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COMPLETE GUIDE FOR YOUR CELL CRYOPRESERVATION

Enhance your cryopreservation efficiency with our top tools from

PAN BIOTECH

CORNING

OVERVIEW

CRYOPAN II

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Cryopan II,

CHEMICALLY DEFINED AND PROTEIN-FREE FREEZING MEDIUM

Cryopan II is a serum-free and protein-free cryopreservation medium for the cryopreservation of a broad range of cell types.
It ensures optimal cell preservation without the interference of human or animal components.

Key Features:

- **Versatility:** Suitable for freezing both adherent and suspension cells, Cryopan II as specially developed cryopreservation medium can be used for various cell types and culture conditions.
- **Composition:** A chemically defined formulation of salts, sugar, 10% DMSO, and additional antifreeze-substances, free from animal or human components.
- **Special Advantages:** Its serum-free formulation is particularly well-suited for preserving serum-free cultured cells. The optimized composition guarantees high cell viability post-thawing.

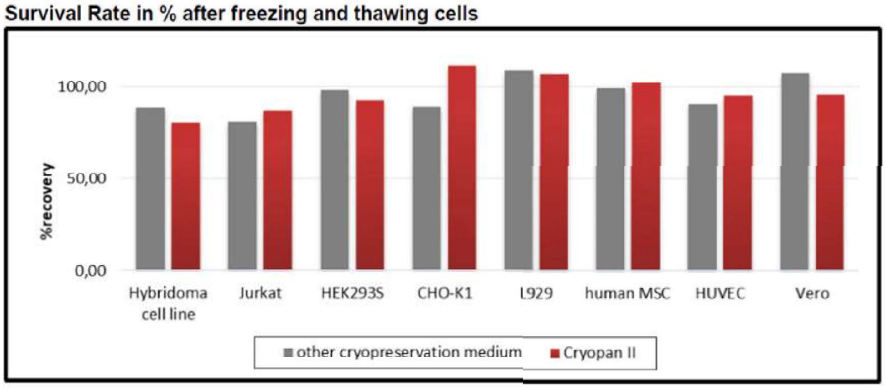
Applications:

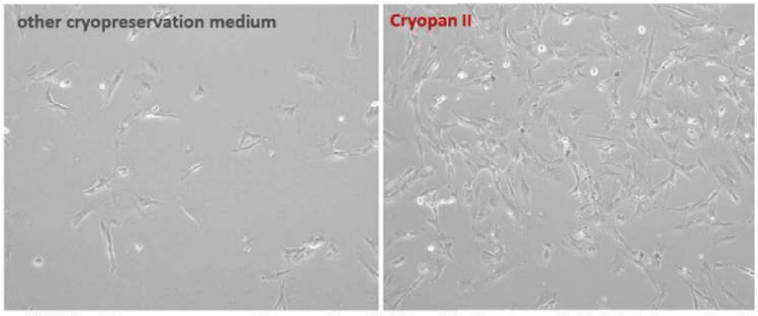
Cryopan II is suitable for a broad range of applications:

- Stem Cell Research and Therapy
- Tissue Engineering
- Cellular Therapies
- Biobanking
- Gene Therapy
- Research and Development
- Vaccine Production

Liquid / Powder:	liquid
Product Category:	Cryo Preservation
Size:	10ml, 50ml,100ml, 500ml
Sterile:	Yes
Storage Temprature:	-20°C

Survival Rate in % after freezing and thawing cells





Primary MSC in other cryopreservation medium (left) and in **Cryopan II** (right) 3 days after thawing.

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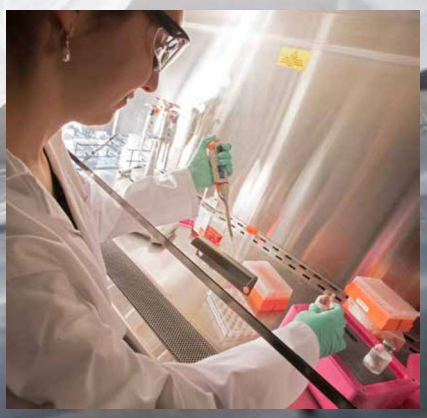
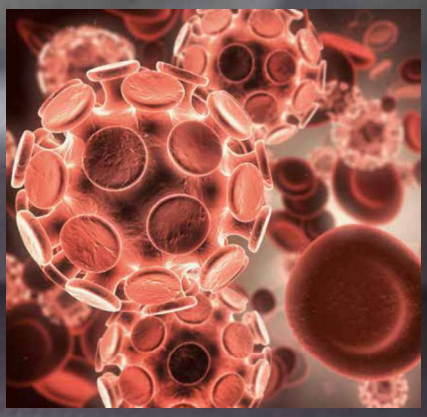
Corning® CoolBox™ and CoolRack® Consumable Compatibility Guide

A family of solutions that enables consistent, reproducible, and standardized sample handling





CORNING

Corning® CoolBox™ for Consistent and Reproducible Cooling

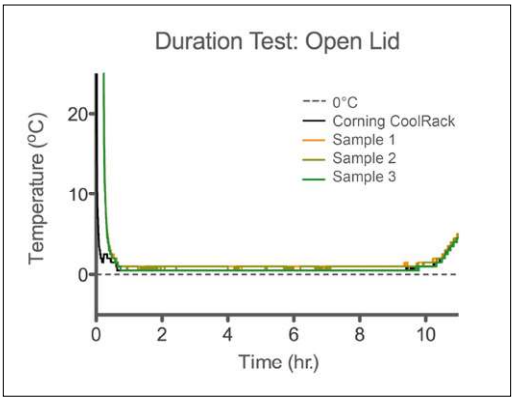
Corning's sample cooling and heating solutions enable consistent, reproducible, standardized temperature control. These solutions address the pitfalls of temperature regulation and reduce contamination risk, keeping your samples cool and stable while you work.

