# INHIBITORY EFFECTS OF GALLIC ACID ESTER DERIVATIVES ON *SACCHAROMYCES CEREVISIAE* MDR PROTEIN PDR5P

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Multidrug resistance (MDR) is the most preocuppying phenomenon in chemotherapy nowadays. It is conferred by membrane proteins which are able to pump drugs out of the cell, leading to treatment failure. Pdr5p is a membrane protein involved in the multidrug resistance phenomenon in *Saccharomyces cerevisiae* yeast cells, turning them resistant to several unrelated drugs, which makes it an excellent model for the search of new MDR reversal agents. In this study, we have used gallic acid derivatives with substitutions either on the ester moiety or in the benzene ring and tested their effects on Pdr5p. The ones with a longer side chain (8 to 12 carbons) produced a greater inhibition on Pdr5p ATPase activity at a concentration of 100μM. Dose-response curves were obtained with concentrations ranging from 5 to 200 μM from derivatives with side chain lenght of 8, 10 and 12 carbons, of which n-decyl gallate was the best inhibitor and showed through double-recyprocal plots to be a competitive one. These compounds have also inhibitted up to 100% of Rhodamine 6G efflux, a flourescent substrate. These results show that gallic acid derivatives are a very promising new class of Pdr5p inhibitors.