# Anti-inflammatory activity of halogenated secondary metabolites of Laurencia snackeyi (Weber-van Bosse) Masuda in LPS-stimulated RAW 264.7 macrophages


## Abstract

Secondary metabolites of tropical seaweed are proven to exhibit variety of biological activities. Six species of seaweed (Caulerpa racemosa var. laete-virens, Caulerpa sertularioides f. longipes, Halymenia dilatata, Laurencia snackeyi, Padina boryana, and Sargassum swartzii) were tested for anti-inflammatory activity in lipopolysaccharide (LPS)-stimulated RAW 264.7 cells. Crude L. snackeyi extract exhibit potent activity, and upon bioassay-guided isolation, it contained four halogenated compounds that exert profound inhibitory effects against nitric oxide (NO) production in LPS-stimulated RAW 264.7 cells. These compounds were subjected to spectroscopic measurements and were identified as palisadin A (1), aplysistatin (2), 5-acetoxypalisadin B (3), and palisol (4). Further experiments showed aplysistatin (2) to significantly inhibit NO production and prostaglandin-E2 (PGE2) production, and suppress inducible nitric oxide synthase (iNOS) and cyclooxygenase-2 (COX-2) expression in LPS-stimulated RAW 264.7 cells. Therefore, aplysistatin (2) is suggested to inhibit NO and PGE2 production via the inhibition of iNOS and COX-2, indicating that its activity may be attributed to the modulation of anti-inflammatory agents.