

# Innovative approaches to inactivate antibiotic-resistant bacteria

June 22-26, 2015



The emergence of microbial resistance to many of the major classes of antimicrobial drugs is becoming an increasing problem in the clinical and environmental areas. As such, the discovery of drugs with novel modes of action will be vital to meet the threats created by the multidrug resistant microorganisms. Antimicrobial photodynamic therapy (aPDT) is receiving considerable attention for its potentialities as a new form of antimicrobial treatment. It is a non-antibiotic approach that combines a nontoxic photosensitizer, with visible light to generate singlet oxygen and free radicals that oxidize microbial vital constituents resulting in lethal damage. Phage therapy is also an innovative eco-friendly approach control pathogenic bacteria, applying phages to infect and kill unwanted bacteria.

In this course an overview of the advances performed in these two areas on the inactivation of microorganisms in the clinical and environmental areas will be presented. aPDT and phage therapy assays to inactivate bacteria will be also performed.

## Lecturers

António Correia, U. Aveiro, Portugal  
Isabel Henriques, U. Aveiro, Portugal  
Amparo Faustino, U. Aveiro, Portugal  
Graça Neves, U. Aveiro, Portugal  
João Tomé, U. Aveiro, Portugal  
Ângela Cunha, U. Aveiro, Portugal  
Adelaide Almeida, U. Aveiro, Portugal

**Deadline for registration: 31<sup>st</sup> May**

Registrations should be addressed to:  
Adelaide Almeida – [aalmeida@ua.pt](mailto:aalmeida@ua.pt)



# Programme

## Monday | 22nd June

**9h30-10h30**

**Dr. António Correia/Dr. Isabel Henriques**

Antibiotics and antibiotic resistance

**10h30-11h30**

**Dr. Amparo Faustino**

Synthetic strategies for functionalization of porphyrin derivatives aiming photosensitizing agents in photodynamic therapy

**11h30-12h30**

**Dr. Graça Neves**

New photoactive antibiotic materials for environmental applications

**14h00-15h00**

**Dr. João Tomé**

New “photo-antibiotics” for clinical applications

**15h00-17h00**

**Dr. Adelaide Almeida**

Antimicrobial photodynamic therapy as a new form of antimicrobial treatment

**17h00-18h00**

**Dr. Ângela Cunha**

Photodynamic inactivation of biofilm-associated microorganism

## Friday | 26th June

**9h00-12h30**

Discussion of the results

## Tuesday | 23rd June

**9h00-16h00**

**Dr. Adelaide Almeida**

Photodynamic inactivation assay

**16h00-17h30**

**Dr. Adelaide Almeida**

Phage therapy as an alternative technology to inactivate pathogenic bacteria

## Wednesday | 24th June

**9h00-18h00**

**Dr. Adelaide Almeida**

Phage therapy assay

## Thursday | 25th June

**9h00-12h30**

**Dr. Adelaide Almeida**

Colony counts of photodynamic therapy assay

Analysis of results of photodynamic therapy assay

**14h00-18h00**

**Dr. Adelaide Almeida**

Colony counts and analysis of results of phage therapy assay

Analysis of results of phage therapy assay

