

## **Title**

### **Bacteriophages as a diagnosis tool for early Alzheimer's Disease**

Alzheimer's disease is an irreversible, progressive and age-dependent neurodegenerative disorder affecting millions of people worldwide. Amyloid-beta (AB) is a prime suspect to cause Alzheimer's disease (AD). An accumulation of AB in the brain leads to its aggregation into soluble oligomeric and fibrillar clusters. In AD-mouse models, these AB oligomers and fibrils impair synaptic function and memory formation. A diagnostic tool to detect AB oligomers/fibrils selectively in the brain is currently not available.

Specific amyloidogenic motifs were described to react with AB fibrils and oligomers however, the blood-brain-barrier (BBB) is a major bottleneck for effective brain applications. To overcome this limitation, bacteriophages (phages) and phage display technology represent an interesting tool as delivery vehicles able to shuttle its cargo across the BBB.

In this seminar an overview of a project, aiming at developing a cost-effective and safe phage-based tool to selectively diagnose AB oligomers and fibrils during the early stage of AD, as well as some promising results, will be presented.

## **Biosketch**

Dr. Ivone M. Martins is a Faculty Researcher at the Centre of Biological Engineering – University of Minho. She graduated in Biotechnological Engineering and obtained the Ph.D. in Molecular Microbiology and Genetics at the University of Salamanca. Her main research area is Health Biotechnology and Bioengineering, in particular the use of Bacteriophages and Phage Display Technology. Her research work is focused on the discovery of novel disease-related biomarkers and the development of bacteriophages-based tools for diagnosis and therapeutics.

## **Link**

<https://www.ceb.uminho.pt/People/Details/e52eed9c-d52e-4521-b802-33ad1c8ac7d2>