



INTRODUCING:

PluriFreeze™

A cryopreservation system **that easily scales**



A novel cryopreservation media **ideal for allogeneic research**



Teknova and Pluristyx have collaborated to introduce an innovative cryopreservation system designed to support the development of emerging therapies, bringing together Pluristyx's cutting-edge stem cell expertise with Teknova's state-of-the-art reagent manufacturing.

✔ Supports cell metabolism

Create optimal conditions prior to cryopreservation with PluriFreeze Base, specifically designed to mimic intracellular space and provide metabolic support.

✔ Improved viscosity

Facilitate scale-up and process automation with PluriFreeze PF10, a low-viscosity media containing 10% DMSO, with proven performance.

✔ Flexible and cost effective

Contain research costs with off-the-shelf RUO and GMP solutions that can be further customized to enhance post-thaw viability and function.

PluriFreeze Base, 100mL

STARTING FROM \$240

Condition cells prior to cryopreservation.

RUO Product ID: 22244

GMP Product ID: 23014

PluriFreeze PF10, 100mL

STARTING FROM \$260

Protect cells during cryopreservation.

Contains DMSO ❄️

RUO Product ID: 22243

GMP Product ID: 23015

RUO products are ready-to-ship, and GMP products are made to order. Please request a quote for GMP products.

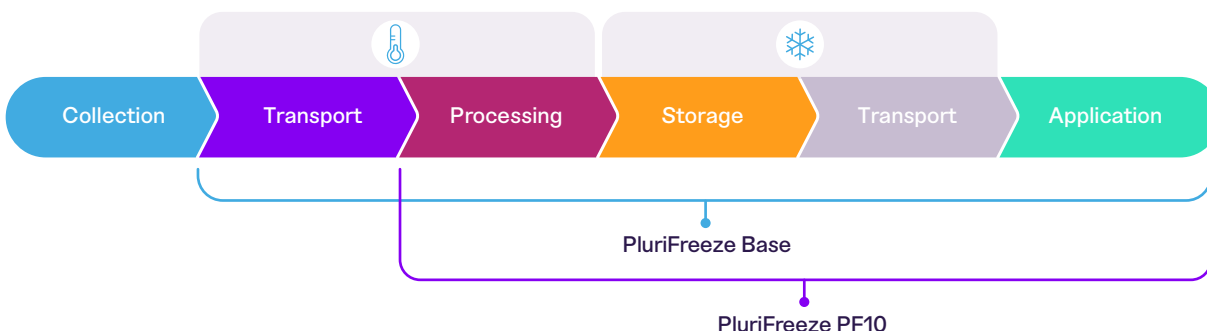
Characteristics	PluriFreeze	Industry Reference
RUO/Reduced Cost	✔	✖
Reduced Viscosity	✔	✖
Flexible Formulation	✔	✖
Large Scale Compatible	✔	✖
DMSO Cryoprotectant	✔	✔
Suitable for Many Cell Types	✔	✔

See product details at
teknova.com/pluristyx

FOR USE ACROSS THE WORKFLOW

A better approach to biopreservation

Using the PluriFreeze Base in combination with PluriFreeze PF10 allows for the optimization of biopreservation conditions across the entire workflow. While conventional methods often only consider biopreservation for the finished product, PluriFreeze can be introduced earlier in the workflow, providing more flexibility by facilitating short-term cold holds, and improving outcomes by preparing and supporting cells prior to cryopreservation.



HOW TO USE IT

Key considerations for cryopreservation methods and reagents

By choosing an appropriate storage medium and then further optimizing methods, an ideal extracellular environment can be maintained to protect cells and prevent the formation of ice crystals that can disrupt intracellular structures.

KEY FACTORS TO CONSIDER

Hypothermic Storage (Refrigerated)

- Use of PluriFreeze Base and PF10 at relevant stages
- Rate and temperature of solution addition
- Storage temperature
- Warming rate
- Removal or dilution of storage solution

Cryopreservation (Liquid Nitrogen)

- Selection of PluriFreeze for biopreservation solution and cryoprotectant
- Rate of cryoprotectant addition
- Temperature of cryoprotectant addition
- Temperature of ice nucleation
- Cooling rate
- Storage temperature

Thaw and Other Factors

- Cell conditions prior to cryopreservation step
- Cryopreservation cycle
- Thaw and recovery
- Warming rate
- Removal or dilution of cryoprotectant and storage medium

