PRODUCTION AND CHARACTERIZATION OF RECOMBINANT FRUTALIN EXPRESSED IN THE YEAST *PICHIA PASTORIS.*

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Lectins constitute biotechnological tools of fundamental importance in hystochemical/cytochemical studies tissue glycoconjugates detection. Frutalin, an α-D-galactose-binding lectin from *Artocarpus incisa* seeds, has already been used in the hystochemical detection of different neoplasia. The heterologous lectin expression may provide the high scale production for the preparation of diagnostic kits, already used in the hystochemistry. The DNA sequence, coding for frutalin (obtained from the aminoacid sequence) was obtained by two different approaches: isolation of the gene from genomic DNA and/or mRNA from *A. incisa* seeds; and gene synthesis, with codon usage optimization for maximising expression in *Pichia pastoris* strains. The DNA sequence for frutalin chains were cloned separately in the *P. pastoris* expressing plasmid and used in yeast transformation. The expression of the cDNA coding from mRNA of *A. incisa* seeds was also tested, resulting in seven clones with small base differences. Studies of batch fermentation, pH and temperature for selecting the best frutalin production by the recombinant strains were also performed. The partial characterization of the recombinant frutalin were done by SDS-PAGE, Ouchterlony double-diffusion and hemagglutination assays.

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