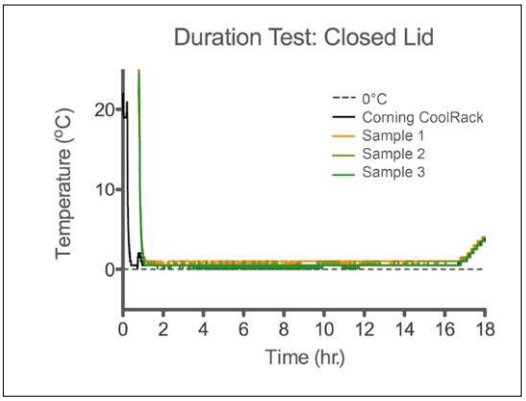
The family of solutions is flexible so you can select the right components for your application and working style. Pair a Corning CoolBox system and Corning CoolRack® thermo-conductive modules together for an ice-free cooling option or place a CoolRack on ice, dry ice, or liquid nitrogen in a Corning ice bucket or pan for a more traditional solution.

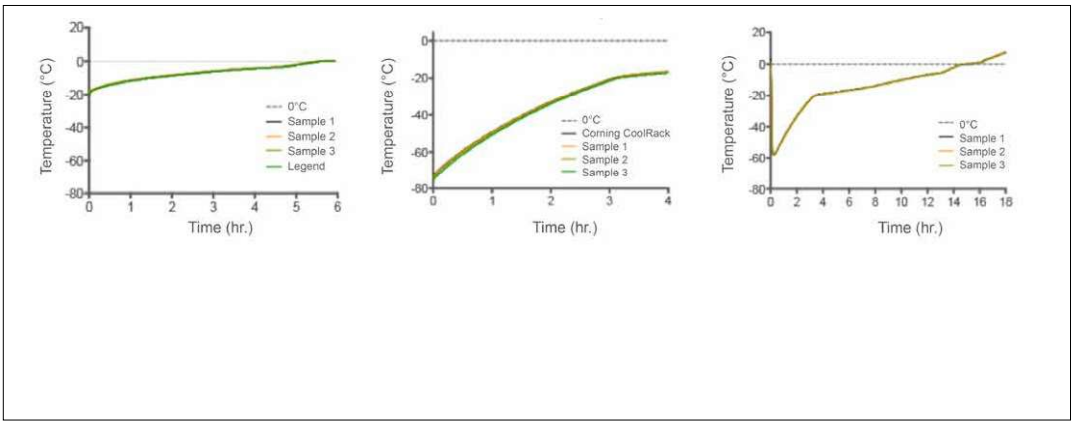
	Corning CoolRack with a Corning CoolBox XT/2XT	Corning CoolRack with a Corning XT Starter	Corning CoolRack in a Corning Ice Bucket
Description	Ideal and versatile benchtop ice-free cooling system that is designed to be compatible with most Corning CoolRacks. These systems offer the longest cooling times.	An open-platform cooler that accommodates most Corning CoolRack modules, making it a versatile and flexible tool for a variety of applications.	A solution that can be used with ice, dry ice, liquid nitrogen, or heat sources while standardizing temperature consistency.
Benefits	›› Ice-free, reduces contamination risk ›› Hours of benchtop cooling at consistent temperatures ›› Includes lid, which allows the temperature to stay consistently cold for a longer period of time	›› Use two XT starters side-by-side to accommodate larger size formats	›› Improved temperature stability over ice alone ›› No "drowning" samples ›› No direct contact to ice, which reduces contamination risk
Applications	›› Ideal for use under the hood in an aseptic environment, where using ice may pose a contamination risk. ›› Also ideal for use with temperature-sensitive reagents, ECMs, etc.		Ideal for benchtop application in a non-aseptic environment that still requires temperature control.
0°C to 4°C cooling with cooling core	10 hours without the lid 16 hours with the lid	4 hours	N/A
-20°C freezing with freezing core without the lid	5 hours	5 hours	N/A
-20°C freezing with lid closed	8 hours with the lid	N/A	N/A

Performance Data

Cooling and freezing duration of Corning®CoolBox™systems with a Corning CoolRack® sample module insert.

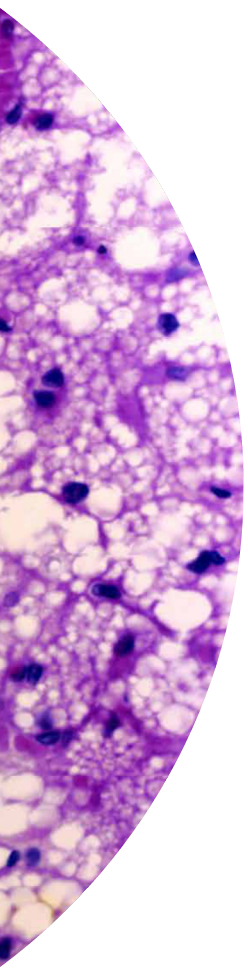






Corning CoolBoxsystem featured with Corning CoolRackthermo-conductive module.

Corning® CoolRack®for Stable Temperature Control



Corning CoolRacksarethermo-conductive modules that when placed directly onto a temperature sourcebetween -196°Cto >100°C,will rapidly equilibrate to that temperature. CoolRackmodules ensure ±0.1°Ctemperature uniformity acrossall tubes and plates when cooling, snap-freezing, heating, or thawing.

