

Antihemostatic properties of essential oil from *Schinus molle* L.

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Keywords: Thrombosis, Anacardiaceae, sesquiterpene, platelet, coagulation

Thrombosis is associated to the ischemic heart disease and stroke, which collectively caused one in four deaths worldwide (1). Essential oils have great importance in the development of research, which indicates a possible antithrombotic property. The aim was to evaluate the chemical composition of the essential oil from *S. molle* (EOSM) and evaluate their activity on the hemostasis. The EO was extract from leaves of *S. molle* by the hydrodestillation. Dry EOSM was characterized by GC-FID-MS. Anticoagulant assay was performed by aPTT and PT tests. The platelet aggregation assays were performed in aggregometer following the turbidimetric method (2) using ADP and collagen as aggregation inductor. Forty-five compounds were identified in the EO with 88.77% of sesquiterpenes. α -Muurolol and δ -cadinene were the major compounds (22.85% and 9.66 %, respectively). EOSM did not show anticoagulant activity in the concentration used (40, 200 and 400 mg ml⁻¹). The lowest concentration of EOSM evaluated to the platelet aggregation (5.0 mg ml⁻¹), using ADP as inducer, had greater inhibitory power (80%), and the higher concentration (40 mg ml⁻¹) inhibited 48% of platelet aggregation. When using collagen as an inducer, EOSM did not show significant activity suggesting that the antithrombotic action of EO could be related to the ADP inducer, possibly through the inhibition of P2 family receptors, which are activated by ADP. EOSM does not interfere in the blood coagulation pathways and does not act on the induction by collagen, but is an excellent antiplatelet. These results are very useful for following the studies with other inducers of platelet aggregation and future *in vivo* studies, in order to promote scientific bases for the development of a herbal medicine that can be used in the prevention or treatment of cardiovascular diseases. This is the first report of antiplatelet action of *S. molle*.

1. Gary et al., Journal of Thrombosis and Haemostasis, 2014, 12, 1580 – 1590.

2. Born GV and Cross MJ. Journal of Physiology, 1963, 168, 178-95.

Acknowledgements: CAPES, CNPq, FAPERJ, UFRRJ