

Decolorization of Reactive Black 5 Dye by *Candida* sp and Evaluation of cytotoxicity using Lambari (*Astyanax* sp)

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INTRODUCTION: Textile industry plays an important role in Brazilian economy, however, the waste generated, mainly containing dyes, are a major source of pollution. The azo dyes, widely used, have low biodegradability and its toxic effects have been described as mutagens. **OBJECTIVES:** Evaluate Reactive Black 5 dye decolorization process by the yeast *Candida* sp. isolated of textile effluents and analyze the changes caused by the dye on *Astyanax* sp. tissues. **MATERIALS AND METHODS:** Yeasts were cultivated in flasks containing 100mL of mineral medium with 25g/L glucose and 250ppm of the dye for 48 hours. Samples were collected every 12 hours. Toxicity assay: fishes of species *Astyanax* sp. were observed in bottles containing 1.5L of the discolored and containing 1.5L culture medium. The fishes were also placed into 1.5L containing 250 ppm of dye, the positive control, and in 1.5L of only water as negative control. For histological analysis: the animals were fixed in Bouin liquid, decalcified in nitric acid solution, dehydrated in alcohol and xylol, embedded in paraffin and stained with hematoxylin-eosin. Sections at 8 µm were performed, submitted to histochemical techniques to analyze the gills and intestines. **DISCUSSION AND RESULTS:** In 48 hours it was observed a discoloration of 99%, suggesting involvement of biological and enzymatic activity by the yeast. The cytotoxicity assay led to the death the fishes placed with the discolored and with the medium. Was observed, in the histological analysis, that the fishes treated with the dye had lamellar fusion, vasodilation in the coronary sinus of the main lamella and hyperplasia in the gill lamellae; the villus morphology of the intestinal epithelium was not maintained. **CONCLUSION:** The high efficiency of biodegradation observed is inexpensive showing a good potential for application in wastewater contaminated with azo-dyes. Further studies are needed to enhance the decolorization techniques and decrease toxicity process.

Key words: Decolorization, *Candida* sp, Reactive Black 5, *Astyanax* sp.