This temperature stability helps reducethe variability originating from tubes, plates, or wells placed directly into ice, dry ice, alcohol baths, water baths, and other cooling sources. Regardlessofyour desired configuration, you can feel confident that you will keep your sample temperature stable and set your researchup for success—rightfrom the start.

Also available from Corning are ThermalTray thermo-conductive platforms, which support Corning CoolRackmodules in liquid temperature sourcessuch as melting ice, water baths, and liquid nitrogen. Made of the same highly conductive alloy as Corning CoolRackand Corning CoolSink®modules, ThermalTray platforms conduct the sourcetemperature to the CoolRackor CoolSinkand, ultimately, to your samples.

Visit **www.corning.com/lifeciences**formore information on Corning CoolRackand Corning CoolSinkversatility and performance.

Increased Temperature Consistency

Non-uniform Plate Cooling with Crushed Ice

Final equilibrium well temperature for a 96-well flat bottom microplate in direct contact with crushed ice. Colors represent 0.5°C temperature intervals of the corresponding plate wells from 4.5°C to 7.4°C.

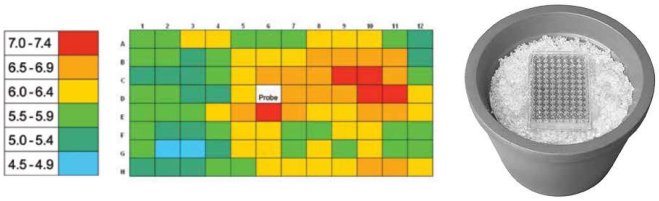


Plate directly on crushed ice, the plate does not reach 4°C in any of the wells and well-to-well temperature is uneven.

Uniform Plate Cooling with Corning®CoolSink™XT 96F Module

Corning CoolSink XT 96F on ice. Colors represent 0.5°C temperature intervals of the corresponding plate wells ranging from 2.5°C to 4.4°C. The white cell represents the well that was fitted with the thermocouple probe.

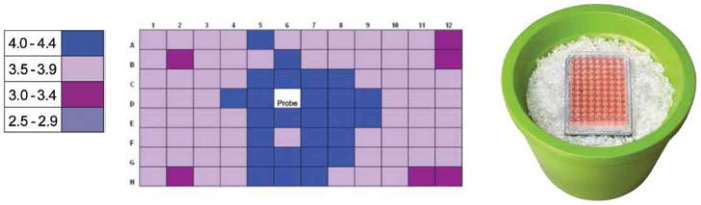


Plate placed on Corning CoolSink module and then placed on ice shows more uniform well-to-well temperature and all wells at or below 4°C. (Blue center plate wells are slightly warmer due to curvature of the underside of the plate).

Published in Biotechniques, November 2010.

Build an Ideal Cooling Solution for Your Consumable and Sample Type

Corning®CoolBox™features a modular design that allows you to build a custom solution specific for your consumable and sample needs.

Build your cooling solution – it's as easy as 1-2-3.

1 – First select your consumable type.

2 – Select a Corning CoolRack®module based on your consumable and sample quantity.

3 – Match with the appropriate ice-free Corning CoolBoxor ice bucket/pan solution.

Axygen® Microcentrifuge Tubes

1. Choose a consumable:

Cat. No.	Description
MCT-150-C	1.5 mL microcentrifuge tubes
MCT-150-C-S	1.5 mL microcentrifuge tubes
MCT-150-L-C	1.5 mL microcentrifuge tubes
MCT-200-C	2 mL microcentrifuge tubes
MCT-200-C-S	2 mL microcentrifuge tubes
MCT-200-L-C	2 mL microcentrifuge tubes
SCT-050-C	0.5 mL microcentrifuge tubes

Microcentrifuge tubes listed are Corning suggested compatible consumables; however, Corning CoolRack is also compatible with most major microcentrifuge tube brands. Visit **www.corning.com/lifesciences** to get complete product information.

2. Choose a Corning CoolRack:

Corning CoolRack Cat. No.	Compatible Axygen Microcentrifuge Tube	No. of Wells	SBSCompatible
Round Well			
432034	1.5 and 2 mL	6	No
432035	1.5 and 2 mL	6	No
432036	1.5 and 2 mL	6	No
432037	1.5 and 2 mL	15	No
432038	1.5 and 2 mL	15	No
432039	1.5 and 2 mL	15	No
432040	1.5 and 2 mL	24	Yes
432041	1.5 and 2 mL	30	No
432042	1.5 and 2 mL	30	No
432043	1.5 and 2 mL	30	No
432044	1.5 and 2 mL	90	No
V-Well			
432045	1.5 and 2 mL	96	No
432046	0.5 mL	30	No
432047	1.5 mL	15	No
432048	1.5 mL	30	No

3. Choose a Corning® CoolBox™ Ice-free Solution or a Corning Ice Bucket

Ice-free Corning CoolBox				Corning Ice Buckets and Pans						
										
Corning CoolRack Cat. No.	XT Starter	CoolBox XT	CoolBox 2XT	9L Ice pan	9L Ice pan with lid and handles	4L Ice pan	4L Ice pan with lid and handles	1L Ice Pan	4L Round bucket with lid	2.5L Round bucket with lid
	Number of Corning CoolRacks that can be accommodated			Number of Corning CoolRacks that can be accommodated						
432034	4	4	8	25	25	11	11	2	4	5
432035	4	4	8	25	25	11	11	2	4	5
432036	4	4	8	25	25	11	11	2	4	5
432037	1	1	4	9	9	3	3	1	2	2
432038	1	1	4	9	9	3	3	1	2	2
432039	1	1	4	9	9	3	3	1	2	2
432040	1	1	2	5	5	2	2	–	1	1
432041	1	–	1	4	4	2	2	–	1	1
432042	1	–	1	4	4	2	2	–	1	1
432043	1	–	1	4	4	2	2	–	1	1
432044	–	–	–	1	1	1	1	–	–	–
432045	–	–	–	1	1	1	1	–	–	–
432046	1	–	1	4	4	2	2	–	1	1
432047	1	1	4	9	9	3	3	1	2	2
432048	1	–	1	4	4	2	2	–	1	1

Please see page 13 for ice bucket and pan complete ordering information and color options. Corning CoolBox is also available in several color options. Contact your Corning Account Manager or visit **www.corning.com/lifesciences** to view all available options.

