

BIOBANK

Miguel Quintela-Fandino (since August)
Acting Director

Manuel M. Morente (until July)
Director



OVERVIEW

The CNIO Biobank – authorised by the Health Authorities of the *Comunidad Autónoma de Madrid (CAM)* and registered in the National Registry of Biobanks with reference B.000848 – is a ‘biobank for biomedical research purposes’, as defined by the Spanish Law 14/2007 and the Royal Decree RD 1716/2011. It is therefore defined as a public, non-profit organisation that hosts several collections of human biological samples for biomedical research, specifically in cancer and related diseases. The main objective of the CNIO Biobank is to facilitate access to human samples for researchers, ensuring that both the acquisition and use of human samples complies with all the legal and ethical principles that protect donors’ rights.

In addition to this biobanking activity, a number of services have been implemented, both for sample processing and for supporting different aspects of the management of human samples for biomedical research, in order to facilitate the use of human samples for CNIO researchers. Additionally, the CNIO Biobank participates in Biospecimen Science research projects.

Therefore, the CNIO Biobank is a cross-service platform for CNIO researchers, as well as the general scientific community, and is geared towards the promotion of biomedical research in cancer and related diseases.

Technicians
Nuria Ajenjo (TS)*, Inmaculada Almenara, M. Jesús Artiga (TS)*, Lorena Ayala (since Sept.), Patricia Camacho (until Oct.)(TS)*,

Francisco de Luna (TS) *, Maria Herrero (since Nov.)

**Titulado Superior (Advanced Degree)*

RESEARCH HIGHLIGHTS

Biobanking

In 2018, the CNIO Biobank ceded tissue samples from 675 cases thereby supporting 7 research projects. The accumulated impact of this year’s activity resulted in 6 (Q1) publications acknowledging CNIO’s Biobank contributions. The mean impact factor (IF) of the 6 published articles in 2018 (*Nat Commun, EMBO Mol Med, Cell Metab, Int J Cancer, Proc Natl Acad Sci USA and Oncotarget*), for which our Unit provided support, was 10.409.

Other activities

- Sample processing of 107 frozen samples to generate slices for extraction and staining.
- Management of project-driven and diagnostic collections:
 - The Familial Cancer Unit collection: we collaborated with the Familial Cancer Unit in the acquisition of 66 new tissue cases, the histopathological diagnostic revision of 30 cases, and the histopathological evaluation of 80 cases in a research context.
 - Management of 659 human samples for 3 different collections.
 - Histopathology evaluation of 294 cases in collaboration with the Human Cancer Genetics and Clinical Research Programmes.
- Virtual catalogue including 269 images; 139 of them are histological H&E stainings. Work on expanding this catalogue to include whole section paraffin-embedded samples is ongoing.
- CNIO projects were supported for ethical evaluation by the *Instituto de Salud Carlos III (ISCIII)* Research Ethics Committee.

The CNIO Biobank coordinates the extended Spanish Biobank Platform Project funded by the *ISCIII*. CNIO’s Biobank managed 20 projects and 37 requests from basic and clinical researchers, as well as from the industry. It also implemented mobility grants for biobank personnel (10 pers.) and organised 5 specialised Scientific Meetings plus the Spanish Biobank Congress in Oviedo.



Figure Virtual catalogue of human samples.

The CNIO Biobank participates in 3 multicentre research projects:

- Optimark project (PI16/00946) (led by the CNIO Biobank): focused on the identification of quality markers for tissue samples sensitive to pre-analytical variables.
- Exospore project: aimed at defining the optimal procedures for collecting human samples for micro-vesicle studies.
- Histological images banking: a repository for digital images.

Teaching activities

During 2018, we actively participated in 3 school visits and hosted the stays of several internship students: 2 FCT students (Laboratory Training Programme for Technicians), 4 high school students (CNIO & The City Outreach Programme), 2 students from the “4ºESO+Empresa” Programme (*Comunidad de Madrid*), and 1 *Erasmus* predoctoral student (*Erasmus* Internship Programme). The CNIO Biobank also co-organises a Master’s degree in Biobanking at the *Universidad Católica de Valencia*. ■

PUBLICATION

- Zagorac I, Fernandez-Gaitero S, Penning R, Post H, Bueno MJ, Mouron S, Manso L, Morente MM, Alonso S, Serra V, Muñoz J, Gómez-López G, Lopez-Acosta JF, Jimenez-Renard V, Gris-Oliver A, Al-Shahrour F,

Piñeiro-Yañez E, Montoya-Suarez JL, Apala JV, Moreno-Torres A, Colomer R, Dopazo A, Heck AJR, Altelaar M, Quintela-Fandino M (2018). *In vivo* phosphoproteomics reveals kinase activity profiles that predict treatment outcome in triple-negative breast cancer. *Nat Commun* 9, 3501-3515.