

ENVIRONMENTAL MICROBIOLOGY LABORATORY

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- **Research activities**

The Environmental Microbiology Research Unit deals with issues linked to the assessment of microbiological quality of the environment (drinking / seawater, waste, food) and the study of environmental microorganisms (bacteria, parasites, bacteriophages, enteric viruses):

- Application of a variety of techniques (cultivating and molecular) to isolate and study microorganisms.
- Use of indicators to assess the microbiological quality of the environment.
- Study of the resistance of the microorganisms in the aquatic environment (study of genes in a variety of antibiotic resistance, resistance transferred between populations of microorganisms).
- Study of the behavior of microorganisms under different disinfection methods.

- **Lab Infrastructure**

- Real time PCR Laboratory equipment.
- Filtering device of liquid samples accompanied by a vacuum pump.
- Microplate reader (multiple samples).
- Spectrophotometer
- Fluorimeter (for calculation of chlorophyll a & pheophytin).
- Elution sample filter device of aquatic samples for analysis of parasites.
- DGGE Equipment
- Digital photography equipment & editing software of electrophoresis gels.
- Refrigerated centrifuge, Precision Balances (2), together with a microscope digital camera, stereoscopes (2), and oven dry sterile incubators (2), autoclave.
- Device for measuring colonies of microorganisms plates.
- Orbital shaker
- Portable instruments for measuring pH, O₂, conductivity, temperature (measured in water and soil).
- Refrigerator and freezer (-80 ° C).

- **Research projects**

- FP7-Collaborative Research program, "WATER4CROPS: Integrating bio-treated wastewater reuse and valorization with enhanced water use efficiency to support the Green Economy in Europe and India". Scientific co-ordinator: Prof. Nicolas Kalogerakis.
- LIFE10 ENV/GR/601 program "CHARM: Chromium in Asopos groundwater system: remediation technologies and measures". Scientific co-ordinator: Prof. Nicolas Kalogerakis.
- «Synthesis of TiO₂-graphene composite photocatalysts for the aqueous phase degradation of organic pollutants (PhotoGraph), E.I. ΑΕΙΦΟΡΙΑ (co funded by the Republic of Cyprus & EU). Duration: 2012 - 2014. Scientific co-ordinator: Assistant Prof. N. Xekoukoulotakis
- «Unravelling and exploiting Mediterranean Sea microbial diversity and ecology for Xenobiotics' and pollutantS' clean up: ULIXES» FP7-KBBE-2010-4. Scientific co-ordinator: Prof. N. Kalogerakis