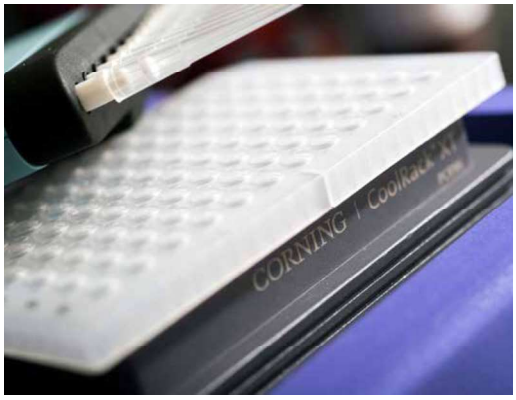
Corning ice buckets and pans

Build an Ideal Cooling Solution for Your Consumable and Sample Type

PCR Tubes, Strips, and Microplates

1. Choose a consumable:

Cat. No.	Description
Tube	
PCR-02-C	0.2 mL tube
Strips	
PCR-0208-CP-C	0.2 mL strip tubes
PCR-0208-C	0.2 mL strip tubes
PCR-0208-AF-C	Strip tubes
PCR-0208-AD-C	Strip tubes
Microplates	
PCR-96-HS-AC-C	96-well microplate
PCR-384M2-C	384-well microplate
PCR-384-C	384-well microplate



Products listed are Corning suggested compatible consumables; however, Corning® CoolRack® is also compatible with most major centrifuge tube and PCR microplate brands. Visit **www.corning.com/lifesciences** to get complete product information.

2. Choose a Corning CoolRack:

Corning CoolRack Cat. No.	Compatible PCR Consumable	SBS Compatible
432053	96-well PCR microplate, PCR12-strip tubes, or microcentrifuge tubes	Yes
432054	Holds 12 1.5 or 2.0 mL microcentrifuge tubes or PCR6-strip tubes	Yes
432055	384-well PCR microplate	Yes

3. Choose a Corning CoolBox™ Ice-free Solution or a Corning Ice Bucket

Ice-free Corning CoolBox				Corning Ice Buckets and Pans						
	XT Starter	CoolBox XT	CoolBox 2XT	9L Ice pan	9L Ice pan with lid and handles	4L Ice pan	4L Ice pan with lid and handles	1L Ice Pan	4L Round bucket with lid	2.5L Round bucket with lid
Corning CoolRack Cat. No.	Number of Corning CoolRacks that can be accommodated			Number of Corning CoolRacks that can be accommodated						
432053	1	1	2	5	5	2	2	–	1	1
432054	1	1	2	5	5	2	2	–	1	1
432055	1	1	2	5	5	2	2	–	1	1

Please see page 13 for ice bucket and pan complete ordering information and color options. Corning CoolBox is also available in several color options. Contact your Corning Account Manager or visit **www.corning.com/lifesciences** to view all available options.

Centrifuge Tubes

1. Choose a consumable:

Cat. No.	Description
5 mL	
MCT-500-C	Axygen®MaxyClear Snaplockmicrocentrifuge tube
15 mL	
430791	Corning®centrifuge tube
352096	Falcon®high clarity conical centrifuge tube
50 mL	
430829	Corning conical centrifuge tubes
352070	Falconhigh clarity conical centrifuge tube
250 mL	
430776	Corning centrifuge tube

Products listed are Corning suggested compatible consumables, however Corning CoolRack® is also compatible with most centrifuge tube brands. Visit **www.corning.com/lifesciences** to get complete product information.

2. Choose a Corning CoolRack:

Corning CoolRack Cat. No.	Compatible PCRConsumable	SBSCompatible
432060	5 mL centrifuge tube	Yes
432061	15 mL centrifuge tube	No
432068	15 mL centrifuge tube	No
432062	50 mL centrifuge tube	No
432063	250 mL centrifuge tube	No
432064	250 mL EasyGrip storage bottle	No

3. Choose a Corning CoolBox™ Ice-free Solution or a Corning Ice Bucket

Ice-free Corning CoolBox | **Corning Ice Buckets and Pans**


Corning CoolRack Cat. No.	XT Starter	CoolBox XT	CoolBox 2XT	9L Ice pan	9L Ice pan with lid and handles	4L Ice pan	4L Ice pan with lid and handles	4L Round bucket with lid	2.5L Round bucket with lid
	Number of Corning CoolRacks that can be accommodated			Number of Corning CoolRacksthat can be accommodated					
432060	1	1	2	5	5	2	2	1	1
432061	1	1	2	6	6	2	2	1	1
432068	1	1	2	5	5	2	2	1	1
432062	1	1	2	6	6	2	2	1	1
432063	1	1	2	6	6	2	2	1	1
432064	1	1	2	6	6	2	2	1	1

Pleaseseepage 13 for ice bucket and pan complete ordering information and color options. Corning CoolBoxis also available in several color options. Contact your Corning Account Manager or visit **www.corning.com/lifesciences**toview all available options.

