March 2012 Newsletter

Dear Allison,

Short term storage is frequently used for samples that cannot tolerate cryopreservation or do not require stability for extended periods of time. This month's mini-tutorial discusses this type of storage.

The early registration deadline for the short course is approaching. Be sure to register in time to benefit from the reduced rates (registration).

BioCoR's LinkedIn page is supposed to be a forum for discussion of issues related to preservation. We will be expanding the information provided through that page. Stay posted for changes this spring.

Check out the library to see what has been added this month.

BioCoR is a national resource focused on advancing the science, technology and practice of biospecimen preservation. We are dedicated to developing biopreservation protocols, improving preservation and storage technologies, establishing standards and guidelines and training individuals and institutions in the science and technology of biopreservation.

More information can be found on the BioCoR website: www.biocor.net. Or you may contact us now at biocor@me.umn.edu

Minitutorial: Short term storage
**Introduction:** Some biological systems do not require extended periods of storage or respond poorly to conventional methods of long term preservation (cryopreservation or dry state storage). These systems may be placed in specially designed storage solutions to retain viability for relatively short periods of time. Short term storage is commonly used as a bridge to cryopreservation. One common example of this is umbilical cord blood banking in which the cord blood is collected in one location (delivery room) and transported in the liquid state to a central facility where the sample is red blood cell depleted and cryopreserved. Short term storage is just one tool in the toolkit available for preservation of biological systems.

**Synonyms:** liquid storage, hypothermic storage

**Systems commonly stored in this manner:** solid organs for transplantation, packed red blood cells, dendritic cells, and natural killer cells.

**Scientific principals:** metabolic needs of cells may be reduced if the sample is held at lower temperatures but the cells will still require nutrients (metabolites and oxygen) and those components are commonly found in short term storage solutions. It is also common for these solutions to contain antioxidants and free radical scavengers. It is common for cells to experience swelling when stored at low temperatures for extended periods of time. Additional components may be added to exert osmotic forces and thereby prevent cell swelling and tissue edema. Depending upon the cell types(s) present, storage solution may include components designed to enhance the survival of specific cell types. For example, organ storage solutions may include additives designed to enhance specifically survival of endothelial cells and therefore physiological function of the organ when surgically reattached in a recipient. There is no single short term storage solution appropriate for every organ or cell type. Effective methods of short term storage requires development of solutions appropriate for the system of interest.

**How to learn more:** Charles Lee from the University of North Carolina-Charlotte provides lectures in the short course on this mode of storage including scientific principals, practical information on protocol development and emerging trends in short term storage.

Preservation of molecular, cellular and tissue biospecimens

**Don't miss the early registration deadline:**

**May 4, 2012**

Preservation of Molecular, Cellular and Tissue Biospecimens

May 21-23, 2012

Minneapolis, MN 55455
Now in its eighth year, this short course covers: liquid storage, cryopreservation, fundamentals of preservation, protocol development, debugging protocols, repository design, protein preservation, tissue preservation, clinical preservation, quality control, regulatory issues and more.

The course is offered for both in class attendance and is webcast with lectures available to watch live or later at your convenience.

The following is a listing of quick links to short course information:

- a listing of lectures for the course (schedule)
- Information on lecturers (speaker bios)
- Registration fees (fee schedule)
- Direct link to online registration (online registration)

The short course is a good place to find people looking for the latest in products and services related to preservation. You can find out more information on opportunities for exhibiting at the short course (exhibit information).

Groups of two or more attending the short course receive a discount.

As always, you are welcomed to contact us at biocor@me.umn.edu if you have questions regarding the short course.

The course has been endorsed by ISBER.

**What is new in the library?**

We are in the process of extracting the mini-tutorials, tip-of-the month and other special articles from newsletters and posting them in the website. Please keep checking for those new additions.

**Linked In discussion topic of the month**

Join the discussion of preservation issues on our LinkedIn site! (BioCoR Linked In Page)

**This month’s topic:** Economic projections paint a glowing picture of the future of biobanking. Over the next 10 years:

- Do you envision the total number of biobanks to grow, diminish or stay the same?
- The cost per sample?
BioCoR would like to acknowledge the support of the University of Minnesota College of Science and Engineering and the Academic Health Center of the University of Minnesota.

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