BioCision

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 stem cell and T cell related publications that have incorporated BioCision's products into their workflow.

STEM CELLS

Publication	Summary	Blog Link
Guido Moll, *et al*. "Do Cryopreserved Mesenchymal Stromal Cells Display Impaired Immunomodulatory and Therapeutic Properties?" *Stem Cells (2014), May 8*	**Understanding the Effects of Cryopreservation on Cellular Therapy: A Study of Mesenchymal Stromal Cells (MSCs) in the Clinic.** An independent international group of scientists headed by the Karolinska Institute in Sweden published a study investigating the effects of cryopreservation on the therapeutic properties of MSCs using the CoolCell technology.	http://blog.biocision.com/10027/understanding-effects-cryopreservation-cellular-therapy
Czechanski, A. *et al.* "Derivation and characterization of mouse embryonic stem cells from permissive and nonpermissive strains." *Nat Protocols (2014), 9, 559-574*	**Efficient Derivation of Embryonic Stem Cell Lines.** Researchers used the CoolCell freezing container to design a new protocol to efficiently derive and cryopreserve the mESC lines for long-term storage. Mouse ESCs can be derived with approximately 90% efficiency using this method.	http://blog.biocision.com/9354/coolcell_embryonic_stem_cell
Bilican, B. *et al.* "Physiological normoxia and absence of EGF is required for the long-term propagation of anterior neural precursors from human pluripotent cells." *PLoS One (2014), 9, e85932*	**Neural Precursors Maintain Differentiation Potential After Cryopreservation.** Researchers use the CoolCell freezing container for preservation of hPSC-derived neural precursors. When thawed, they differentiate into highly enriched, active neuronal populations, highlighting their long-term propagation capacity and stability. This new protocol circumvents the need for *de novo* differentiations, giving researchers the opportunity to form banks of neural precursor cells for use in regenerative medicine and drug screening.	http://blog.biocision.com/9282/neural-precursors-cryopreservation
Y. Shi *et al*. "Directed differentiation of human pluripotent stem cells to cerebral cortex neurons and neural networks." *Nature Protocols (2012) Oct;7,10*	**Neuronal Stem Cells are Cryopreserved with CoolCell Freezing Container.** It is now possible to cryopreserve established cortical neuronal stem cells before they terminally differentiate. The published protocol demonstrates a new method for directed differentiation of stem cells leading to the formation of all human cortical neural cell types.	http://blog.biocision.com/7127/neural_stem_cells_cool_cell

Menendez L, *et al*. "Directed differentiation of human pluripotent cells to neural crest stem cells." *Nature Protocols (2013) 203-212*	**Successful Neural Crest Stem Cell Cryopreservation.** This protocol describes the successful controlled-rate freezing and thawing of neural crest stem cells derived from scalp samples using the CoolCell container. Post-thaw these stem cells were characteristically stable and self-renewing for over 30 passages.	http://blog.biocision.com/7275/neural-crest-stem-cells
Cohen, R. I *et al*. "Standardized cryopreservation of pluripotent stem cells." *Current Protocols Stem Cell Biology (2014) 28: 1C.14*	**Optimal Cryopreservation of Human Pluripotent Stem Cells using the CoolCell Freezing Container**. In collaboration with Dr. Rick Cohen from Rutgers University, the publication recommends dissociating hPSCs into near single-cell suspensions for an even distribution of the cryoprotectant, and freezing with the CoolCell freezing container. CoolRack modules and the ice-free CoolBox cooling systems were also incorporated into the protocol to standardize the pre-freezing workflow.	http://blog.biocision.com/9409/stem-cell-cryopreservation-2

T CELLS

Publication	Summary	
Foussat, A *et al*., "Effective Cryopreservation and Recovery of Human Regulatory T Cells." *BioProcess International (2014), 12, S3, pp. 34–38*	**CoolCell Freezing Container Adopted for Treg Cell Therapy Clinical Trial.** TxCell in conjunction with BioCision recently published the details of the experiments that resulted in TxCell's adoption of the CoolCell freezing container for future phases of the Ovasave clinical trial for Crohn's disease. In early-phase trials a controlled-rate programmable freezer had been used. However TxCell researchers successfully demonstrated that post-thaw cell viability was comparable when using the CoolCell cell freezing container, and the CoolCell was chosen for use in the phase 2b trial due to its portability, small footprint and zero maintenance. CoolRack modules and the ice-free CoolBox cooling systems were also incorporated into the clinical trial to standardize the pre-freezing workflow and reduce variability.	http://blog.biocision.com/9503/coolcell-txcell-cell-therapy
Gomez, EF. "Intracellular ATP Production by CD4 T Cells." *Master's thesis. Universidad de Cantabria (2013)*	**How Altering T Cell Activity May Improve Organ Transplant Success**. ATP production from CD4+ T cells is a good biomarker of an active immune system. Researchers analyzed ATP production in CD4+ T cells after blood samples stored under various conditions, including cryopreservation at -80°C using the CoolCell container.	http://blog.biocision.com/9584/t-cell-organ-transplant

Yi JS, *et al*. "Characterization of CD4 and CD8 T cell responses in MuSK myasthenia gravis." *Journal of Autoimmunity (2013)*	**Elevated T Cell Activity in Myasthenia Gravis.** Researchers investigating the role of the immune system and lymphocyte activity in Myasthenia Gravis patients chose the CoolCell container as the freezing method for long-term storage of the CD4+ T cells whilst sample collection was underway. After storage, CD8+ T cells in Myasthenia Gravis patients showed an increased production of various cytokines compared to healthy donors.	http://blog.biocision.com/8996/t-cell-activity-myasthenia-gravis

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