**Nitric oxide inhibitory and anti-Bacillus activity of phenolic compounds and plant extracts from Mesua species**

ABSTRACT

Species from the genus Mesua, Calophyllaceae, are rich source for phenolic compounds such as coumarin xanthone, and benzophenone derivatives. An investigation on the potential biologically active phenolic compounds 1–5 and crude extracts from the stem bark of Mesua hexapetala (Hook. f.) P.S. Ashton and Mesua beccariana (Baill.) Kosterm. for nitric oxide inhibitory activity on RAW 264.7 macrophage as well as anti-Bacillus activity on selected Bacillus were carried out. Hexapetarin (1), which we reported as a new compound isolated from M. hexapetala showed very good nitric oxide inhibitory activity with an IC50 value of 30.79 ± 2.68 μM. This compound also gave very significant activities towards Bacillus subtilis ATCC 6633, Bacillus cereus ATCC 33019, Bacillus megaterium ATCC 14581 and Bacillus pumilus ATCC 14884 in disc diffusion and minimum inhibitory concentrations assay. Moreover, 1,3,7-trihydroxy-2,4-di (3-methyl-2-butenyl)xanthone (2) isolated from M. hexapetala showed very significant nitric oxide inhibitory activity with an IC50 value of 12.41 ± 0.89 μM and does not exhibit anti-Bacillus activity on four types of Bacillus. Meanwhile, compounds 3–5 were inactive in the nitric oxide activity test and anti-Bacillus assay.

**Keyword:** Coumarins; Xanthones; Phenolic compound; Nitric oxide inhibitory; Anti-Bacillus