Build an Ideal Cooling Solution for Your Consumable and Sample Type

Multiwell Microplates or Reservoirs

1. Choose a consumable:

Cat. No.	Description
U-bottom microplates	
3367	Corning®96-well clear, not treated microplate, without lid
3360	Corning 96-well clear, TC-treated microplate, without lid, sterile
3789	Corning 96-well white, not treated microplate, without lid
3792	Corning 96-well black, not treated microplate, without lid
Flat-bottom plates	
3596	Corning 96-well clear, TC-treated microplate, with lid
3516	Costar®6-well clear, TC-treated multiwell plate
3512	Costar 12-well clear, TC-treated multiwell plate
3524	Costar 24-well clear, TC-treated multiwell plate
353224	Falcon®6-well clear, TC-treated multiwell plate, with lid
353225	Falcon 12-well clear, TC-treated multiwell plate, with lid
353226	Falcon 24-well clear, TC-treated multiwell plate, with lid
353075	Falcon 96-well clear, TC-treated microplate, with lid
Reagent Reservoirs	
RES-V-50	Axygen®50 mL disposable reagent reservoir
RES-V-50-S	Axygen 50 mL disposable reagent reservoir, sterile
RES-V-50-SI	Axygen 50 mL disposable reagent reservoir, individually wrapped, sterile

Products listed are Corning suggested compatible consumables; however, Corning CoolRack or CoolSink® are also compatible with most multiwell plate brands. Visit **www.corning.com/lifesciences** to get complete product information.

2. Choose a Corning CoolRack® or CoolSink:

Corning CoolRack/ CoolSink Cat. No.	Compatible Microplate or Reservoir Consumable	SBS Compatible
432139	Axygen 50 mL disposable reagent reservoir	No
432070	Flat bottom microplate	Yes
432071	96-well U-bottom microplate	Yes
432072	55 mL reagent reservoir	No

3. Choose a Corning CoolBox™ Ice-free Solution or a Corning Ice Bucket

	Ice-free Corning CoolBox			Corning Ice Buckets and Pans					
Corning CoolSink Cat. No.	XT Starter	CoolBox XT	CoolBox 2XT	9L Ice pan	9L Ice pan with lid and handles	4L Ice pan	4L Ice pan with lid and handles	4L Round bucket with lid	2.5L Round bucket with lid
	Number of Corning CoolSinks that can be accommodated			Number of Corning CoolSinks that can be accommodated					
432070	1	1	2	5	5	2	2	1	1
432071	1	1	2	5	5	2	2	1	1
432072	–	–	1	6	6	1	1	1	1

Please see page 13 for ice bucket and pan complete ordering information and color options. Corning CoolBox is also available in several color options. Contact your Corning Account Manager or visit **www.corning.com/lifesciences** to view all available options.

2 mL Cryogenic Vials

1. Choose a consumable:

Cat. No.	Description
External Thread, Self-standing, Round-bottom	
430659	2 mL cryogenic vial
8671	2 mL cryogenic vial, 1D and 2D bar coded
8676	2 mL cryogenic vial, 1D bar coded
Internal Thread, Self-standing, Round-bottom	
430488	2 mL cryogenic vial
8670	2 mL cryogenic vial, 1D and 2D bar coded
8672	2 mL cryogenic vial, 1D bar coded

Products listed are Corning suggested compatible consumables; however, Corning CoolRack® is also compatible with most cryogenic vial brands. Visit **www.corning.com/lifesciences** to get complete product information.

2. Choose a Corning CoolRack:

Corning CoolRack Cat. No.	Number of Wells
432049	15
432050	24, SBS-compatible
432051	45
432052	30
432056	96 (no Corning consumables to go with 0.5 mL 2D tubes)
432057	96 (no Corning consumbales to go with 1.4 mL 2D tubes)

3. Choose a Corning CoolBox™ Ice-free Solution or a Corning Ice Bucket

Ice-free Corning CoolBox | **Corning Ice Buckets and Pans**

Corning CoolRack Cat. No.	XT Starter	CoolBox XT	CoolBox 2XT	9L Ice pan	9L Ice pan with lid and handles	4L Ice pan	4L Ice pan with lid and handles	1L Ice Pan	4L Round bucket with lid	2.5L Round bucket with lid
	Number of Corning CoolRacks that can be accommodated			Number of Corning CoolRacks that can be accommodated						
432049	1	1	4	9	9	3	3	1	2	2
432050	1	1	2	5	5	2	2	–	1	1
432051	–	–	1	3	3	1	1	–	1	1
432052	1	–	1	4	4	2	2	–	1	1
432056	1	1	2	5	5	2	2	–	1	1
432057	1	1	2	5	5	2	2	–	1	1

Please see page 13 for ice bucket and pan complete ordering information and color options. Corning CoolBox is also available in several color options. Contact your Corning Account Manager or visit **www.corning.com/lifesciences** to view all available options.

Build an Ideal Cooling Solution for Your Consumable and Sample Type

5 mL Cryogenic Vials

1. Choose a consumable:

Cat. No.	Description
430663	5 mL cryogenic vial, round bottom, external thread, self-standing
430656	5 mL cryogenic vial, round bottom, internal thread, self-standing

Products listed are Corning suggested compatible consumables; however, Corning®CoolRack® is also compatible with most cryogenic vial brands. Visit **www.corning.com/lifesciences** to get complete product information.

