

# Biorepository



Head **Bob Geraghty**

Senior Scientific Officer

Maria Vias\*

## The Biorepository covers all aspects of tissue storage and management.

We provide a core service which allows simple access to storage, tracking and risk management of tissue samples, cell lines and any other biological samples, including human tissue samples, in accordance with current legislation. We also provide up-to-date expertise, training and trouble-shooting in all aspects of cell and tissue culture, to maintain a consistently high standard throughout the Institute. The Biorepository is used extensively by most research groups at the CRI.

### The Human Tissue Act

Biorepository staff advise on, monitor and control the import, use, storage and disposal of human tissue samples for research, to ensure full compliance with the Human Tissue Act and the Human Tissue Authority (HTA) Codes of Practice, a statutory requirement for all research involving human tissue samples. We advise on how to request human tissue samples from the Addenbrooke's Hospital Tissue Bank and how to obtain Local Research Ethics Committee approval for new research projects involving the use of human tissues.

### Cell culture

The Biorepository provides a comprehensive mycoplasma testing service, a batch testing service for serum and other cell culture media components and quality controlled bulk culture of research cell lines. We are currently introducing a human cell line authentication service using multiplex PCR and short tandem repeat (STR) profiling to simultaneously amplify eight or more of the most informative polymorphic markers in the human genome. The pattern of repeats results in a unique STR profile for each cell line analysed. It is becoming increasingly important to authenticate cell lines at regular intervals throughout a project to confirm integrity of data and as a requirement for publication. Biorepository staff also keep fully up-to-date with the latest cell and tissue culture based techniques and equipment.

### Future developments

The Biorepository is still developing in order to provide an ever improving service to a growing Institute (Figure 1). We have identified a number of new services and initiatives that will further facilitate and enhance research at the CRI when implemented. These include:

- Completing the implementation of a laboratory information management system (LIMS) database for booking in human tissue samples that greatly improves and simplifies sample tracking.
- Developing and maintaining a panel of high quality, authenticated, control mammalian cell lines, to be used by the CRI core services to validate new or existing methodologies.
- Offering a monoclonal antibody production service including growing up existing hybridomas, purifying expressed monoclonal antibodies and a mouse hybridoma production facility to develop new specific monoclonal antibodies as required.
- Introducing and optimising gene expression in insect cells using baculovirus vectors, a model that permits folding, post-translational processing and modification of expressed proteins using pathways identical to those in mammalian cells, thus making it a potentially powerful tool in cancer research.

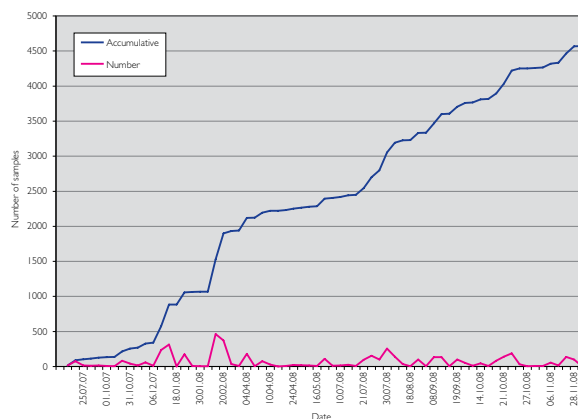


Figure 1. Human tissue samples received by the CRI Biorepository July 2007 to December 2008

\*Joined during 2008