Effect of Crude Extract of Marine Sponges on *Saccharomyces cerevisiae* Multidrug Resistance Protein Pdr5p

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The search for new compounds that can act as multidrug resistance inhibitors is a very promising approach to improve chemotherapy efficacy. This kind of resistance is often promoted by ABC transporters, for example, P-glycoprotein from mammalian cells, decoded by the gene ABCB1 (MDR1). In *Saccharomyces cerevisiae*, homologous genes were detected, such as PDR5. The product of this gene, the protein Pdr5p, confers resistance to several unrelated drugs. Recent studies demonstrate that marine sponges can be a great source of new natural products as the inhibitory effect of orodin from *A. sventris* on the Pdr5p activity (Da Silva *et al*, 2011). In the present investigation, we have evaluated the effect of crude extracts, from different marine sponges, on Pdr5p catalytic activity. The extracts named as BA04ES2, BA04ES3, BA04ES4, BA04ES5, BA04ES6, BA04ES7 and BA04ES8 were tested against Pdr5p ATPase activity at 100 µg/mL, as a first screening. Extracts BA04ES5 and BA04ES8 extracts were able to inhibit more than 50% of the ATPase activity and were submitted to dose response curves which showed an approximately IC50 of 94,7 µg/ml and 15,8 µg/ml, respectively. The results showed that these extracts contain compounds that could act as inhibitors of multidrug resistance transporters. Currently we are investigating the compounds responsible for the enzyme inhibition activity.

Word Keys: Pdr5p, marine sponge, MDR

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