

GLUCONACETOBACTER DIAZOTROPHICUS PAL5 WHOLE GENOME SEQUENCING PROJECT: PHYSICAL AND GENETIC MAP AS A KEY STEP IN THE GAP CLOSURE PHASE AND GENERAL GENOMIC CHARACTERISTICS.

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A macrorestriction physical and genetic map of *G.diazotrophicus* PAL5 chromosome was constructed through of PFGE methodology. Using this methodology, single and double digestions of the chromosome were performed with I-CeuI, SwaI and PaeI restriction enzymes. The resulting DNA fragments were positioned into a physical map, using combinatory analysis of hybridization results, restriction enzymes analysis and DNA fragments length. *G.diazotrophicus* has 04 ribosomal operons into a circular chromosome, with estimated length of 4,240Kb. The hybridization results allows the positioning of 42 genetic markers on chromosome, and subsequently alignment of contigs from the Riogene Project (97.6% of genome coverage), facilitating the gap closure step by combinatory PCR methodology. During the annotation process of the *G.diazotrophicus* PAL5 genome, 02 plasmids with length of 38.8 and 16.6Kb were observed. The general genome characteristics of this endophyte, such as: genome composition, GC percentage, ORFs number, gene distribution by functional categories, and microorganisms that show highest homologies in relation to ORFs sequences of this endophyte were analyzed. Additionally, some particularities related with glucose metabolism, bacteriocin and exopolissacharide production, chemotaxis and cellular motility, and biological nitrogen fixing were observed.

Support: CNPq and Faperj.