

Plectranthus Spp: A Key Source of Lead Molecules for Cancer Research

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ABSTRACT

Natural products obtained from medicinal plants are widely recognized as an important source of new therapeutic molecules with potential use in several serious diseases, including cancer. The *Plectranthus* genus is used in traditional medicine due to its potential to treat several illnesses. Diterpenoids are bioactive molecules widely found in *Plectranthus spp.*, and have a broad spectrum of biological activity, namely anticancer properties.

In this work, it will be described several approaches using these bioactive led molecules and examples such as Parvifloron D from *P. ecklonii*, dehydroroleanone from *P. madagascariensis*, and *P. grandidentatus*, and, Coleon U from *P. mutabilis* will be described. These lead molecules can be further used for drug development and a hit molecule is the patented diterpenoid benzoylroyleanone (RoyBz). The RoyBz was prepared using Roy as starting material. RoyBz potently inhibited the proliferation of colon cancer cells by inducing a PKCdelta-dependent mitochondrial apoptotic pathway involving caspase-3 activation. The results point to promising activators of PKCs with high potency and isoform-selectivity that may emerge from the exploitation of this new family of abietane diterpenoids.

Keywords: *Plectranthus* genus, Biological activity, Anticancer properties

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