



Instituto de Tecnologia Química e Biológica
Universidade Nova de Lisboa

LAB INTERNSHIP 07/08

STUDY OF NEW METABOLIC PATHWAYS INVOLVED IN SULFATE RESPIRATION

Area: Microbiology/Biochemistry

Laboratory: Microbial Biochemistry

Supervisor: Dr.^a Inês Cardoso Pereira

Work in the Microbial Biochemistry Laboratory is focused on the study of anaerobic microorganisms that live in environments where oxygen levels are very low. These microorganisms use mechanisms of cellular respiration very different from aerobic organisms. In particular, we study bacteria that respire sulphur compounds (like sulfate and sulfite), and which are widespread in the anaerobic zones of a multitude of environments like soil, sediments, marine and fresh waters as well as the mouth and gut of many animals, including man. These bacteria are implicated in a range of environmental and health issues, and are important research targets in the areas of Bioremediation as well as Bio-Hydrogen production. They also play a very important part in the biological sulfur and carbon cycles. In our laboratory we study the molecular basis of the processes that enable these organisms to respire sulfate instead of oxygen. By studying their respiratory metabolism and the proteins involved, we aim to contribute to an informed exploitation of their biotechnological applications as well as to a better control of their biological activity with its potential adverse health effects.

The objective of this Lab internship is the study of a new metabolic pathway related to sulfate reduction, which previous studies indicated to be important in this process. The work will consist in the identification, isolation, and characterisation of one of the proteins implicated and study of its role for the overall energetic metabolism. This work will develop expertises in several areas such as: Microbiology, Microbial Physiology, Biochemistry, Enzymology, Protein Purification and others.

For more information contact:

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