

Main research areas of the laboratory of microbiology, bioenergetics and biotechnology are:

- The investigation of the growth parameters of microorganisms, the activity of biological membranes and molecular H₂ production
- The determination of microbial diversity of Armenian hot springs and dairy products
- The development of new pathways of microbial and plant cultures application in biotechnology and receipt of the cultures of endemic, threatened and rare plant species
- The combined effects of different metals on growth properties and membrane activity of *Enterococcus hirae* and *Escherichia coli*
- The effect of different range extremely high frequencies electromagnetic irradiation on survival, growth properties of *Enterococcus hirae*, *Escherichia coli* and *Rhodobacter sphaeroides*
- The effects of various reducers and oxidizers on mixed-acid fermentation in *Escherichia coli* and on biohydrogen production activity during photofermentation in *Rhodobacter sphaeroides* isolated from Armenian mineral springs
- The investigation of microbial diversity (thermophiles, halophiles and metalophiles) from Armenian hot springs and evaluation of their potential for application in biotechnology
- The effect of heavy metal ions on antibacterial activity of *Lactobacillus rhamnosus* R-2002 and on proteolytic activity of *Lactobacillus acidophilus* MR-1980
- The investigation of primary and secondary metabolites of natural plants and their cultures
- The investigation of beehives in different regions of Armenia for the determination of dangerous microbial and yeast infections in bees