

Date

Deadline

CONTACT

Organisation	National Research Council	Department	Nanoscale Measurement Team
Contact person	David Kennedy	Email	David.Kennedy@nrc.ca
City	Ottawa	Website	Nanometrology - National Research Council Canada
Country	Canada		

Organisation type

Research organisation type	☒ Research Organisation	Is your company a Small and Medium Sized Enterprise (SME*)?	☐ YES ☐ NO
	☐ University		
	☐ Company		
	☐ Other		
		Number of employees:	

Your enterprise is an SME if:

- it is engaged in **economic activity**
- it has **less than 250 employees**
- it has either an **annual turnover not exceeding €50M**, or an **balance sheet total not exceeding €43M**
- it is **autonomous**

For the definition of SMEs, look at: http://ec.europa.eu/growth/smes/business-friendly-environment/sme-definition_en

Short introduction of key areas of institute's research:

The Nanoscale Measurement Team at the National Research Council Canada (NRC) develops advanced metrology standards, certified reference materials, and analytical solutions to resolve complex measurement bottlenecks where nanomaterials interact with biological systems. Backed by Canada's national premier research infrastructure, our team specializes in the precision synthesis, surface modification, and chemical/physical characterization of nanoparticles. We track nanomaterial transformation, stability, and biometrology across complex biological matrices, quantifying cellular uptake, cargo release dynamics, and systemic nanotoxicology in both human cellular models and living systems.

Former participation in an FP European project?

☐ YES ☒ NO

Project title / Acronym:

Activities performed:

Expertise / Commitment offered

Description of your expertise:

As Canada's national metrology institute, we bring unique, high-tier capability to consortiums targeting advanced therapeutics:

- **Advanced Delivery System Characterization (DISEASE-06):**
Extensive expertise in characterizing lipid nanoparticles (LNPs),

polymeric micelles, and inorganic carriers designed for targeted antiviral drug and RNA delivery. We provide high-resolution profiling of particle size distribution, surface charge, morphology, encapsulation efficiency, and cargo release kinetics under biomimetic conditions.

- **Bio-Metrology & Cellular Interactions (DISEASE-06 & DISEASE-08):** Proven capacity to track nanoparticle-cell interactions and intracellular pathways. Using advanced imaging and chemical analysis, we monitor cellular internalization, endosomal escape, and the metabolic fate of nanoparticle-delivered agents inside human tissues and complex biological matrices.
- **Standardization, Safety, and Nanotoxicology (DISEASE-08):** World-class expertise in evaluating the toxicological profiles and unintended biological impacts of nanostructures. We specialize in designing robust assay frameworks to screen for immunogenicity, cytotoxicity, and barrier permeability (e.g., blood-brain or epithelial barriers), ensuring candidates are safe-by-design prior to clinical evaluation.
- **Metrology Infrastructure:** Direct access to state-of-the-art analytical platforms including Cryo-TEM, ICP-MS (single-particle mode), Dynamic Light Scattering (DLS), field-flow fractionation (FFF), and high-content cell imaging systems.

Keywords specifying your expertise:

Nanometrology, Nanoparticles, characterization, standardization, nanotoxicology, synthesis, 3D printing, microscopy, imaging, AMR, LNPs, single particle IPCMS, Assay Standardization, reference materials

Commitment offered:

☒ Research ☐ Demonstration ☐ Training
☐ Technology ☐ Dissemination ☐ Other:

Interested in participation in project types:

☒ Research & Innovation Action	☐ Innovation Action	☐ EIC Pathfinder
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Work Programme research areas: indicate your interest

Cluster 1: Health

Call topic(s): **HORIZON-HLTH-2027-01-DISEASE-08**
HORIZON-HLTH-2027-01-DISEASE-06

Do you have other partners for this topic (which partners/country)?

Profile of partner sought

Role

☐ technology development	☒ research	☐ training
☐ dissemination	☐ demonstration	☐ other _____

Country /region

☐

Expertise required

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I agree with the publication of my contact data: ☒ YES ☐ NO