Scientific -Technical Service of Immunohistochemistry and Histology

RULES AND INSTRUCTIONS

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Scientific-Technical Service for Immunohistochemistry and Histology

Rules and Instructions

1. Presentation

We offer support to research groups, both from the IRBLLEIDA and external ones, and to private centers or companies, so that they can achieve their scientific objectives with optimal quality. The service also offers support in the preparation of clinical studies by carrying out pathological analyses.

In our portfolio of services you can see the wide range of antibodies that we have available, however, we are open to trying new ones and therefore, we continue to design new immunohistochemical protocols, both for human and animal samples, in murine and porcine samples.

We use the technology of Tissue Micro Arrays (TMAs) through the automated device (TMA Grand Master (3D HISTECH)). We offer the possibility of slide scanning using the latest generation scanner Pannoramic 250 FLASH II 2.0 (3D HISTEC)], which allows you to scan slides completely at high speed and subsequently quantify the results using the specific software Quant modul (3D HISTEC).

2. Objectives

1. To be a useful tool for research.
2. To give support to researchers to achieve their goals with optimal quality.
3. To give support to private centers or companies.
4. To offer histological support, both in terms of sample processing and interpretation.
5. To design new protocols.
6. To use Tissue Micro Array Technology.
7. Complete analysis of the results.
8. Performing quality controls for other centers regarding immunohistochemistry and in situ hybridization.
9. Basic training for own users of the Service, as well as the possibility of teaching courses/internships within the University framework and High Schools.
10. To establish an agile work dynamic to be able to cover research needs at any time.

3. Instalation and equipment

The processing of the samples is performed according established laboratory protocols There are three apparatus (Immunostainers) that belong, one to the IRB Lleida and the others to the Hospital Universitari Arnau de Vilanova. Each device (Autostainer Link 48 and OMNIS, DAKO-Agilent), always connected to a computer to monitor its functionality, allows the simultaneous processing of 48 slides. Additionally it disposes of a device for image analysis (ACIS® III Instrument, DAKO) with the corresponding ACIS® III Software, a slide scanner (Pannoramic 250 Flash II-3D HISTECH, Ltd) with the corresponding software for the analysis of images (Quant Center-3D HISTECH, Ltd), an instrument for the manually construction of Tissue Micro Arrays (Beecher Instruments TMA apparatus), and an automated device (TMA Grand Master-3D HISTECH, Ltd.), in addition to two devices (PTLink, DAKO-Agilent) for sample pretreatment, a microtome, a biological safety cabiner, a microscope, an optical microscope with a camera, three refrigerators- freezer, a pipette kit, etc.

4. Types of samples

The Immunohistochemistry Scientific and Technical Service allows the processing of:

- Tissues (human, animals) (paraffin embedded)
- Tissues (frozen)
- Citology speciments
- *In vitro* cell cultures

5. Obtaining and registering samples

- Obtaining

In relation to human tissue samples, their access to the Service is carried out through the Biobank of IRBLleida.

In relation to animal samples and in vitro cell cultures, the Principal Investigator provides them to the assigned technician.

- Registering

The Service records all tasks. The devices of the Service have their own specific software for storing data. Only Immunohistochemistry and Histology Service personnel have access to this data.

6. Organization

The Immunohistochemistry and Histology Service of IRBLleida is an organizational structure that depends directly on the scientific director of IRBLleida.

b. Staff organization chart

The daily work team of the Scientific-Technical Service of Immunohistochemistry and Histology is composed of a technical manager with full dedication, the scientific manager with partial dedication and the medical and technical staff collaborators with partial dedication.

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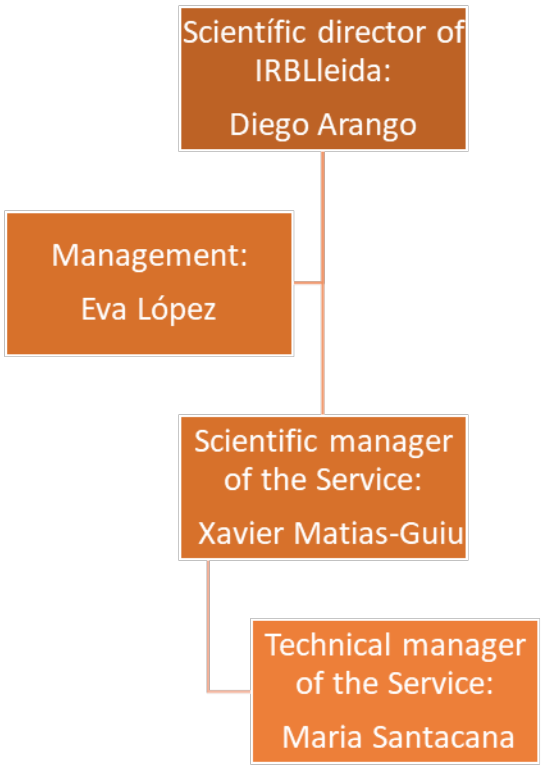

Facultative collaborating staff: Judit Pallarés, Sònia Gatius
Technical collaborating staff: Maria Carrelé

The functions of the coordinator and co-coordinator of the Immunohistochemistry and Histology Service are as follows:

- To promote the activity of the Service between researchers, internal and external research groups, companies, etc.
- To lead and promote the own investigation of the Service.
- To ensure that the operating rules of the Service are accomplished.
- To lead and verify the budgets assigned to the service activity.
- Convening and attending internal meetings related to the Service.
- To lead and advise the assigned superior technician.

