

### TLP-155. Screening of bacterial isolates from Brazilian oil-impacted mangrove for lipase and esterase activities

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**Introduction.** Mangroves are rich ecosystems full of biological activity and wide variety of life. They are characterized for peculiar and severe environmental conditions such as high salinity, pH variations, lack of oxygen and deficiency of micronutrients. In addition to that, the bertio-ga city mangrove was affected by an oil spill in the 80s, which deeply affected the ecosystem. Since the accident, the mangrove is under recovery and the indigenous microbiota has developed mechanisms to survive and adapt to the pollutants, providing a potential source of interesting active molecules. In this sense, the aim of this work was to screen bacterial isolates from bertio-ga mangrove sediments in the search for esterase and lipase activities.

**Materials and methods.** For esterase assays, isolates were grown on tsa medium added of 1% arabic gum and 1% tributyrin. Plates were incubated at 28°C for 24 – 48 h and results were observed through halo formation around colonies. For lipase assays, isolates were grown on tubaki medium without glucose added of 1 g/mL of rhodamine b for each 100 mL of medium. Plates were incubated as described before and lipase activity was observed through formation of a fluorescent halo visualized under uv light. Twelve isolates were selected and submitted to fluorescence-based assays using umbelliferone derivatives as probes. Assays were conducted for 72 h, being measured every 24 h.

**Results.** The best result for esterase activity was achieved for *Gordonia* sp. Strain ccma-559, which converted >99% of the substrate within 48 h. The best lipase performance was obtained for *Bacillus safensis* strain ccma-560, which converted >99% of the substrate within 24 h.

**Conclusions.** These results are promising and further steps comprise the overexpression, functional and structural characterization of these enzymes. Acknowledgments: fundação de amparo à pesquisa do estado de são paulo – fapesp. Processes: 2010/51981-3, 2011/50809-5, 2010/08352-5, 2013/16813, 2011/10378-5.