Histology-Biorepository SRF Newsletter

Histology SRF Services

The Histology SRF has the capability to process various types of animal and human tissues, including bone, skin and the CNS for assorted research needs. We are able to perform standard chromogenic/fluorescent IHC/IF on either FFPE (formalin-fixed, paraffin-embedded) or fresh-frozen tissue sections from human specimens and experimental animal models. Our group possesses a wealth of experience working with a variety of animal specimens obtained from mice, rats, rabbits, goats, pigs and even fish (eg. zebra fish).

Tissue Microarray (TMA) Generation

The Histology SRF has generated a “normal tissue TMA” to provide the basis for testing expression levels of specific proteins in different tissues in a highly efficient manner. Briefly, we reviewed whole sections from FFPE samples to identify viable, morphologically representative areas of normal tissues from which needle core samples could be taken. In total, 3 sets of 26 different types of normal tissues (including a wide variety of organs such as skin, lymphoid tissues, gastrointestinal track, liver, breast, male and female genitourinary track, endocrine tissues, brain and different mesenchymal tissues) were used. From each specimen, one 0.6 mm core was punched and arrayed onto a recipient paraffin block using a precision instrument (Beecher Instruments, MD), with a total of three cores for each normal tissue. Five-micrometer sections of these TMA blocks were stained with Hematoxylin & Eosin to assess tissue quality.

We are also planning a “multi-tumor TMA” in which we will introduce the most common human benign and malignant tumors in a similar fashion as the normal-TMA counterpart. Furthermore, the Histology SRF is able to generate customized TMAs for the Mount Sinai research community corresponding to the needs of each investigator.

Some initial plans for the normal and tumor-TMA will be to collaborate with Dr. Tom Moran and screen various Sinai-specific monoclonal antibodies to generate a phenotype-expression and characterization profile which will be made available for interested Sinai investigators.

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- General Information:
  http://www.mssm.edu/research/resources/shared-resource-facilities/histology
Image Analysis Services

In addition to whole-slide imaging services with our Olympus digital scanner, the Histology SRF also offers access to the Visiopharm (quantitative) histoinformatics software. The application provides histomorphometry and is able to quantify IHC and IF biomarker expression profiles.

<image>

Breast Cancer, IHC—Estrogen Receptor. (http://www.visiopharm.com)

Biorepository Collection in 2012

The Biorepository would like to thank all the departments and disease groups for their cooperation in our tissue collection efforts—thus far in 2012 we have banked 524 unique cases, of which 73 are consented.

<chart>

Specimens By Disease Group

Total Cases Banked = 524

- Thoracic, 63
- ENT, 116
- GI, 64
- OB/GYN, 28
- Urology, 64
- Neuro, 17
- Other, 83
- Liver, 72

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Special Partnership—Novare

Mt. Sinai has partnered with Novare Biologistics in the Bronx to offer a range of services in the area of freezer storage/maintenance and specimen management/transport. After the recent events of Sandy it is in the best interest for all investigators and PI’s at Sinai to critically evaluate their current specimen storage and management systems and be prepared for whatever the future holds.

Novare’s full service, cGMP-compliant repository is located in the greater NY metropolitan area. With its wide spectrum of services, and potentially unlimited storage capabilities, Novare is a leading repository in New York and the surrounding states.

The following aspects of storage processes are provided by our professional staff:

- 24/7 monitoring of all units by using validated, 21 CFR, part 11 compliant temperature monitoring system;
- 24/7 emergency response;
- Preventive maintenance program at no extra charge;
- Shipping, receiving and inventorying of samples to ensure chain of custody documentation;
- Comprehensive monthly reports summarizing freezer temperatures, activity and transactions;
- 24/7 secure direct remote access via VPN to the inventory and temperature monitoring systems;
- 24/7 completely backed up and kept for future reference video monitoring along with internal and external security at multiple levels.

Source: www.novarebiologistics.com

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