

Assessing of Morphological, Cultural, Biochemical Profile and Enzymatic Activity of a *Lactobacillus paracasei* CCM 1837 Strain

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Abstract

The purpose of this study was to examine a lactic acid bacteria (LAB) strain known as *Lactobacillus casei* CCM 1837. The strain derived from Microorganism Collection of Cehia. It was assayed morphologically, culturally, biochemically and enzymatically (amylolytic and cellulolytic activity). For current identification was effectuated three passages in MRS agar and broth Oxoid. The strain was identified and conserved as *Lactobacillus paracasei* spp. *paracasei* IBNA 04 in the Collection of INCDBNA. It is Gram positive cocobacilli, thin, non-spore forming, rounded ends, isolated, diplo form, in short chains in culture of 24 - 48 h in Oxoid MRS broth at 37°C incubation. The strain is facultative anaerobic with a slight preference for anaerobic. The identification and analysis of the biochemical characteristics was performed by catalase assay, API 50 CHL Biomerieux strips, apiweb API 50 CHL V 5.1 soft (good identification to the genus *Lactobacillus paracasei* spp. *paracasei* 1 or 3, 48-51% ID) and ABIS online (*Lactobacillus paracasei* spp. *paracasei*, ~ 90%). The enzymatic activity was determined by Hostettler's method for amylase activity and the Petterson's and Porath's method for cellulolytic activity. The *L. paracasei* CCM 1837 was incubated at 37°C in aerobic and anaerobic atmosphere. An optimal growth was recorded in the MRS broth medium in aerobic conditions for 48-72 h. The strain had an amylase activity of 0.124 (UDNS/ml) to 24 h, compared with 0.158 (UDNS/ml) to 48 h, at 37°C. It record a cellulolytic activity 0.09 (UDNS/ml) at 24 h, compared with 0.04 (UDNS/ml) registered at 48 h, at 37°C. In conclusion, the results suggest that *L. paracasei* CCM 1837 strain had some probiotic characteristics and will be assessed to demonstrate its capacity to influence positively the gut animal ecosystem (must to survive the passage through the gastric juice in the stomach, to resist the bile acids and salts from pancreas etc.).

Key words: *Lactobacillus paracasei* CCM 1837, API 50 CHL, enzymatic activity, pigs intestinal microbiota.