See the protocol at
teknova.com/plurifreeze

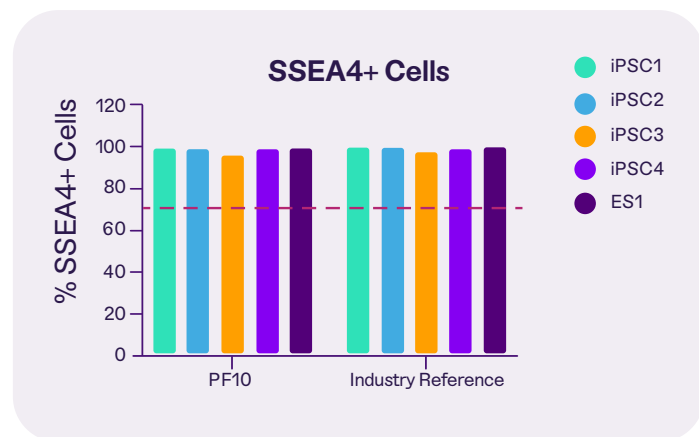
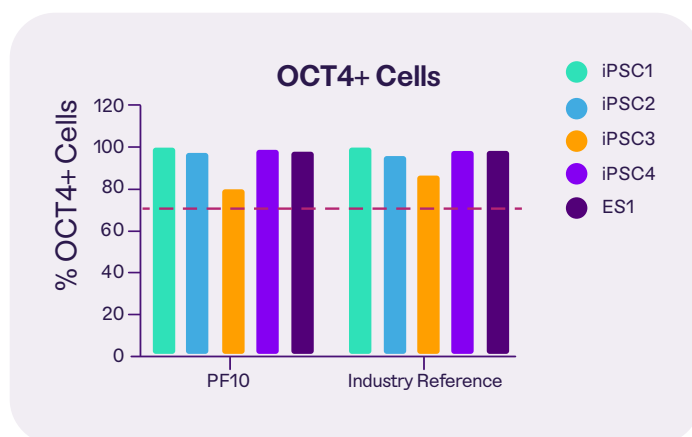


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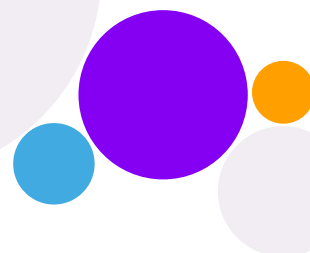


Undifferentiated Status of iPSCs

Cryopreservation of iPSCs using **PlurifFreeze PF10** supports similar post-thaw levels of marker expression of undifferentiated state compared to the industry reference with four iPSCs and one embryonic stem (ES) cell line. The 70% threshold shown on the flow cytometry plots is a minimum level for iPSCs that we expect all undifferentiated stem cells to maintain.

