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DIVERSITY OF CELLULOLYTIC RHIZOBACTERIA ISOLATED FROM RED MANGROVE (*RHIZOPHORA MANGLE*)

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Mangrove communities are recognized as highly productive ecosystems that provide large quantities of organic matter to adjacent coastal waters in the form of detritus. Mangrove leaves and wood are made mainly of lignocellulose components that are degradable by microorganisms, and bacteria are responsible for most of the carbon flux in tropical mangrove sediments. This study attempts at investigating the diversity of cellulolytic rhizobacteria isolated from rhizosphere of red mangrove (*Rhizophora mangle*). A total of 129 rhizobacteria were evaluated for their cellulolytic activity, and the identification was based on profile of cell membrane fatty acids. 31 strains produced high amount of endoglucanase (1,4-β-D-glucan) when grown in submerged culture on carboximethylcellulose as the sole carbon source. The production of cellulase was restricted to the genera *Bacillus* and *Paenibacillus*, having the following species as the main producers: *B. subtilis*, *B. pumillus*, *P. macerans* and *P. lentimorbus*. The confirmation of the endoglucanase activities was confirmed by amplification of the EglA gene encoding endoglucanase from *B. pumilus*. This characteristic is an important feature for further applications of this enzyme in biotechnological processes, at the some time that this trait plays an important role in the overall mineralization process of the litter. The bacterial diversity found in the rhizosphere of *R. mangle* was characterized by the following species: *Microbacterium barkeri*, *Rhodococcus rhodochrous*, *Sphingobacterium spiritivorum*, *Brevundimonas diminuta*, *Microbacterium chocolatum*, *Brevibacterium epidermidis*, *Ochrobactrum anthropi*, *B. subtilis*, *B. pumilus*, *P. macerans*, *P. lentimorbus* and *Curtobacterium flaccumfaciens*. All cellulolytic strains of *Bacillus* and *Paenibacillus* where able to grow in media supplied with 20% of NaCl. In high concentration of salt the strains produced significant amount of biofilms suggesting the function of this polymer as mechanism of tolerance to saline habitats.