

Intracellular proteome profile of *Phanerochaete chrysosporium* during the lapachol biotransformation process

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Biotransformation studies can be useful for the production of new molecules with industrial and pharmaceutical interest. The lapachol, a natural product is a naphthoquinone that presents many biological activities which have potential uses in the pharmaceutical industry. The aim of this work is to analyze the proteome profile of *Phanerochaete chrysosporium* during the lapachol biotransformation process. The microorganism was cultivated in 250 mL Erlenmeyer flasks containing 50 mL of soy-glucose medium and incubated on a rotary shaker at 120 rpm at 30 °C. After 24 hours, the mycelial mass was transferred to a Czapeck medium containing lapachol solution in DMSO (final concentration of 25 µg per mL) and bioprocess was continued for 24 hours. Control, without lapachol was also made. The mycelial mass was lysed, the proteins were precipitated with TCA 10% and acetone and 2D electrophoresis was performed in triplicate. The gels were analyzed by ImageLab 2D platinum v7.0 (GE) software. In addition, the proteolytic activity of intracellular proteome and secretome were determined using fluorescence resonance energy transfer (FRET) substrate. It identified 621 and 585 spots of control and lapachol respectively. Of these, we obtained 399 common to both, 222 control exclusive and 186 lapachol exclusive. Only the control secretome showed proteolytic activity. The obtained results suggest that the fungus modifies the profile of the proteins production during the lapachol biotransformation process.

Biography

Luciana Barbosa Coitinho was graduated in Pharmacy and Biochemistry and has a Master's degree in Biotechnology. She is currently a PhD student of Pharmaceutical Sciences program at the University of Sao Paulo, Brazil.

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