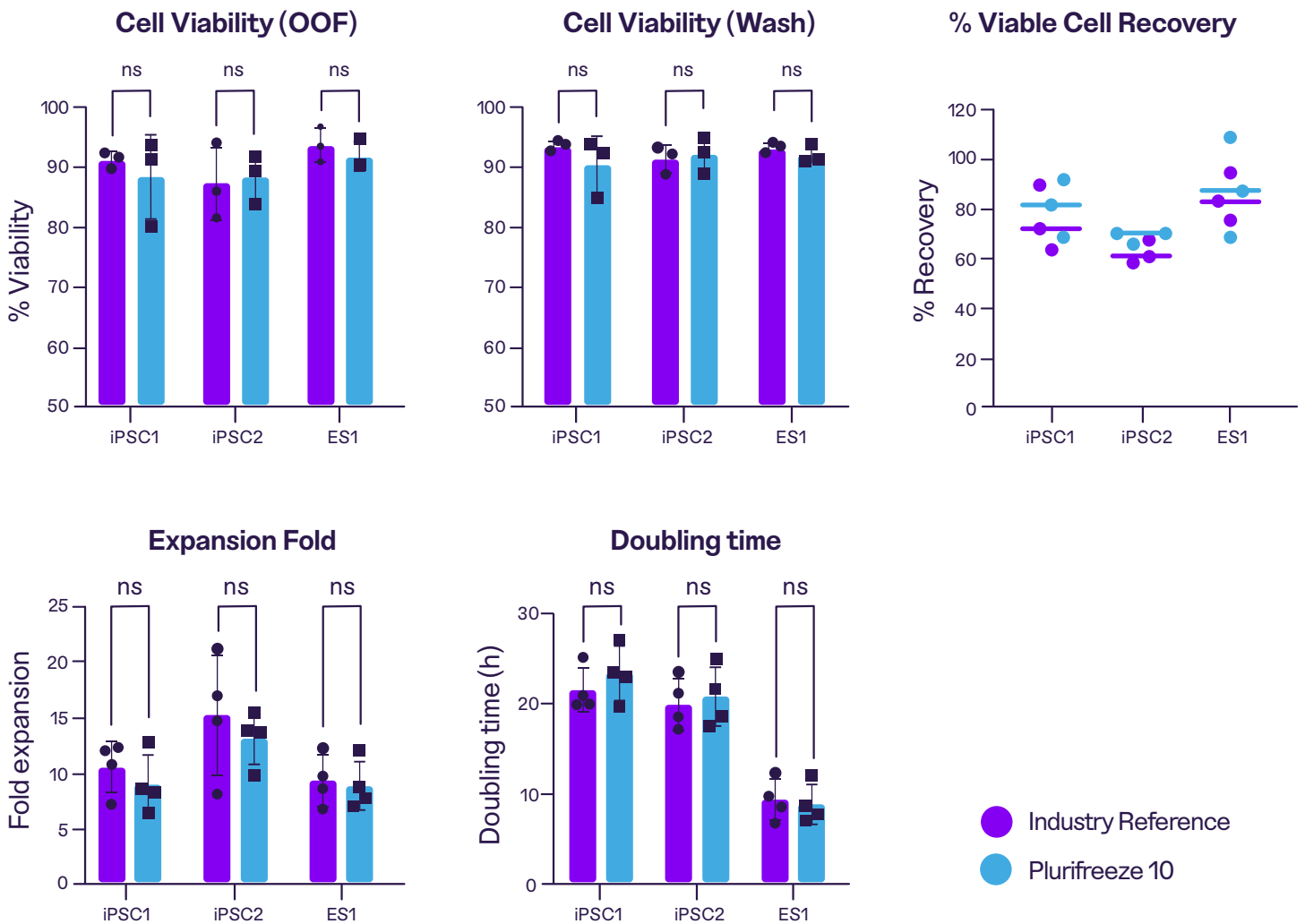


See
more data



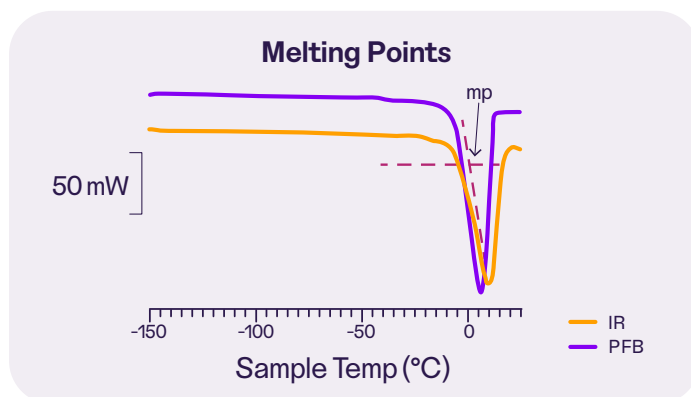
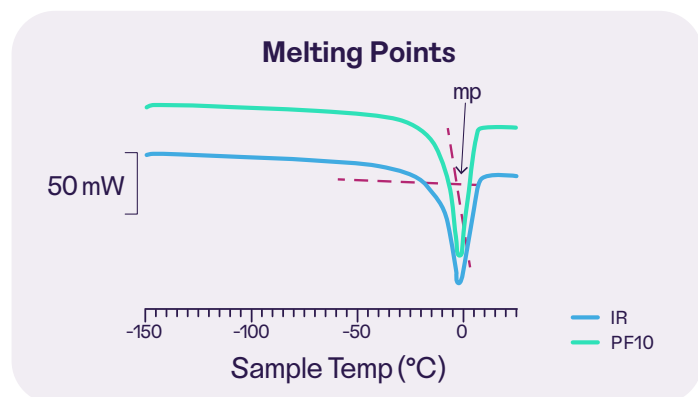
Recovery of iPSCs

Pluripotent stem cell performance when cryopreserved with PluriFreeze and the industry reference results in similar cell viability, recovery, doubling times, and expansion fold post-thaw.



