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PROBIOTIC PROPERTIES OF LACTIC ACID BACTERIA ISOLATED FROM "TCHOUKOU" TRADITIONAL MILK CHEESES PRODUCED IN SELECTED REGION OF NIGER.

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Abstract

Purpose: The current study's aim is to evaluate the probiotic potential of lactic acid bacteria strains isolated from traditional "Tchoukou" milk cheeses produced in a selected region of Niger.

Methodology: Nine Samples were collected in selected regions of Niger (Tahoua, Maradi, and Zinder).Probiotic properties of isolated LAB were identified based on their acid tolerance, bile salt tolerance, auto-aggregation ability, simulated stomach and duodenum passage, simulated gastric juice survivability and their antimicrobial activities.

Findings: A total of eighteen strains were analysed *in vitro* for acid tolerance, bile tolerance, survival under simulated gastro-intestinal tract conditions and antimicrobial activity against index organisms. The results indicated that all seventeen strains exhibited a high viability after twenty-four hours of incubation at pH 2.5 and pH 3, but a decreased viability at pH 2.0 in which only eight strains were able to survive, strain C13 failed to grow at the three different pH. In this study, the isolates generally survived better after exposure to 0.3% bile salt. Also were able to survive exposure to simulated stomach and duodenum passage (SSDP) for three hours ranging from (89%-100%).All strains were able to survive under simulated gastric juice at different pH (2, 2.5 and 3). for auto-aggregation Only fifteen isolates showed the best auto-aggregation abilities ranging from (15-83%) and the other two had less auto-aggregation ability (2-11%). The isolates showed diverse antimicrobial activity against the index organisms. Among the isolates, only three (C1, C2 and C9) could not inhibit any of the selected pathogens.

Unique contribution to theory, practice and policy: This study was conducted to characterize the probiotic properties of LAB isolate which could serve as a potential source for industries and commercial applications.

Keywords: *Tchoukou, Probiotics, Lactic acid bacteria, Antimicrobial*