

Focus on
Biobanking,
Cell Therapy &
Research

SmartThaw™

SmartThaw-
XL™

SmartThaw™ provides a next generation approach for *effective sample thawing*

Technology Overview

The innovative SmartThaw™ and SmartThaw-XL™ dry thawing systems fulfill an unmet need and enable the high through-put, consistent, controlled and safe thawing of frozen biological samples.

Given the critical role of cryopreserved cell products coupled with an absence of focus on the thawing process, the SmartThaw™ system provides a cost-effective, self-contained, bench top solution for the rapid thawing of samples frozen in a variety of container formats ranging from vials to cell freezing and blood product bags.



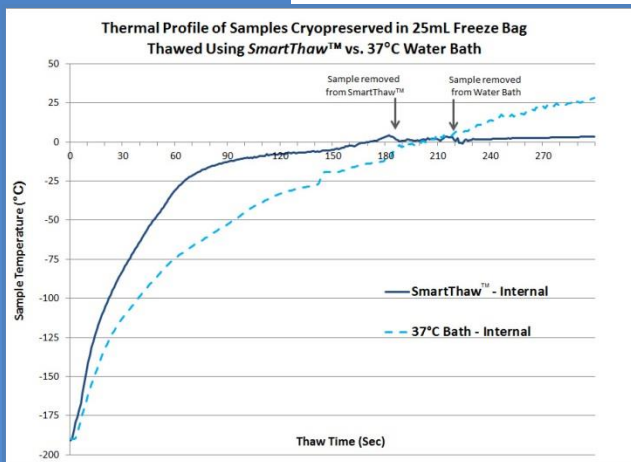
SmartThaw™ Features

- Conforming, pre-warmed, easy to clean thaw pillows
- Thaw time and data recording parameters user programmable
- Consistent, gentle, hands-free continuous oscillation of sample
- Visual and auditory notifications

SmartThaw™ System Benefits

- Improves cell product development and production,
- Reduces sample loss,
- Increases sample quality and utility,
- Improves process efficiency
- Enables temperature monitoring and standardization (increasing accuracy and repeatability)

Warming Temperature Profiles of Samples Thawed using the SmartThaw™ System



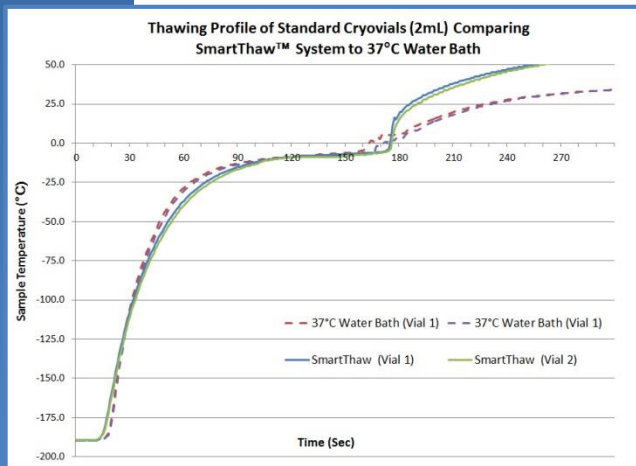
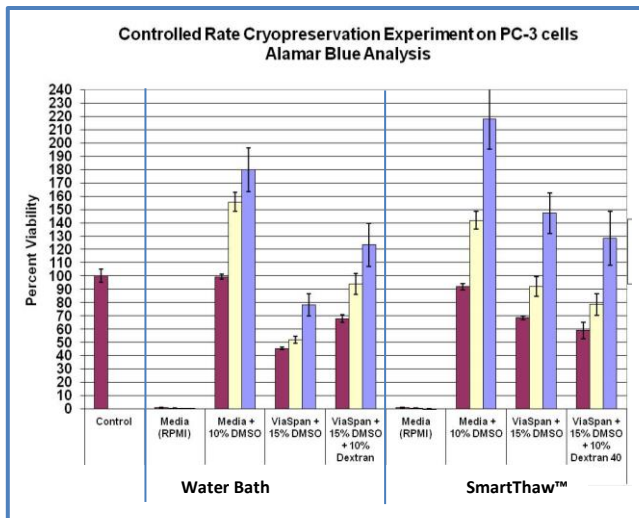
Compared to a Standard 37°C Water Bath Cell Samples were frozen in either in a cell freezing bag (Origen) in 25 ml CP suspension or a typical 2ml cryovial (1ml cell CP suspension). Samples were removed from LN₂ storage and placed directly into the water bath or the SmartThaw™ system for thawing. Analysis of the recorded temporal thermal profiles revealed similar thaw profiles between the water bath and SmartThaw™ protocols for standard cryovials (data on back). SmartThaw™ produced a quicker and more effective thawing profile for the 25ml Cell Freezing Bag. Overall, the SmartThaw™ system delivered a more efficient, cleaner and controllable thawing process compared to the standard 37°C water bath protocol.

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Assessment of Cell Viability following Thawing using the SmartThaw™ System

Human prostate cells were cryopreserved following a standard controlled rate freeze protocol in various media and cryoprotective agents. Following storage in LN2, samples were removed and thawed immediately in either the SmartThaw™ device or a standard 37°C water bath. Samples were then placed into culture and viability assessed 1-3 days post thaw. Comparative analysis revealed equivalent or better sample viability and quality in the SmartThaw™ cohort compared to the standard water bath cohort in all conditions evaluated.



Intellectual Property

Patents pending with the USPTO covering:

- ❖ Standalone unit for the thawing of various samples
- ❖ Compatibility with multiple container types
- ❖ The unique design offers a highly versatile patent pending device, unmatched within the marketplace

COMPETITIVE ADVANTAGE

Performance Benefit

- ❖ Controlled and traceable thawing
- ❖ Sterile dry thawing system
- ❖ User programmable thaw times and temperatures
- ❖ Stand-alone and transportable
- ❖ Compatible with multiple container formats (cryovials, ampules, bags)

Cost Benefit

- ❖ Single system for multiple format use
- ❖ No recovery time between samples
- ❖ Low cost compared to other dry thaw systems
- ❖ Enables more effective and uniform thawing
- ❖ Reduces overall risk for sample loss, contamination and user error

Business Development and Investment Opportunity

Our mission is to rapidly translate new and innovative technologies through the concept and development phases and into the commercialization stage to bring these technologies to the market. In support of these efforts, CPSI Biotech welcomes inquires and discussions pertaining to equity investment as well as business relationships (sales, acquisition, licensing, partnering), research collaborations (beta site testing) and pre-order requests for the SmartThaw™ Systems.

Caution: Investigational Devices Limited by Federal Law to Investigational Use Only