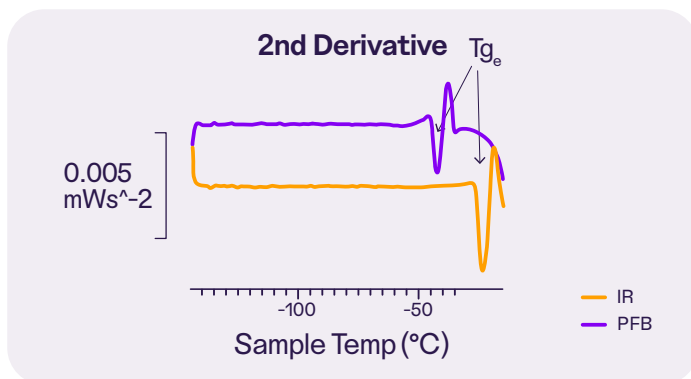
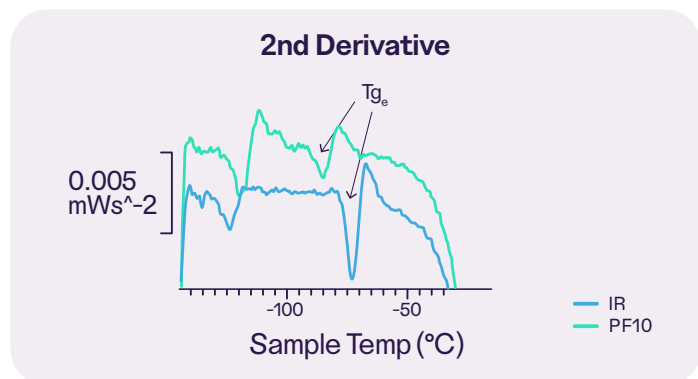
Thermal Characteristics: Melting Point

The charts below show the melting points of PluriFreeze compared to the industry reference (IR), determined by Differential Scanning Calorimetry (DSC). Both products — PluriFreeze Base and PF10 — have similar thermal characteristics, indicating the easy implementation of PluriFreeze in existing protocols.



Thermal Characteristics: Glass Transition

The glass transition temperature (T_g) of PluriFreeze is compared to the industry reference (IR) as determined by Differential Scanning Calorimetry (DSC). Both products — PluriFreeze Base and PF10 — have similar thermal characteristics, indicating the easy implementation of PluriFreeze into existing protocols.



Cell Recovery: NK Cells (KHYG1)

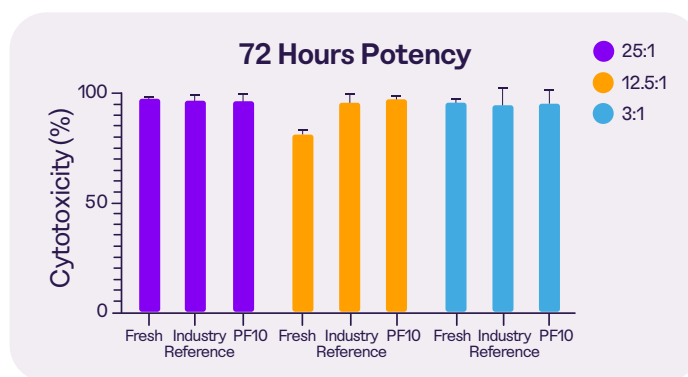
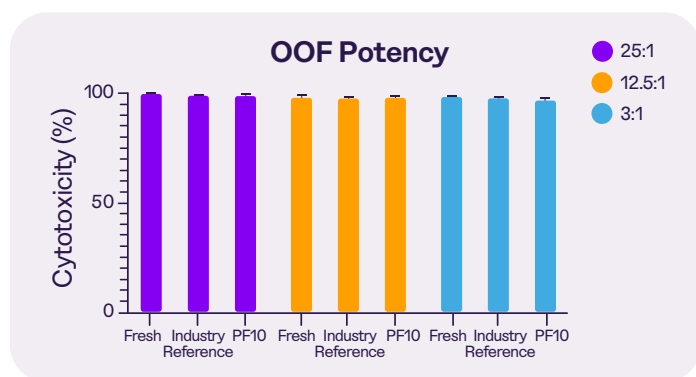
Cryopreservation of natural killer (NK) cells using PluriFreeze PF10 supports similar levels of surface marker expression post-thaw compared to the industry reference.

