

Ethanolic Crude Extract and Flavonoids Isolated from *Alternanthera maritima*: Neutrophil Chemiluminescence Inhibition and Free Radical Scavenging Activity

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Extracts from *Alternanthera maritima* are used in Brazilian folk medicine for the treatment of infectious and inflammatory diseases. Bioassay-guided fractionation of *A. maritima* aerial parts yielded an ethanolic crude extract, its butanolic fraction and seven isolated flavonoids (two aglycones, two *O*-glycosides and three *C*-glycosides) with antioxidative activity. The ability of these samples to scavenge enzymatically generated free radicals (luminol-horse-radish peroxidase- H_2O_2 reaction) and inhibit reactive oxygen species (ROS) production by opsonized zymosan-stimulated human neutrophils (PMNLs) was evaluated by chemiluminescence methods. In both assays, the butanolic fraction was significantly more active than the ethanolic crude extract, the flavonoid aglycones had high inhibitory activities and the *C*-glycosylated flavonoids had no significant effect even at the highest concentration tested (50 $\mu\text{mol/L}$). However, the *O*-glycosylated flavonoids inhibitory effects on chemiluminescence were strongly dependent on the chemical structure and assay type (cellular or cell-free system). Under the conditions tested, active samples were not toxic to human PMNLs.

Key words: *Alternanthera maritima*, Flavonoids, Neutrophil