**Characterisation of transthyretin-like proteins of the plant-parasitic nematode *Pratylenchus penetrans* suggests involvement in oxidative stress response.**

Margarida Espada1, Cláudia Vicente1, Jordana Branco1, Manuel Mota2, Paulo Vieira1,3

1 NemaLab, ICAAM - Instituto de Ciências Agrárias e Ambientais Mediterrânicas, Instituto de Investigação e Formação Avançada, Universidade de Évora, Pólo da Mitra, Ap. 94, 7006-554 Évora, Portugal.

2 NemaLab, Departamento de Biologia, ICAAM - Instituto de Ciências Agrárias e Ambientais Mediterrânicas, Escola de Ciências e Tecnologia, Universidade de Évora, Pólo da Mitra, Ap. 94, 7006-554 Évora, Portugal.

3 School of Plant and Environmental Sciences, Virginia Tech, Blacksburg, United States of America

Transthyretin-like proteins (TTL) belong to a widely conserved family present only in the Phylum Nematoda. Although several TTLs (protein domain PF01060) have been identified for both animal and plant-parasitic nematodes most of their function(s) remains unclear. In *Pratylenchus penetrans*, a migratory plant-parasitic nematode, transcriptomic data revealed that some members of this family are abundantly expressed during plant infection. *In silico* analysis identified twenty-four predicted TTLs members for this species, all of them containing a predicted signal peptide. *In situ* hybridisation assays demonstrate that some of these members are specifically localised in the nematode esophageal gland cells (parasitism specialised cells), suggesting their potential involvement during parasitism. Oxidative stress assays demonstrate that some of these TTLs have a strong upregulation when nematodes are exposed to an external oxidative agent (hydrogen peroxide) stimulus compared to a secreted nematode catalase – an enzyme that directly degrades hydrogen peroxide. The results suggest that some of these TTLs might have a potential role during ROS scavenging activity. Other functional analyses are underway to provide more insights into the functional role of these TTLs during plant parasitism of *P. penetrans.*