

**TITLE:** NEW STRAIN OF *SACCHAROMYCES* ISOLATED FROM BRAZILIAN HALOFIT PLANT, *SALICORNIA AMBIGUA*.

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## **ABSTRACT**

Brazil is a continental country with rich and unique biomas, with a wide range of new microorganisms. New strains of yeasts could be found with the possibility of biotechnological application, for bioethanol, pharmaceutical, and food industry, especially those from *Saccharomyces* genus. Since *Saccharomyces* is a well-known domesticated species, their isolation at their ecological niches remains poorly understood. The aim of this study was to isolate yeasts from a distinctive plant from Santa Catarina coastline. Samphire is a halophyte perennial plant, widely distributed throughout the world with the potential to find extremophile yeasts with biotechnological potential. In Brazil, it has a higher incidence in the south of the country, where it is known as *Sarcocornia ambigua* Michx. or *Salicornia ambigua* Michx. Environmental samphire samples were collected from Praia da Palhoça - SC, in October of 2019, samples were collected aseptically using sterile falcon tubes. They were filled with sterile NaCl 0.9% and plated on Rose Bengal agar selective medium, after 3 days at 30°C the white creamy colonies were selected and transferred to the YPD and their fermentation potential was tested. Three samples were selected: 862-1 (SALI 1PA), 862-2 (SALI 2A), and 862-3 (SALI ENDO). The genomic material of the isolated microorganisms was extracted, amplified, purified, and quantified before being sequenced. The taxonomic classification of the samples was compared in GenBank/MEGABLAST and they were aligned with other similar data, and a tree was built from phylogenetics with the aid of the MEGA 7 program. Our results showed that three samples were taxonomically different from each other; SALI 1PA as *Candida sp*, possible new species, SALI ENDO as *Debaryomyces hansenii*, and SALI 2A as a new *Saccharomyces* species ranging from *S. cerevisiae* and *S. paradoxus*. SALI 2A also had good fermentation attenuation and sensorial quality analysis results in tripled batch laboratory tests. Those results show the possibility to find and understand the ecological niches of endemic new wild saccharolytic yeasts and their potential the biotechnological industry.

**Keywords:** *Saccharomyces*, samphire, wild strain, fermentation

**Development Agency:** CNPq, FAPESP