Out of Freeze (OOF)	CD3+ Cells	CD16+ Cells	CD56+ Cells
Proliferating	2.3%	0.7%	94.8%
PF10	0.8 ± 0.1%	0.4 ± 0.1%	97.1 ± 0.4%
Industry Reference	0.9 ± 0.1%	0.5 ± 0.1%	97.0 ± 0.3%

OOF 72 Hours	CD3+ Cells	CD16+ Cells	CD56+ Cells
Proliferating	1.8%	0.4%	97.5%
PF10	1.0 ± 0.6%	0.5 ± 0.2%	98.5 ± 0.4%
Industry Reference	0.5 ± 0.1%	0.7 ± 0.1%	98.1 ± 0.2%

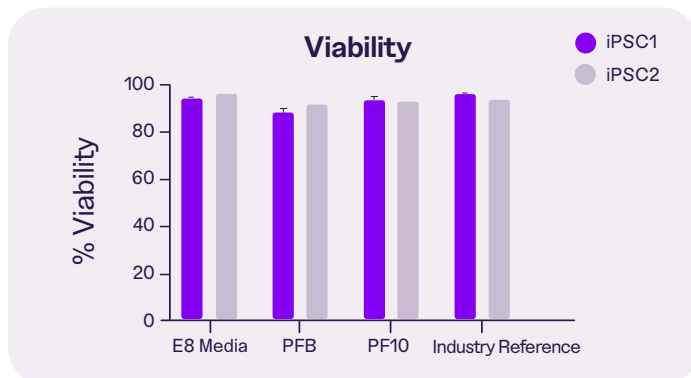
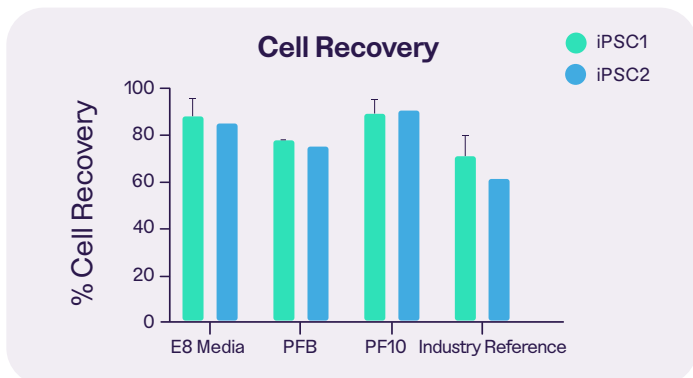
Mean ± SD
N = 1-3

Cryopreservation of NK cells using PluriFreeze PF10 resulted in good viable and functional recovery at thaw, persisting for 72 hours.



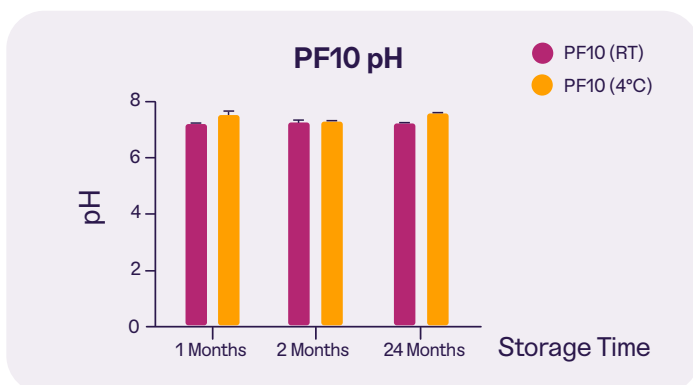
Cell Stability in Cryomedia Pre-Freeeze

Simulated testing of cell stress included cell harvest, centrifugation to remove media, resuspension and 5-minute holds in various media types, centrifugation to remove supernatant, resuspension in culture media, and cell counting.



Stability

PluriFreeze is stable for up to two years at 4°C and at room temperature, with no change in pH or solute precipitation. PluriFreeze is intended to be stored and used at 2-8°C. Excursions in temperature for shipping and storage to room temperature are acceptable.



Questions?
We're here to help.

Get in touch at info@teknova.com
or 1.800.209.4488.

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