Select Publications Citing BioCision Products

BioCision's products including the alcohol-free CoolCell® cell freezing container, CoolRack® thermo-conductive modules, and ice-free CoolBox™ cooling systems have been adopted by thousands of researchers worldwide. Here is a select list of publications that have incorporated BioCision's products into their research in a variety of different organisms.

MAMMALS

Publication	Summary	Blog Link
Navone SE, et al. "Isolation and expansion of human and mouse brain microvascular endothelial cells." *Nature Protocols*. 2013.	**Cell Isolation from Brain Endothelium** In the brain, endothelial and neighboring perivascular cells are uniquely adapted to form the blood-brain barrier. An intact blood-brain barrier is critical to brain health, however, isolating the cells that form that barrier can be challenging. An independent paper recently reported the establishment of endothelial cell lines from murine and human brain tissue samples. In it, they use the BioCision CoolCell® freezing container to preserve these important cell lines. The authors suggest that their technique can readily be adapted to isolate endothelial cells from other tissue types.	http://blog.biocision.com/8428/cell-isolations-from-brain-endothelium
Dame, MK et al. Human colonic crypts in culture: segregation of immunochemical markers in normal versus adenoma-derived. Laboratory Investigation, December 23, 2013.	**CoolCell® Freezing Container Preserves Intestinal Crypts for Adenoma Studies** The small intestine and colon are both lined with glands known as intestinal crypts. Crypts are lined with specialized epithelial cells that undergo proliferation in a tightly regulated manner, and uncontrolled proliferation can lead to colon cancer. Thus, the study of these crypts is important to better understand how cancer develops. It turns out primary crypt cells are difficult to isolate and notoriously difficult to maintain in culture. This recent paper highlights a new method of isolating human intestinal crypts. Using the CoolCell freezing container, scientists successfully cryopreserved the epithelial cells while fully maintaining function post-thaw	http://blog.biocision.com/8951/isolating-human-intestinal-crypts
Thuwanut, P. et al. Sperm quality and morphology of cryopreserved testicular tissues recovered post-mortem from diverse wild species. *Cryobiology 67*, 244-247, doi:10.1016/j.cryobiol.2013.07.002 (2013).	**Cryopreservation preserves Testicular Tissue from Endangered Animals** Cryopreservation of sperm and subsequent artificial insemination using frozen-thawed spermatozoa are important processes that can potentially help manage small populations of rare wildlife species. However, a fast freeze-thaw process was thought to cause damage to the structure and function of spermatozoa.	http://blog.biocision.com/9611/cryopreservation-using-coolcell-preserves-testicular-tissue-endangered-animals

	The authors confirmed the overall structure of testicular tissue was indeed better preserved using a slow freezing method that incorporated BioCision CoolCell® cell freezing container rather than a fast-freezing protocol.	
Wongbandue G, et al. Viability and Growth of Preantral Follicles Derived from Cryopreserved Ovarian Tissues of a Cheetah *(Acinonyx jubatus)* Post-mortem. Thai J Vet Med. 2013: 43(3), 429-434.	**Controlled Freezing and Cryopreservation Save Cheetahs** Cryopreservation of ovarian tissue freezes the preantral follicles, which are the tissues that contain and support immature oocytes. A research group in Thailand investigated the potential for cryopreserving preantral follicles from Cheetahs, in order to rescue fertility for this endangered species. They determined the best methodology is a slow-freezing protocol using the CoolCell® freezing container; with luck the technique can be expanded to other endangered species.	http://blog.biocision.com/9192/cryopreservation-saves-cheetahs

