

METABOLIC DIVERSITY OF EXTREMOPHILES

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During of round table we will focus on the metabolic diversity of prokaryotic microbes. The main sources of energy, electron donors and discuss two important biosyntheses: autotrophy, the fixation of carbon dioxide (CO₂) into cell material, and nitrogen fixation, the reduction of atmospheric nitrogen (N₂) to ammonia (NH₃) to supply the cell's nitrogen requirements of bacteria and archaea will be discussed. We will explore how cells conserve and use their energy and nutrients. Round table discussion will include following tasks:

- Catabolic diversity. Electron donors and electron acceptors in oxidation-reduction processes occurred in prokaryotic cells.
- Fermentation. Diversity of fermentative organisms
- Respiration. Differences between fermentation and anaerobic respiration. Diversity of electron acceptors used in anaerobic respiration
- Organisms able to use inorganic chemicals as electron donors: chemolithotrophy.
- Oxygenic and anoxygenic photosynthesis. Bacteriorhodopsin dependent phototrophy
- Nitrogen fixation and nitrogenase. Symbiotic and free-living nitrogen fixators
- Metabolic matrices of Lvov based on of energy and C sources and electron donors
- Metabolic features of thermophilic and halophilic bacteria and archaea

Interactive discussion on mentioned tasks will be made. The tests and questions, will be provided to help students better understand those topics.