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Extended Abstract

Searching for Molecules against Cancer in the Azores: Plants, Macroalgae, and Synthetic Compounds †

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Pursuing the goal of finding active molecules against cancer using various approaches, we focused on natural-based scaffolds in terrestrial plants and in marine macroalgae, taking advantage of the rich biodiversity of the Azores islands. We also focused on molecules obtained by synthesis. In the present work, we report examples of molecules which illustrate these investigations.

Concerning plants such as *Juniperus brevifolia*, an Azorean endemic conifer, we isolated dehydroabietinol, which was active against human tumor cell lines MCF7, A549 and especially against HeLa (IC_{50} = 15.7 μM, with a selectivity index SI = IC_{50}Vero/IC_{50}HeLa of 1.78) [1].

From seaweed *Cystoseira abies-marina*, two new meroditerpenes, cystoazorols A and B, were isolated. Cystoazorol A exhibited the highest growth inhibition against HeLa cells (21.6 and 5.9 μM in lag and log growth phases, respectively), with an SI higher than taxol, the positive control [2].

Finally, we report the antitumor activity of chalcones obtained by chemical synthesis. Among the different compounds synthesized, the best results against A549 cell line were IC_{50} values of 367.4 and 311.4 μM for a chalcone and a flavanone, respectively. Although the activity of these molecules is lower than that of the natural compounds referred above, it should be noted that this activity may be modulated by variating substituent groups.

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