The functions of the assigned superior technician are as follows:

- To ensure that the operating rules of the Service are accomplished.
- To make the budgets assigned to the service activity.
- Attend to the users whenever they need it.
- To advise and train users.
- To apply standard work procedures.
- To attend internal meetings of the Service.
- To give results as fast as possible after setting the criteria of priorities.
- Perform the internal investigation of the Service.
- Be responsible for the good daily operation of the Service.

b. Users

The users of the Immunohistochemistry and Histology Service are the assigned superior technician and the IRB fellows (with prior authorization of their IP (principal investigator) and the coordinator of the Immunohistochemical Service). They will have to go through a previous training period.

c. Beneficiaries

The direct beneficiaries of the Immunohistochemistry and Histology Service are:

- Internal research groups of IRBLleida
- Research groups from external centers
- Groups / private centers / companies

d. Rights and duties of the staff of the Immunohistochemistry Service

- The staff of the Immunohistochemistry and Histology Service is responsible for the organization and daily operation of the Service.
- Provide adequate training to new users of the Service.

-Advice any incidences and any doubts with the coordinator and co-coordinator of the Service.

7. Quality controls

a. Internal quality controls

Internal quality controls are performed routinely within the Service. The tissues that need to be studied are good, most of the time, to validate the technique. In addition, tissue sections or cell samples acting as positive and negative controls are added.

b. External quality controls

External quality controls can be classified into two types: those performed annually by external agencies or those performed by the Service itself for other centers.

For the first group, the results of the techniques are externally evaluated; As a consequence,it allows the improvement of the protocols and the possibility of offering a better service.

For the second group, it is the Service itself that evaluates the immunohistochemical techniques of other organisms. This allows us to act as a Reference Center and is an indicator of the quality of daily work.

8. Services and benefits

The applications currently available to the Immunohistochemistry Service are the following:

- Construction of frozen (OCT) and paraffin blocks.
- Microtomy.
- Histological stains (Hematoxylin-Eosin).
- Special stains (Histochemistry).

- Immunofluorescence technique.
- Immunohistochemical technique for the detection of proteins in human, murine, porcine, and other tissues, by antibodies produced in goat, mouse or rabbit (see available antibodies in the document: List of Antibodies).
- Double stain immunohistochemical protocol. Detection of two proteins simultaneously in a single section of tissue.
- Construction of Tissue Micro Arrays (cylinder diameters from 0.6mm to 2mm), manually (Beecher-Instruments) or automatically (TMA Grand Master-3D HISTECH Ltd.).
- Scanning of preparations (Pannoramic 250 Flash II-3D HISTECH Ltd.).
- Analysis of images of full sections or of Tissue Micro Arrays using Pannoramic 250 FLASH II 2.0 (3D HISTEC)] scanner through the specific software Quant modul (3D HISTEC).
-In situ hibridization using FISH (Fluorescent In Situ Hybridization) or CISH (Chromogenic In Situ Hybridization).
- Quality controls.

To develop other techniques that are wished to perform is not discarded.

9. Service requests

a. The Principal Investigator or applicant will contact the service coordinator or the assigned superior technician.
b. A budget will be provided to the applicant in accordance with the required services (In the IRBLLeida web site budgets can be consulted).
c. The service request will then be formalized. To the IRBLleida website you can find the document "Sol· licitud de servei".

10. Budget

In the IRBLLeida web site, budgets can be consulted:
https://www.irblleida.org/media/upload/pdf/ptr-tarifes-2020_1576583216.pdf

11. Rules

a. Ethical aspects

The organism responsible for verifying the ethical, quality and feasibility of each scientific project is the Committee for Clinical Research (CEIC) and the Ethical Committee for Animal Experimentation (EAC), always in accordance with the active legislation:

- Biomedical research law 14/2007
- Organic Law 15/1999 on the protection of personal data
- Convention of the European Council for the Protection of Human Rights and Human Dignity concerning the applications of biology and medicine, (Spain ,1 January 2000).
- Additional Protocol to the Convention on Human Rights and Biomedicine, in relation to biomedical research (2005)
- Recommendation of the Council of Europe on research on biological material of human origin of 15 March 2006.
- Guide to good practice in health science research. Institut Català de la Salut, 2015.
- Biosafety in Microbiological and Biomedical Laboratories; US Department of Health and Human Services, 4th edition.

All clinical information will be anonymous and confidential. The Service will ensure the integrity and confidentiality of all data files provided.