

# NanoLC-MS/MS sequencing and in silico analysis of bioactive peptides from Lusitanian Toadfish *Halobatrachus didactylus* body mucus

Marta Fernandez Cunha<sup>1</sup>, Ezequiel R. Coscueta<sup>1</sup>, María Emilia Bassesco<sup>1</sup>, Frederico Almada<sup>2</sup>, David Gonçalves<sup>3</sup> and Manuela Pintado<sup>1</sup>

<sup>1</sup> Universidade Católica Portuguesa, CBQF - Centro de Biotecnologia e Química Fina – Laboratório Associado, Escola Superior de Biotecnologia, Rua Diogo Botelho 1327, 4169-005, Porto, Portugal.

<sup>2</sup> MARE—Marine and Environmental Sciences Centre, ISPA Instituto Universitário de Ciências Psicológicas, Sociais e da Vida, Lisbon, Portugal.

<sup>3</sup> Institute of Science and Environment, University of Saint Joseph, Rua de Londres 106, Macau S.A.R., China.

## Abstract

The mucus covering a fish's body works as a protective barrier and contains molecules, such as antimicrobial peptides, that defend against pathogens. In this study, two adult *Halobatrachus didactylus* were captured from the wild in Sesimbra, and mucus was collected by scraping the dorsal-lateral body with a sponge. Our objective was to identify new bioactive peptides in mucus samples via chromatography. SE-HPLC revealed a prominent peak at 775 Dalton. The mucus samples were pooled, fractionated, and analyzed by nanoLC-MS/MS. Database identification was unreliable, so de novo sequencing with PEAKS Studio was used, resulting in five peptides selected for their predicted bioactivities.