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

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INTRODUCTION: ABC transporters constitute a superfamily of transmembrane proteins that act mediating the translocation of several substrates across membrane using the energy of ATP hydrolysis. This mechanism of unrelated substrates efflux, so-called multidrug resistance, has been associated with diseases and is a problem in chemotherapy efficacy. Recent studies demonstrate that marine sponges can be a great source of new natural products that can act as multidrug resistance inhibitors. In the present investigation, we have evaluated the effect of crude extracts, from different marine sponges, on Pdr5p (ABC transporter) catalytic activity.

MATERIAL AND METHODS: A screening of crude extracts was done using chemosensitization tests as a tool: Dish plate containing YPD medium were inoculated with 2,5x10^6 cells/mL in the presence or absence of fluconazole 100µg/mL; after that paper disks containing 50 µg/mL of each crude extracts were deposited on surface of YPD medium and the plates were incubated at 30°C during 48 hours.

RESULTS AND DISCUSSION: The extracts, named BA04ES-08, BA04ES-69, BA04ES-90, BA04ES-91, BA07ES-27, BA07ES-30, BA07ES-31, BA07ES-63, presented inhibition zone after two days and were selected to be use in others experiments as ATPase activity of transporter Pdr5p.

CONCLUSIONS: Those extracts, after these preliminaries tests showed that marine sponges (as showed before; Da Silva et al., 2011) could be a source of organic compounds that could act as inhibitors of multidrug resistance transporters. It is important to point that all crude extracts cited here will be pass later to a purification methods in order to identify and to obtain the purified compound responsible for the inhibitory activity.