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# *Caenorhabditis elegans* thermo-nociception and plasticity as a model for human pain mechanisms

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Chronic pain conditions represent a major unresolved burden for humanity. Understanding the molecular pathways implicated in nociception and its plasticity could provide new therapeutic tracks, but requires studies conducted in animal models.

To tackle this difficult task, we conducted two projects: (i) a human-pain gene ortholog screen to identify suitable candidates for the use of *C. elegans* as a model in the understanding of conserved pain mechanisms and (ii) an hypothesis-driven study on a gene implicated in *C. elegans* thermal nociception plasticity, *kin-2*, which encodes the regulatory subunit of the Protein Kinase A (PKA). For both projects, we used the same method to assess thermal nociception: a platform for noxious heat-evoked behaviour quantification, which was designed and built by a former lab member, Dr. Andrei-Stefan Lia.

Overall, this work (i) sets the bases for using *C. elegans* as an animal model for the study of conserved pain mechanisms, providing us with a set of interesting target genes for that purpose, and (ii) provide an overview of PKA regulatory subunit isoform expression patterns as well their role in themonociceptive plasticity in *C. elegans*.

Jury:

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