2. Choose a Corning CoolRack:

Corning CoolRack Cat. No.	Number of Wells	SBS Compatible
432067	9	No

3. Choose a Corning CoolBox™ Ice-free Solution or a Corning Ice Bucket

	Ice-free Corning CoolBox			Corning Ice Buckets and Pans					
									
Corning CoolRack Cat. No.	XT Starter	CoolBox XT	CoolBox 2XT	9L Ice pan	9L Ice pan with lid and handles	4L Ice pan	4L Ice pan with lid and handles	4L Round bucket with lid	2.5L Round bucket with lid
	Number of Corning CoolRacks that can be accommodated			Number of Corning CoolRacks that can be accommodated					
432067	1	1	2	6	6	2	2	1	1
	Requires XT or 2XT extension collar								

Please see page 13 for ice bucket and pan complete ordering information and color options. Corning CoolBox is also available in several color options. Contact your Corning Account Manager or visit **www.corning.com/lifesciences** to view all available options.

Ordering Information

Corning Ice Buckets and Pans

Description	Dimensions (Lx W x H)	Purple	Lime Green	Orange	Pink	Blue	Green	Red
Mini 1L ice pan	15.9 x 15.9 x 9.5 cm	432121	432119	432118	432120	432116	432115	432117
Midi 4L ice pan	31.1 x 22.2 x 11.4 cm	432109	432107	432106	432108	432104	432103	432105
Midi 4L ice pan with lid	35.0 x 22.5 x 11.4 cm	432114	432112	432111	432113	432110	–	–
Maxi 9L ice pan	40.6 x 31.8 x 11.4 cm	432099	432097	432096	432098	432094	432093	432095
Maxi 9L ice pan with lid	44.5 x 32.5 x 11.4 cm	432102	432101	–	–	432100	–	–
Round 2.5L ice bucket with lid	Top diameter: 24.1 cm Height: 12.1 cm	432135	432133	432132	432134	432129	432130	432131
Round 4L ice bucket with lid	Top diameter: 26.0 cm Height: 18.4 cm	432128	432126	432125	432127	432123	432122	432124

Corning® CoolBox™XT Modules

Cat. No.	Description	Contains	Qty/Cs
432021	CoolBox XT, purple	Holder and one Cooling Core	1
432022	CoolBox XT, green	Holder and one Cooling Core	1
432023	CoolBox XT, orange	Holder and one Cooling Core	1
432024	CoolBox XT, pink	Holder and one Cooling Core	1
432025	CoolBox 2XT, purple	Holder and two Cooling Cores	1
432026	CoolBox 2XT, green	Holder and two Cooling Cores	1
432027	CoolBox 2XT, orange	Holder and two Cooling Cores	1
432028	CoolBox 2XT, pink	Holder and two Cooling Cores	1

Corning CoolBox Accessories

Cat. No.	Description	CoolBox XT Starter 432014	CoolBox XT 432021	CoolBox 2XT 432025
432081	XT Cooling core	1	1	2
432082	XT Freezing core	1	1	2
432083	Extension collar for CoolBox XT, purple	–	1	–
432084	Extension collar for CoolBox XT, green	–	1	–
432085	Extension collar for CoolBox XT, orange	–	1	–
432086	Extension collar for CoolBox XT, pink	–	1	–
432087	Extension collar for CoolBox 2XT, purple	–	–	1
432088	Extension collar for CoolBox 2XT, green	–	–	1
432089	Extension collar for CoolBox 2XT, orange	–	–	1
432090	Extension collar for CoolBox 2XT, pink	–	–	1

Corning CoolRack®and CoolSink®Plate and Reservoir Modules

Cat. No.	Description	CoolBox XT Starter 432014	CoolBox XT 432021	CoolBox 2XT 432025
432139	CoolRack LX50	–	–	1
432070	CoolSink XT 96F	1	1	2
432071	CoolSink XT 96U	1	1	2
432072	CoolSink LX55	–	–	1

Ordering Information (Continued)

Corning®CoolRack®M – Microcentrifuge Tube Modules

Cat. No.	Description	ThermalTray ThermalTray SLP 432073	ThermalTray ThermalTray LP 432074	ThermalTray ThermalTray HP 432075
432034	CoolRack M6, gray	12	12	12
432035	CoolRack M6, green	12	12	12
432036	CoolRack M6, orange	12	12	12
432037	CoolRack M15, gray	4	4	4
432038	CoolRack M15, green	4	4	4
432039	CoolRack M15, orange	4	4	4
432040	CoolRack XT M24	3	3	3
432041	CoolRack M30, gray	2	2	2
432042	CoolRack M30, green	2	2	2
432043	CoolRack M30, orange	2	2	2
432044	CoolRack M90	1	1	1
432045	CoolRack M96 ID	1	1	1

Corning CoolRack M-PF – Conical Microcentrifuge Tube Modules with Profile-fit Wells

Cat. No.	Description	ThermalTray ThermalTray SLP 432073	ThermalTray ThermalTray LP 432074	ThermalTray ThermalTray HP 432075
432046	CoolRack 500 µL M30-PF	2	2	2
432047	CoolRack M15-PF	4	4	4
432048	CoolRack M30-PF	2	2	2

Corning CoolRack CF – Cryogenic Vial and FACS Tube Modules

Cat. No.	Description	ThermalTray ThermalTray SLP 432073	ThermalTray ThermalTray LP 432074	ThermalTray ThermalTray HP 432075
432049	CoolRack CF15	4	4	4
432050	CoolRack XT CFT24	3	3	3
432051	CoolRack CF45	1	1	1
432052	CoolRack CFT30	2	2	2

