

17 de MARZO de 2021

12.00 h

• INMA

*Impulso*

## Biological interactions of nanomaterials with model systems



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One of the fields that can greatly benefit from the use of nanomaterials is nanomedicine, by improving diagnosis, treatment or both. Although many nanomaterials are exquisitely designed and possess potent properties, most are far from entering in patient clinical trials and many will never do it. Understanding the interaction of nanomaterials with biological systems is essential to diminish the huge discrepancy between the produced nanotherapeutics and scarce clinical outcomes.

In this seminar I would talk about biological interactions between nanomaterials and different model systems, including cells, mice and an invertebrate animal (*Hydra vulgaris*). Small animal organisms are valuable resources to perform both fundamental and translational research in nanotechnology, representing a precious tool for predicting the efficacy and toxicity of new nanomedicines. The use of *Hydra vulgaris* is advantageous for its simplicity and the absence of ethical issues, which allows high-throughput experimentation at low cost providing worthy data before reaching vertebrate animals.

We have used *Hydra* to study the biodistribution of quantum dots by X-ray microspectroscopy, to prove the biogenesis of conductive protein microfibers with electrical conductivity or to predict overall responses to nanoparticle-mediated hyperthermia among others. We will discuss some of these examples, showing different areas where the use of this animal could be highly valuable.

**Link:**

**Zoom**  
(use the following  
code)

