

378/169. SURVIVAL OF LACTOBACILLUS RHAMNOSUS EM1107 IN FERMENTED GOAT MILK WITH INULIN UNDER IN VITRO SIMULATED GASTROINTESTINAL CONDITIONS

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Introduction

The demand for functional foods has been increasing over the years. Functional foods that contain probiotic bacteria are capable of exerting important beneficial effects to human health and the survival capacity of these microorganisms to the gastrointestinal tract (GIT) is among the main conditions to ensure their benefits.

Objective

This study evaluated the survival to in vitro simulated GIT conditions of the indigenous culture and probiotic candidate *Lactobacillus rhamnosus* EM1107, from the lactic acid bacteria collection of the Brazilian Agricultural Research Corporation (EMBRAPA), added as adjuvant in fermented goat milk.

Methodology

Goat milk was also added of the starter *Streptococcus thermophilus* (QGE, 0.002 g/100 mL) and inulin (5 g/100 mL). After fermentation (6 h, 42 °C), the product was submitted to the in vitro conditions of the gastric phase for 2 h (3 g/L pepsin, 0.9 mg/L lipase, pH 2.5-2.9), enteric phase I for 2 h (9.88 g/L bile, 0.985 g/L pancreatin, pH 5.6), and enteric phase II for 2 h (9.90 g/L bile, 0.988 g/L pancreatin, pH 6.7), totalizing 6 h of assay. The assay was performed under agitation (150 rpm), at 37 °C. Samples were collected after 0 h, 30 min, 2h, 4h and 6h of assay and viability of *L. rhamnosus* was verified after growth in MRS pH 5.4 agar for 72 h, at 37 °C.

Main findings

Lactobacilli populations (log cfu/mL) during the assay were 7.79 ± 0.65 (0 h), 6.12 ± 0.65 (30 min), 6.23 ± 0.13 (2 h), 6.38 ± 0.11 (4 h), and 6.15 ± 0.10 (6 h), and the survival did not differ significantly in the Friedman's test between the sampling periods ($p > 0.05$).

Conclusion

Under the in vitro conditions of this study, possibly the culture *L. rhamnosus* EM1107 would be able to exert beneficial effects, since it achieved levels higher than 6 log cfu/mL.

Key words

Goat dairy products, indigenous lactobacilli, probiotic candidate.