Effect of Leaf Aqueous Extract of *Syzygium cumini* Against Methylglyoxal-Induced Cytotoxicity in Human Leucocytes *in vitro*

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Methylglyoxal (MG) is a reactive carbonyl compound that form covalent adducts with specific lysine and arginine residues in proteins, leading to the formation of intracellular advanced glycation end products (AGE’s), which consequently could alter protein function leading to DNA damage and cell death. *Syzygium cumini* is a plant widely used popularly in preventing the deleterious effect caused by diabetes and its products (such as MG and AGE’s). Thus, we aimed to investigate the effect of leaf aqueous extract of *Syzygium cumini* (LAESC) at different concentrations (10, 50 and 100 µg/mL) on the cytotoxicity induced by 0.2 µM MG in healthy human leucocytes by Trypan Blue method *in vitro*. After 3 hours incubations at 37ºC, MG 0.2 µM caused significant decrease in the cell viability when compared to control group (50.85 ± 12.6 vs 91.80 ± 4.88). LAESC caused no cytotoxicity at all the concentrations tested; however, in the concomitant treatment of plant extract with MG, only LAESC 10 µg/mL was effective in preventing the cytotoxicity induced by MG 0.2 µM (67.03 ± 12.53 vs 50.85 ± 12.6). LAESC at 50 and 100 µg/mL did not have any beneficial effect against methylglyoxal-induced citotoxicity. The results of this study suggest that only concentrations lower than 10 µg/mL can be effective against the loss of cell viability caused by MG. However, due to be a preliminary study, more concentrations and parameters must be evaluated in order to confirm the hypothesis proposed in this work.

Key Words: Methylglyoxal, *Syzygium cumini*, Trypan Blue.

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