

Identification and characterization of new anti-angiogenic compounds from natural sources

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The inhibition of angiogenesis has attracted broad attention in the field of pharmacological research, not only for cancer, but for other angiogenesis dependent diseases including ophthalmic, cutaneous and inflammatory diseases, as well as a number of rare diseases. Our research group has characterized multiple new natural bioactive compounds with multitargeted antiangiogenic effects by employing a well-established set of *in vitro*, *in vivo* and *ex vivo* preclinical models of angiogenesis. Most of them have been isolated from plants and terrestrial microorganisms, mainly due to their higher availability and because their therapeutic effects had been previously known in folk traditional medicines. *In vitro* primary screening includes cell differentiation and toxicity and proliferation assays. Secondary screening involves several experiments to evaluate effects on adhesion, migration, invasion, apoptosis or cell cycle analysis, among others. Additionally, we perform a further molecular characterization analyzing possible signaling pathways that are affected to elucidate their mechanism of action. The characterization is completed with the *ex vivo* aortic ring assay, and *in vivo* assays, as CAM and zebrafish assays, to ensure the anti-angiogenic ability. As a fruit of the mentioned screening, a number of compounds with remarkable anti-angiogenic activity have been identified and characterized.

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