Corning CoolRack PCR – PCR Tube and Plate Modules

Cat. No.	Description	ThermalTray ThermalTray SLP 432073	ThermalTray ThermalTray LP 432074	ThermalTray ThermalTray HP 432075
432053	CoolRack XT PCR96	3	3	3
432054	CoolRack XT M-PCR	3	3	3
432055	CoolRack XT PCR384	3	3	3

Corning CoolRack – Tall Tube Modules

Cat. No.	Description	ThermalTray ThermalTray SLP 432073	ThermalTray ThermalTray LP 432074	ThermalTray ThermalTray HP 432075
432060	CoolRack XT 5mL	3	3	3
432061	CoolRack 15 mL	3	3	3
432062	CoolRack 50 mL	3	3	3
432063	CoolRack 250 mL-PF	3	3	3
432064	CoolRack 250 mL-B	3	3	3
432068	CoolRack L	3	3	3

Ordering Information (Continued)

Corning® CoolRack® and CoolSink® Plate and Reservoir Modules

		ThermalTray		
Cat. No.	Description	ThermalTray SLP 432073	ThermalTray LP 432074	ThermalTray HP 432075
432139	CoolRack LX50	4	4	4
432070	CoolSink XT 96F	3	3	3
432071	CoolSink XT 96U	3	3	3
432072	CoolSink LX55	4	4	4

For more specific information on claims, visit the Certificates page at **www.corning.com/lifesciences**.

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Corning® CoolCell® Containers

CORNING

Corning CoolCell alcohol-free cell freezing containers ensure a standardized controlled-rate of freezing of -1°C/minute cell freezing in a -80°C freezer—without alcohol or any fluids. CoolCell cryogenic containers are proven for use with a variety of cell types including stem cells, primary cells, PBMC, cell lines, insect cells, yeast, and others. The proprietary Corning CoolCell technology utilizes a thermo-conductive alloy core and highly-insulative outer material to control the rate of heat removal and provide reproducible cell cryopreservation. CoolCell units are easy to use and deliver results comparable to expensive programmable freezers at a fraction of the cost.

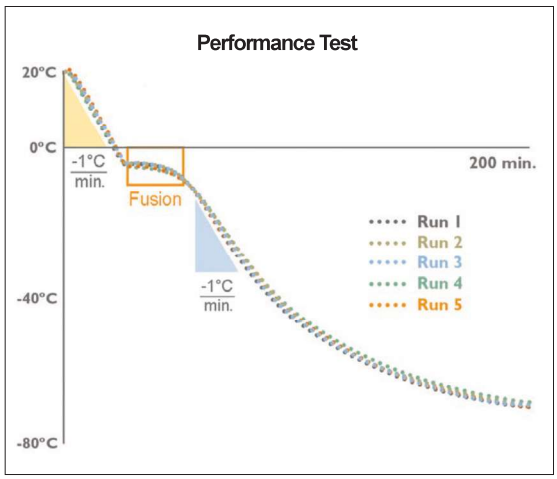
Features

- Ease of use
- Alcohol and fluid-free freezing
- Lower cost of use than alcohol-based devices
- Available in purple, green, orange, and pink.

Better than IPA

Corning CoolCell Container	Isopropanol (IPA) Container
No alcohol • No fluids • No pre-cooling • Saves 12L/unit of IPA per year	**Requires isopropanol** • Replace alcohol after every 5 uses • Track number of uses • Pre-cool alcohol in refrigerator
No variability • All vials have uniform freeze rate • Radially symmetric design ensures vial consistency	**Inconsistent freeze rate** • Alcohol degradation induces variability • Two circles of wells; two freeze rates
No on-going cost • No alcohol purchase or disposal	**Approximately $350/year** • Change alcohol weekly • Hazardous waste disposal
No stuck lids • Ergonomic lid comes off easily when frozen • Not cold to the touch when removing from the -80°C freezer	**Difficult to handle** • Screwcap is difficult to remove when frozen • Frozen unit is slippery and cold to the touch
Quick re-use time • Ready to use again after five minutes	**Wait between runs** • Takes >1 hour for the alcohol to warm-up

Corning CoolCell Reproducibility



A temperature probe was placed into a 2.0 mL cryogenic vial containing 1.0 mL of water, and the tube was inserted into a room temperature Corning CoolCell. The CoolCell was placed into a -80°C freezer, and the temperature rate and profile was recorded over a 3-hour period. The test was repeated 5 consecutive times. Corning CoolCell generated identical fusion time and cooling profiles over five consecutive freeze cycles.

