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Influence of temperature and pH on the growth of *Lactobacillus reuteri* ATCC 23272 using optical density assay

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Background & Aim: *Lactobacillus reuteri*, which is a normal flora in intestine and the female genital tract, can be used as probiotic bacteria to give health benefits. The aim of this study is to evaluate the effect of two physiological factors (temperature and pH) on the growth of *Lactobacillus reuteri* ATCC 23272.

Method: In this study, *Lactobacillus reuteri* ATCC 23272 was cultivated in MRS broth and adjusted to four different initial pH values and incubated at four different temperatures degrees. For all of the resulted 16 subgroups (each subgroup consists of 10 broth samples), initial optical density was adjusted to (1.4) at 540 nm. After incubation, the final optical density and pH were measured and the data were collected and analyzed statistically.

Results: The incubation temperature and the initial pH of the culture medium had a significant effect on the growth rate of *Lactobacillus reuteri* ATCC 23272. The optimal conditions for the growth were (Temp. 30°C, pH 6.5) with an optical density around (1.9297) at 540 nm, while the lowest growth rate was at (Temp. 25°C, pH 3.5) with an optical density around (0.0002) at 540 nm.

Conclusion: The physiological environment has a great influence on the growth rate of *Lactobacillus reuteri* ATCC 23272.

Biography

KhalidA. Habeb currently working as Professor in microbiology Department of Biology / College of Science for Women / University of Baghdad, Iraq.

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