EU-US Collaboration for Nanomedicine

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Nanomedicine

Nanotechnology: “Research and technology development at the atomic, molecular or macromolecular scale leading to the controlled creation and use of structures, devices and systems with a length scale of approximately 1 – 100 nanometers (nm).” (Source: National Nanotech Initiative)

Cancer Nanomedicine

- Improve solubility; act as a carrier for hydrophobic drugs
- Multifunctional capability
- Tumor targeting (reduced toxicity)
- Radiotherapy enhancers, thermal ablation of tumors, diagnostics…

The NCL was established in 2004 as an interagency collaboration among NCI, NIST, and FDA. The lab’s mission is to accelerate the translation of promising cancer nanomedicines.

NCL supports the translation of nanomed R&D.
Source and Types of Samples

- NCL testing is tailored to the platform properties, API, route of administration, and intended therapeutic outcome of the individual nanomedicine.

- NCL testing links physicochemical properties to biological outcomes.

- NCL has characterized over 300 different nanomaterials and a wide range of platforms. Ten collaborators with products in clinical trials.

- NCL has an average of 15 active collaborations at any given time and characterizes an average of 75 samples each year.

Ten years of providing NCL Assay Cascade testing has given NCL unique expertise.
EU-US Cooperation for EU NCL

- In 2013, European industry consortia and nanomed R&D community recommended EC fund “NCL like” resources in the EU

- Horizon 2020 published a call for proposals to establish the “EU-NCL” as a research infrastructure, providing transnational access throughout the EU. The call required a distributed infrastructure involving at least three separate EU member states.
EU-US Cooperation for EU-NCL

- As part of a transatlantic collaboration on nanomedicine, the US-NCL is part of the consortia funded* by the EC to establish a similar resource in the EU.

- US-NCL will host guest researchers from the EU-NCL for training, cross-validate methods, provide supplemental characterization capabilities, and facilitate transatlantic interlaboratory studies.

13 EU scientists visiting NCL this week!

*Funds are received by US-NCL through the Contractor Cooperative Research and Development Agreement (cCRADA) authority.
The transatlantic collaboration’s mission:

- Expand visibility, promote global nanomedicine R&D
- Leverage US-NCL historical knowledge, 10+ years experience
- Not duplicating efforts, improve quality control, reduce risk of adverse events
- Improve regulatory coordination for nanomedicine, FDA & EMA

“EU-NCL: strengthening the industrial base - advancing regulatory science.” – Joint Research Centre PR: “European Nanomedicine Characterisation Laboratory is born”, 
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