Can my nanomedicine be useful for other things?

<u>Cong Vu¹</u>*, J.Justin Gooding²*, and Melanie Kah³* ¹NanoSoils Bio Pty Ltd, Sydney, NSW, Australia. ²School of Chemistry, University of New South Wales, Sydney, NSW, Australia. ³School of Environment, The University of Auckland, Auckland, New Zealand. e-mail: <u>cong@nanosoils.com</u>, justin.gooding@unsw.edu.au; melanie.kah@auckland.ac.nz

Sharing concepts and knowledge between medical and agricultural fields can promote the development of improved nano-enabled technologies. A central idea behind drug delivery systems is that the active substances are encapsulated in nanoparticles (nano-medicines) to protect the drugs from premature degradation and allow them to be transported to the target site within the body. After three decades of development, nano-medicines are now used in many practical applications, including clinical oncology, infectious disease, cosmetics, and vaccines. Nano-agrochemicals are increasingly considered to tackle challenges associated with food production, sustainability and food security. Despite obvious differences between nanomedicines and nanoagrochemicals in terms of uptake mechanisms, target and environmental and economic constraints, the principles behind nanoparticle design share many similarities. This talk hopes to share experiences and lessons learnt from nano-medicines that will help design more effective and safer nano-agrochemicals, and bring the products closer to the market.

Reference:

Vu Thanh, C.; Gooding, J. J.; Kah, M., Learning lessons from nano-medicine to improve the design and performances of nano-agrochemicals. *Nat Commun* **2025**, *16* (1), 2306