

**ABSTRACT BOOK**



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## **PW125 Evaluation of decolourisation of reactive dyes by selected yeasts and related enzymatic activity**

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**Background:** Textile industry generates high amounts of effluents that are discharged in the environment. Dyes are resistant to biodegradation and are potentially harmful to aquatic life. The existent chemical treatments are very costly and generate large quantities of sludge. Alternatives to aid the decolourisation of dyes in textile wastewaters are of major importance.

**Objectives:** The aim of this work was to assess the capacity of selected yeast strains to decolourise specific dyes used in the textile industry and to assess the activity of enzymes related to decolourisation ability.

**Methods:** Three Everzol dyes were selected for this work. Yeasts LIIS36B, HOMOGST27AB and HOMOGS20B were cultivated in Normal Decolourisation medium (NDM) supplemented with 100 mg/L of each dye, in 24 well microplates incubated at 25 °C for 48 h and 100 rpm. Decolourisation was determined spectrophotometrically.

The enzyme activity assays were assessed in intra and extracellular extracts. The extracellular extract corresponded to the supernatant resulting from 1 day of yeast growth in NDM, whereas the intracellular extract was obtained by cellular disruption of the corresponding pellet using glass beads. The enzymatic activities were determined spectrophotometrically and protein and molecular weights were evaluated by Bradford and FPLC, respectively.

**Results:** LIIS36B was the most effective and versatile strain in the decolourisation of the three Everzol dyes.

HOMOGS20B absorbed most of the dyes whereas the other two performed true decolourisation. Intracellular extracts presented activity for oxidoreductase and tyrosinase whereas no extracellular enzyme activities were detected.