Potential of Inhibition presented by *Synadenium grantii* (Hook) Euphorbiaceae against Human Myeloperoxidase and Hypoclorous Acid.

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**Introduction:** Hypoclorous acid (HOCl), produced through oxidation of chloride catalyzed by myeloperoxidase (MPO) in presence of hydrogen peroxide, is the most frequent oxidant generated by leukocytes. Despite of their protective functions against microorganisms, they can also cause serious tissue injuries. *Synadenium grantii*, popularly known in Brazil as “janaúba” or “leiterinha”, is largely used as anticancer and antiulcerogenic. **Objective:** The aim of this research was evaluate the hydroalcoholic extract of the bark from *Synadenium grantii* against human MPO and HOCl, comparing them with resveratrol. **Methods:** Both assays were realized in sodium phosphate buffer 50 mM, pH 7.4. HOCl assay: samples plus HOCl were incubated for 15 minutes; then tetramethylbenzidine (TMB) was added before a last incubation of 5 minutes; the absorbance was read at 650 nm. MPO assay: Guaiacol (70 mM) was used as oxidizable substrate for 8nM MPO/0.3mM H₂O₂ kinetics; the reaction lasted 1 minute and was read at 470 nm. **Results:** Both resveratrol and hydroalcoholic extract of bark from *Synadenium grantii* were able to protect TMB and guaiacol against oxidation respectively caused by HOCl (resveratrol IC₅₀ = 0.8 µg/mL and *S. grantii* IC₅₀ = 0.7 µg/mL) and MPO (resveratrol IC₅₀ = 0.41 µg/mL and *S. grantii* IC₅₀ = 9.17 µg/mL). **Conclusion:** The present study shows that the hydroalcoholic extract of bark from *S. grantii* has a great potential of inhibition against HOCl and human MPO and could be a good source of new drugs for chronicle diseases influenced by oxidative burst, like Alzheimer, arthritis and atherosclerosis.

Keywords: human myeloperoxidase, hypoclorous acid, *Synadenium grantii*

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