



About SciKon Innovation, Inc.

SciKon is a Tissue Engineering company that integrates 'Theories and Practices' from a variety of scientific disciplines. One platform is to develop thawing media (Kryo Thaw) that can enhance cell viability and cell plateability by removing ineffective cells during the cell thaw process. Cell thaw solutions are now established for human cryopreserved hepatocytes; labeled as "Kryo Thaw – I". Technologies are adaptable for cell specific variations (e.g. Kryo Thaw – II).

Cryopreservation

In many instances, freezing techniques are used to preserve living cells. Unfortunately, the cryopreservation and recovery of some cells has proven to be quite troublesome. During tissue procurement and cell processing, cells are subjected to relatively harsh conditions, followed by freeze-thaw cycles that result in decreased cell survival rates.

Techniques of cryopreservation may induce three modes of cell decay:

1. Physical cell rupture caused by the effects of cellular volume changes and intercellular ice crystal formation.
2. Cell necrosis which occurs rapidly and is characterized by cellular swelling, compromised cell membrane integrity, random DNA fragmentation, and release of cytokines.
3. Apoptosis, which has been identified as a major cause of cryopreservation-induced cell death.

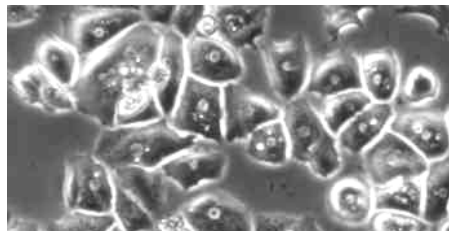
Variations in thawing and functional outcomes are attributed to many factors including initial tissue qualities and native cell performances.

Due to cellular diversity (phenotypic differences), cell responses to cryoprotectant media are unique. Subsequently, for post-thaw activities, plating efficiencies are influenced by cryo-thaw components and may be irrespective of cell viability results.

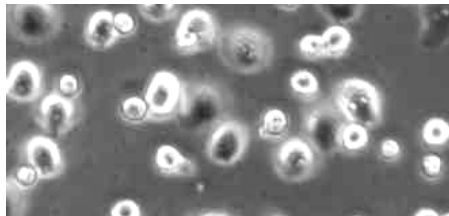
Kryo Thaw - I

- "Kryo Thaw" is our global name for cell cryopreservation thawing media. "Kryo Thaw - I" product goals are to improve cryopreserved post-thaw cell efficacies of human hepatocytes. Shown in the image below are culture results of primary human hepatocytes, after cryopreservation, thaw, and seeding.

Cell Lot using Kryo Thaw – I: Day 1



Same Cell Lot without Kryo Thaw – I: Day 1



Human tissues and cell fractions are heterogeneous. Results expected to vary between donor lots.

Primary Hepatocytes (human). Post Thaw	Viability (%)	Plateability (%)
	Average of 10 Donor Lots	
With Kryo Thaw - I	75 ± 15%	80 ± 15%
Without Kryo Thaw - I	50 ± 15%	50 ± 25%

For differentiated human liver cells, protein synthesis and excretion are also sensitive to cryopreservation. Albumin production in cryopreserved mature cells is about ½ of fresh hepatocytes. Cytochrome P450 enzymes are generally not affected by cryo, but cytosolic proteins (GST, UGT) are more sensitive to damage.

Specifications

Sterile, pH 7.4 – 7.6. Storage: 2–8°C.

Kryo Thaw - I is formulated to:

- (a) Improve overall viability of cryo'd human hepatocytes, after thawing.
- (b) Improve the percentage of cells that attach (plateability).

Applications

- **Kryo Thaw - I** was devised for cryopreserved human hepatocytes. Also effective for difficult to thaw, cryopreserved animal cells.
- **Kryo Thaw - II** is effective for human progenitor hepatic cells and healthy cryopreserved animal cells.

Instructions

- Ready to use.
- Thaw cryopreserved cells by rapid warming; 37°C water bath.
- Mix thawed cells in centrifuge tubes containing Kryo Thaw. Invert 5 times.
- Centrifuge at 110g x 10min, room temp. Remove supernatant, resuspend pellet in culture media. Perform cell viability count.
- Seed cells in culture wells.

Ordering

Catalog #: Kryo Thaw – I or II
 Volume: varies
 Price: contact SciKon

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