



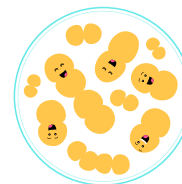
Food and Agriculture Organization (FAO) and World Health Organization (WHO) define probiotics as live microorganisms which when administered in adequate amounts confer a health benefit on the host.

Among the classes of microorganisms considered as probiotics, lactic acid bacteria (LAB) have already been traditionally used in the food industry. Other LAB strains are still being discovered from natural sources including goat milk, which can be evaluated for their probiotic potential.

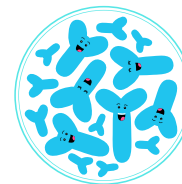
Probiotics Bacteria Family



Lactobacillus



Lactococcus

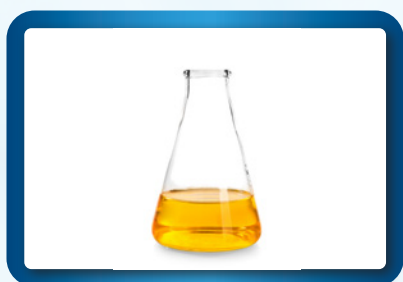


Bifidobacterium

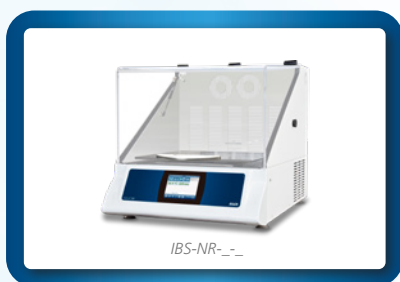


In vitro tests can be performed on LAB strains before they are used as probiotics. These include determination of antimicrobial activity, anticancer activity, toxin-reducing effects, and boosting immune response. Due to their activity being induced when ingested, the strains are also tested if they can withstand the gut environmental conditions.

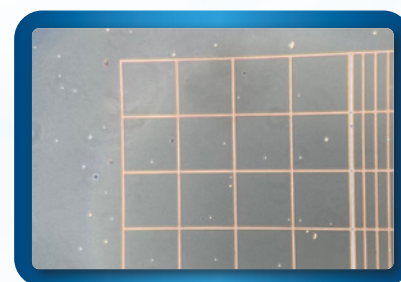
VIABILITY TEST IN SIMULATED GASTROINTESTINAL CONDITIONS



Resuspend the overnight culture of LAB strain in simulated gastric juice (e.g., an acid solution with pepsin).



Incubate at 37°C for approximately 2-3 hours, about 150-200 rpm to simulate peristaltic movement.



Assess cell viability to determine acid resistance of the LAB strain.

Simulate *in vivo* with OrbiCult™ Incubator Benchtop Shaker from Esco!

References:

[1] da Silva, L.A., Lopes Neto, J.H.P. & Cardarelli, H.R. Safety and probiotic functionality of isolated goat milk lactic acid bacteria. *Ann Microbiol* 69, 1497–1505 (2019). <https://doi.org/10.1007/s13213-019-01533-z>
[2] Somashekaraiah R, Shruthi B, Deepthi BV, Sreenivasa MY. Probiotic Properties of Lactic Acid Bacteria Isolated From Neera: Naturally Fermenting Coconut Palm Nectar. *Front. Microbiol.* 2019; 10:1382. doi: 10.3389/fmicb.2019.01382.

