A027 Anti-inflammatory effect of *Aegle marmelos*, an Indian medicinal plant

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Aegle marmelos Corr. (Rutaceae) is growing in India and it is called as Bael tree (1). Its leaves are venerated and given prominent place in several indigenous systems of medicine (2). It is traditionally claimed to be beneficial for fever, inflammation, diarrhoea and heart ailments (3). In our earlier studies, we have reported its role in amphibian hearts (4). In the present study, an attempt has been made to investigate the anti-inflammatory activity of the total aqueous extract of the leaves of *A. marmelos* in paw oedema (acute) and cotton pellet granuloma (sub-acute) methods in Sprague-Dawley rats. The total aqueous extract (TA) was obtained from the shade dried leaves (4 kg) of *A. marmelos* and used for this study. The acute and sub-acute anti-inflammatory studies were carried out by the method previously described (5,6). In acute model, both phenylbutazone (PB) (50 mg/kg i.p.) and TA (100 and 50 mg/kg i.p.) produced a significant reduction (79.04% and 54.84%, respectively) in the volume of paw oedema in rats. In sub-acute model, similar to PB, TA treatment also reduced granuloma tissue formation significantly (67.70% and 40.86%, respectively) compared to control animals. Thus, the results of the present study confirmed the traditional claim suggested for *A. marmelos* contained anti-inflammatory activity.

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A028 Prenylated flavones are inhibitors of NO production by J774 and ROS by human PMNs

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Prenylated flavones have shown to be a source of interesting biological activities including anti-inflammatory. In this study the effect of eight prenylated flavones, artelascarpin (**1**), artelasticin (**2**), artelastin (**3**), artelastochromene (**4**), artelastofuran (**5**), artocarpesin (**6**), carpelastofuran (**7**), cyclocummunin (**8**), previously isolated from *Artocarpus elasticus* by our group (1,2,3), was evaluated on the production of nitric oxide (NO) by J774 mouse macrophages and reactive oxygen species (ROS) by human polymorphonuclear neutrophils (PMNs). All the compounds, except **1** and **8**, inhibited dose-dependently the production of NO by LPS/IFN-γ activated J774 cell line (quantified by Griess assay). While compounds **4**, **5**, **6**, **7** exhibited moderate suppressor effects (15 μM < IC_{50} < 40 μM), **2** and **3** were potent NO inhibitors (IC_{50} = 3.9 μM and 1.8 μM, respectively). Neither NO-scavenger activity nor macrophage toxicity (evaluated by MTT-assay) was detected. Given the strong activity of compound **3** further studies revealed that it acted inhibiting the induction of NO-synthase and not the activity of this enzyme.

Compound **3** also showed to be an inhibitor of ROS production by human PMNs. When luminol or lucigenin was used as enhancing probes and opsonised zymosan as stimulus, a moderate inhibition of chemiluminescence was detected (IC_{50} = 44.1 μM and 31.5 μM, respectively). On the contrary, when phorbol myristate acetate was used as stimulus, a weak inhibition of luminol chemiluminescence was detected (IC_{50} = 101.7 μM) but a strong inhibition was observed when the probe lucigenin was used (IC_{50} = 2.0 μM). These results indicated a superoxide-scavenging activity of compound **3**. Studies on the hypoxanthine/xanthine oxidase system have confirmed the scavenging activity of this flavone.

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