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P-111 Biological activity of 6,7-dehydroroyleanone derivatives from *Plectranthus aliciae*

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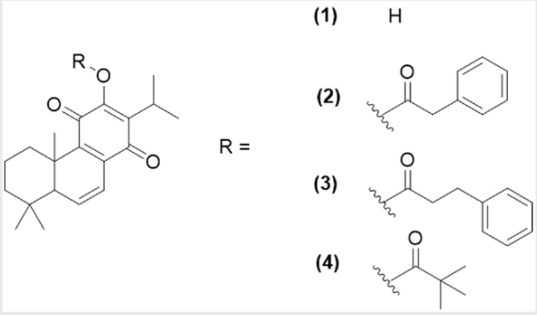
Plectranthus genus (Lamiaceae) is known to be rich in bioactive abietane royleanone-type diterpenes, such as 6,7-dehydroxyroyleanone (**1**, ▶ **Fig. 1**), which have been previously found in *P. madagascariensis* (var. *aliciae* Codd). This abietane royleanone presents moderate to significant cytotoxic activity against several cancer cell lines. Moreover, **1** has one hydroxyl group suitable for derivatization that can be explored to enhance the cytotoxic activity of lead compound **1**. Based on this, the aim of the present work is to explore the obtention of **1**, from *P. aliciae aliciae* (Codd) van Jaarsv. & T.J.Edwards., a subspecies of *P. madagascariensis* to be further used in the preparation of new derivatives with enhanced biological activities.



▶ **Fig. 1** Structure of 6,7-dehydroxyroyleanone (**1**) and semi-synthetic ester derivatives (**2**, **3** and **4**).

P. aliciae leaf hydrodistillation using Clevenger equipment was performed, affording the essential oil (EO). **1** was assessed as the major compound of the EO, by HPLC-DAD, which was isolated and used as a scaffold for esterification reactions. It was possible to obtain three new acyl derivatives (**2** – **4**, ▶ **Fig. 1**), with overall good yields (86 – 95 %). Regarding the biological activity screening, the semi-synthetic derivatives (**2** – **4**) improved the antioxidant activity and the cytotoxic activity in MCF-7 and NCI-H460 cancer cell lines, when compared to **1**. Amazingly, the new esters (**2** – **4**) showed a promising anti-inflammatory activity, in the range of 16 to 53 times more than **1**, and also higher than the one of the positive control (dexamethasone). Currently, the mechanism of action and security of the potential anti-inflammatory derivatives are under evaluation.

P-113 Omega-3 fatty acids intake in vegetarian diets

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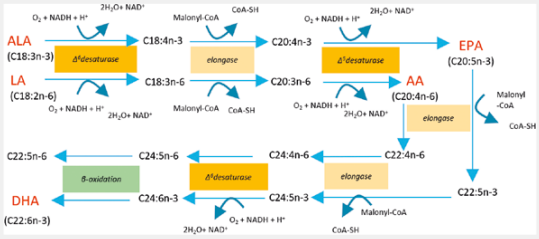
Vegetarian diets have an important role in reducing body mass index, ischemic heart disease mortality, lower prevalence of hypertension, type 2 diabetes, colon, and prostate cancer [1]. Vegetal food sources of omega 3 fatty acids (n-3PUFA) contain α-linolenic acid (C18: 3n-3) (ALA). The conversion of ALA to the active compounds, eicosapentaenoic acid (C20: 5n-3) (EPA) and docosahexaenoic acid (C22: 6n-3) (DHA) in the body involves desaturation and elongation. Food sources of n-3PUFA in an omnivorous diet are either ALA or by the direct consumption of fish or animal products, while in an ovo-lacto-vegetarian or vegan diet intake of n-3PUFA is limited to the bioconversion of ALA to EPA and DHA. The conversion of ALA to EPA and DHA has a low efficiency as an important part of ALA is used in mitochondrial β-oxidation. Another problem of ALA conversion is the competition between ALA and linoleic acid (C18: 2n-6) (LA), the precursor of omega 6 fatty acids (n-6PUFA), for Δ6 desaturase, a key enzyme in the PUFA metabolism, converting LA and ALA into γ-linolenic acid (C18:3n-6) (GLA) and (C18:4n-3), respectively, with a higher affinity for LA [2]. Following a vegetarian or vegan diet raises the issue of adequate supplementation with EPA and DHA, as important precursors of extremely active compounds obtained via cyclooxygenase or lipoxygenase pathway, or from the class of resolvins or neuroprotectins with complex physio pathological implications (▶ **Fig. 1**).



▶ **Fig. 1** Biosynthesis of EPA, DHA and AA (arachidonic acid) from precursors ALA and LA.

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P-114 Effect of *Caesalpinia spinosa* (Molina) Kuntze extract P2Et on the resolution of cutaneous leishmaniasis in hamsters infected with *Leishmania braziliensis*

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