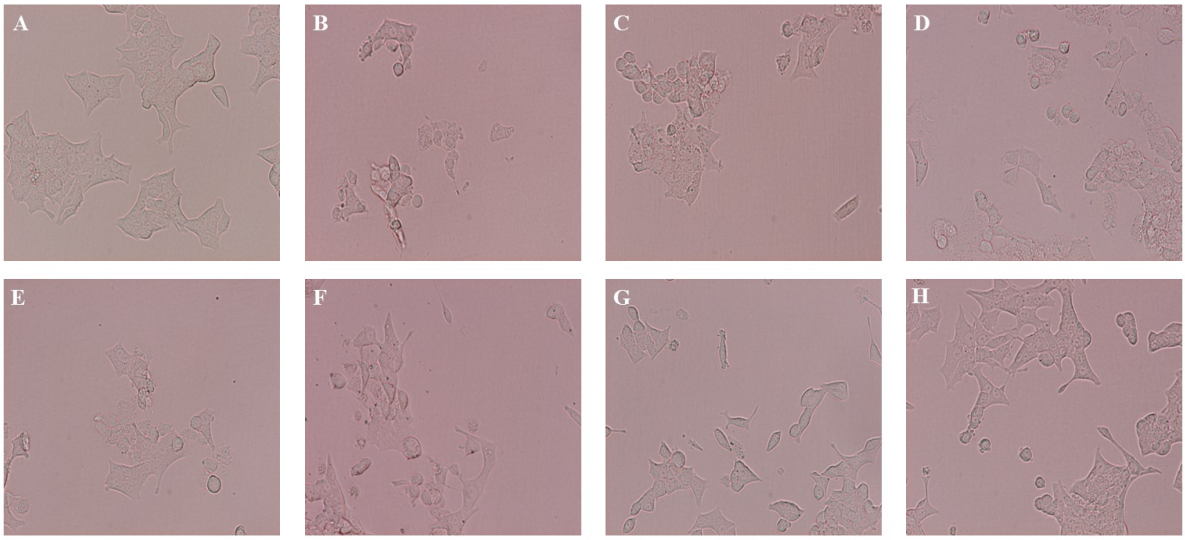

Fig. 1: Photomicrograph of pancreatic RINm5F cells (200×). Panel A: control, Panel B: cells treated with alloxan (9 mM), Panel C-H: cells pretreated with Derris reticulata extract (50, 100, 150, 200, 250 and 500 µg/ml, respectively) before exposure to alloxan.

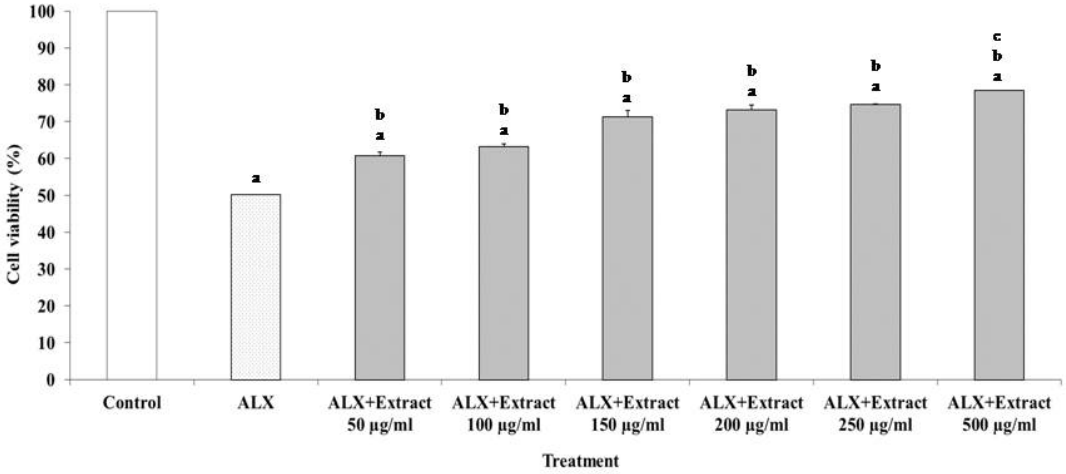

Fig. 2: Cytoprotective effect of Derris reticulata extract. Cell viability was determined by the MTT assay. RINm5F cells were pretreated with the extract for 12 hours before exposure to alloxan (9 mM). Results are mean ± S.E.M. (n=3). a, b and c ($p < 0.05$) significant difference from control, alloxan and the lower doses, respectively.