

# caNanoLab FAQ

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## caNanoLab General

### What is caNanoLab?

The cancer Nanotechnology Laboratory portal (caNanoLab) is a web-based application designed to facilitate data sharing in the research community to expedite and validate the use of nanomaterials in biomedicine. caNanoLab provides support for the annotation of nanomaterials with characterizations resulting from physical and *in vitro* nanoparticle assays and the sharing of these characterizations and associated nanotechnology protocols in a secure fashion. Additional information on caNanoLab is available on the [caNanoLab Wiki](#).

### Who developed caNanoLab?

caNanoLab was developed as a collaboration between the [NCI Center for Biomedical Informatics and Information Technology \(CBIIT\)](#), the [NCI Nanotechnology Characterization Laboratory \(NCL\)](#), and the [NCI Cancer Centers of Nanotechnology Excellence \(CCNEs\)](#). CCNEs actively involved in the caNanoLab effort include Washington University, Stanford, Emory/Georgia Tech, and MIT.

### What is the caNanoLab operational environment?

caNanoLab was designed to operate in a standalone and federated environment. Organizations deploying caNanoLab install caNanoLab locally and connect to the caBIG grid (caGrid) for information sharing across the research community. Organizations that do not have local facilities can contact [NCI CBIIT Application Support](#) to request access to the NCI caNanoLab system for data submission and retrieval.

### Does caNanoLab leverage any existing standards for describing nanoparticles and associated characterizations?

Standards supporting nanotechnology in the biomedical domain are emerging and under continuous development.

caNanoLab leverages and extends concepts from existing standards developed by the biomedical and nanotechnology community. caNanoLab leverages biomedical and nanotechnology concepts from the [NCI's Enterprise Vocabulary Services \(EVS\)](#) and the [Nanoparticle Ontology \(NPO\)](#) developed by Washington University. The caNanoLab team works with the biomedical nanotechnology community to identify and define concepts identified during use case analysis. New concepts are maintained in the [NCI Thesaurus](#).

## Where can I find definitions for caNanoLab concepts?

Definitions to caNanoLab concepts are available in the [caNanoLab glossary](#) and through the [NCI Thesaurus](#). The caNanoLab glossary is included in the download package and made available to users through the caNanoLab portal.

## How much does caNanoLab cost?

caNanoLab is open source software developed under the NCI caBIG initiative and open source license. caNanoLab is available for download via the [caNanoLab Project Site](#).

## How do I install my own caNanoLab system?

caNanoLab is available for download via the [NCI CBIIT download site](#). All caNanoLab source code and supporting documentation is available through the download site and [caNanoLab project files site](#). An installation guide is available on the caNanoLab project files site with every release distribution. The installation guide specifies general system requirements and instructions for installing the web application, database, and grid data services.

## caNanoLab Functionality

### What functionality does caNanoLab Support?

caNanoLab allows researchers to submit and retrieve information on nanoparticles and associated information including:

- The composition of the particle including nanoparticle entities (e.g. dendrimers, carbon nanotubes, quantum dots, etc.), functionalizing entities (therapeutic, targeting, and diagnostics entities), and chemical associations (chemical associations, attachments, or encapsulations between nanoparticle entities or functionalizing entities).
- Physical characterizations performed on a nanoparticle including size, molecular weight, shape, purity, etc.
- *In vitro* characterizations performed on a nanoparticle including cytotoxicity, immunotoxicity, and general toxicity characterization results.
- Protocols for characterizations performed on nanoparticles or general nanotechnology protocols from biomedical nanotechnology studies.
- Publications from biomedical nanotechnology studies.

caNanoLab provides secure access to data and requires authentication and authorization for access to non-public data.

### How do I submit data into caNanoLab?

In order to submit data into caNanoLab, a user must have an account belonging to the data curator group. Once a user has the appropriate account, the user can login and submit samples and associated characterizations, protocols, and publications. A [training video](#) is available to assist in the data submission process.

### What types of data can I submit into caNanoLab?

caNanoLab provides support for a variety of different types of data including:

- Nanomaterials and their composition
- Nanomaterial Characterizations from physico-chemical characterizations
- Nanomaterial Characterizations from in vitro characterizations
- Nanotechnology protocols
- Nanotechnology publications

### **Who can I contact to submit data into caNanoLab?**

A data curator is available to assist in curating data from nanotechnology characterizations in biomedicine. Data curation activities on caNanoLab are currently performed by nanotechnology data scientists at Washington University and the Nanotechnology Characterization Laboratory (NCL). Data curators assist in extracting data from publications and nanotechnology experiments, annotating extracted data, and providing overall data quality control. If you are interested in depositing your data into caNanoLab, please contact Washington University ([Nathan Baker](#)).

### **What is a caNanoLab site?**

A caNanoLab site is an organization that maintains an instance of caNanoLab and participates in the sharing of data in a federated approach across the caBIG grid. caNanoLab search facilities allow users to retrieve publicly available data from diverse sites by selecting the site(s) when performing a caNanoLab search.