INSECTS

Publication	Summary	
Marunde, MR. Improved tolerance to salt and water stress in Drosophila melanogaster cells conferred by late embryogenesis abundant protein. J Insect Physiol. 2013 Apr; 59(4):377-86.	**Cellular Stress Research is Aided by CoolCell® Freezing Container** Dehydration and freezing kills, but they don't have to. Some plants and animals have adapted mechanisms to protect themselves against severe cellular stress. The ability to survive cellular stress is a result of the proteins and sugars hardy plants and animals naturally produce. Researchers recently used the CoolCell freezing container to show that one of these proteins, a late embryogenesis abundant (LEA) protein, helps mitochondria from transfected Drosophila cells survive freezing conditions.	http://blog.biocision.com/7071/cellular_stress_coolcell
Michael J. Goblirsch, Marla S. Spivak, and Timothy J. Kurtti. "A Cell Line Resource Derived from Honey Bee (Apis mellifera) Embryonic Tissues." PLOS ONE. 2013.	**CoolCell® Freezing Container Aids Honeybee Cell Line Development** Many crops, such as almonds, peaches, cotton, and apples, depend on fertilization by honeybees. Colony Collapse Disorder (CCD) is a poorly understood disease that threatens honeybee populations worldwide. Now, with the use of CoolCell, scientists have been able to establish and preserve the first honeybee cell line, which gives them a new hope of understanding and fighting CCD.	http://blog.biocision.com/8418/coolcell-cell-line-development-honeybees

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AQUATIC

Publication	Summary	
Buhmann, M. et al., " Post-cryopreservation viability of the benthic freshwater diatom Planothidium frequentissimum depends on light levels" Cryobiology *(2013), 67, 1, pp. 23–29*	**CoolCell® Freezing Container used in the Freezing of Freshwater Diatoms** The diatoms are one of the largest and ecologically most significant groups of organisms on Earth. Diatoms have potential as food for aquaculture, functional foods and even for biodiesel. Use of laboratory strains of fresh water diatoms is complicated by the low recovery from frozen stocks using standard methods. Using this new CoolCell method developed by Buhmann *et al*., allows greater numbers and types of diatoms to be easily sustained in national repositories.	http://blog.biocision.com/7425/diatoms_cryopreservation
Goswami, M. et al. Establishment and characterization of a piscean PCF cell line for toxicity and gene expression studies as in vitro model. Tissue and Cell 46, 206-212, 2014.	**CoolCell® Freezing Container Aids Fish Cell Line Development** Scientists in India, are collaborating on a project to establish immortalized cell lines from vulnerable fish species. Cell lines of this type are important for the preservation of genetic material from endangered fish species, but they are also important on an everyday basis for environmental toxicity studies, gene expression studies, and studying viral diseases in the local fish population. The scientists chose the CoolCell freezing container to aid them in their efforts.	http://blog.biocision.com/10113/coolcell-aids-fish-cell-line-development
Kwok A. et al. Cryopreservation and storage of mussel (Mytilus spp.) haemocytes for latent analysis by the Comet assay. Mutation Research 750 (2013) 86-91.	**Fieldwork Sample Handling is improved by CoolCell® Freezing Container** Blue mussels can be used as natural indicators of coastal pollution. They have a high capacity for filtering water and tend to bioaccumulate environmental contaminants. DNA damage that shows up in blood can be used as a measure of pollution, but collected samples often degrade before they can be analyzed in the laboratory. Now scientists have found a way to adapt the CoolCell freezing container for use outside the lab. Mussel blood cells are then frozen and safely stored for later analysis.	http://blog.biocision.com/7115/fieldwork-sample-handling-coolcell

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CoolCell® alcohol-free, cell freezing containers

Item No.	Description	For Use With
BCS-405	CoolCell LX, Purple	12, 1.0 – 2.0 mL cryogenic vials
BCS-405G	CoolCell LX, Green	
BCS-405O	CoolCell LX, Orange	
BCS-405PK	CoolCell LX, Pink	
BCS-170	CoolCell FTS30, Purple	30, 1.0 – 2.0 mL cryogenic vials
BCS-170G	CoolCell FTS30, Green	
BCS-170O	CoolCell FTS30, Orange	
BCS-170PK	CoolCell FTS30, Pink	
BCS-406	CoolCell 5ml LX	12, 3.5 – 5.0 mL cryogenic vials
BCS-172	CoolCell SV2	12, 2 mL injectable ampules
BCS-262	CoolCell SV10	6, 10 mL injectable ampules