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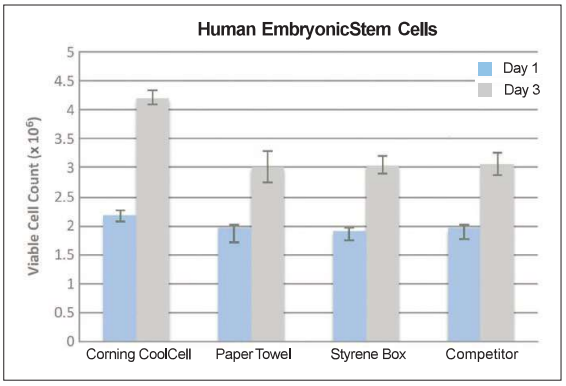
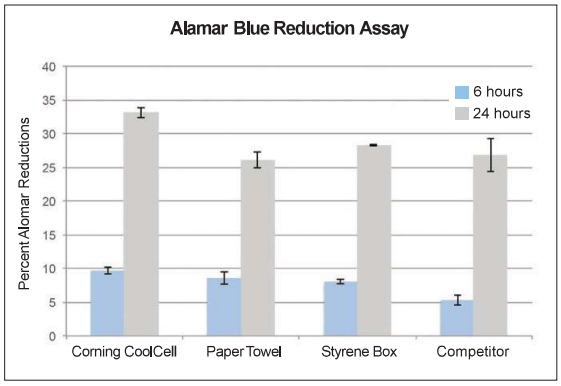
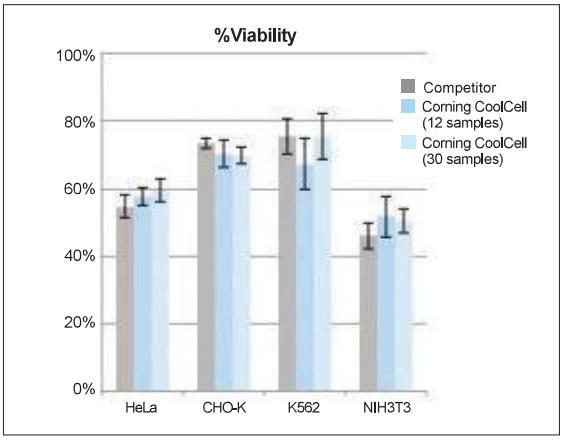
Corning® CoolCell®Performance vs. IPA Container



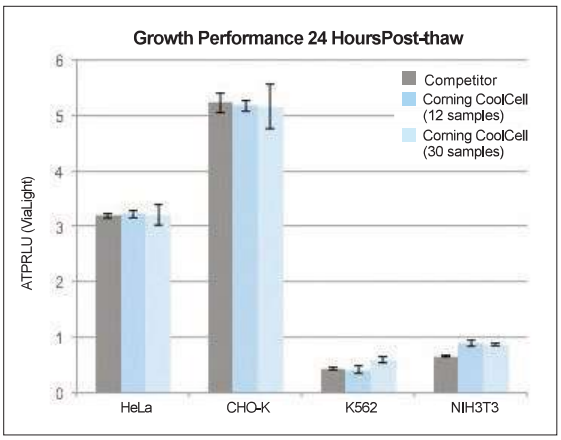
Human embryonic stem cells, RC-10,were frozen using the technique indicated, thawed after 2 weeksin LN_2, and counted immediately (Day 1) or after 3 daysof growth (Day 3).



Alamar blue reduction assayfor proliferation assessment showed cells frozen in the Corning CoolCellcontainer grew quicker, leading to more total cells.

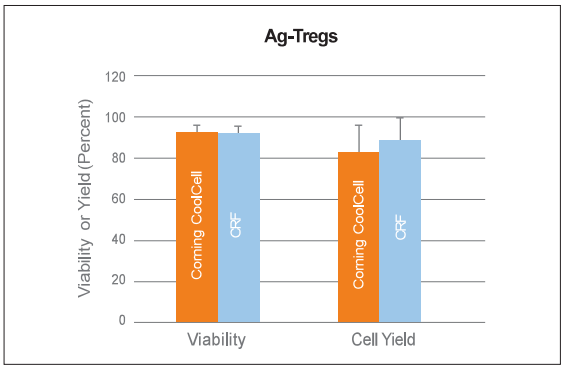


Corning CoolCell 12-well, CoolCell FTS3030-well, or competitor freezing containers were used to freeze all four cell lines. Identical transfection efficiencies and viabilities were observedafter thawing.

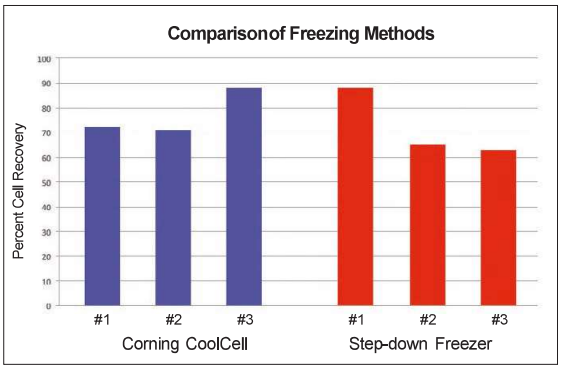


Identical growth of cellswas observed24 hours post-thaw.

Corning CoolCell Performance vs. Programmable Freezer

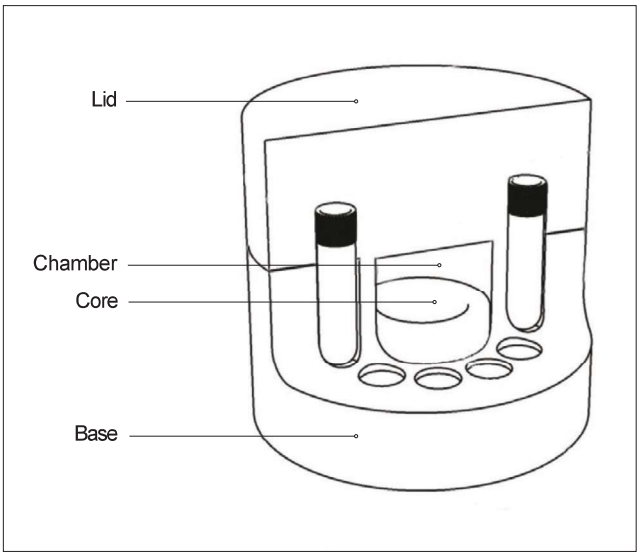


Effects of freezing on antigen-specific Treg (Ag-Treg) cell therapy products; Ag-Tregs (n = 6) were frozen at concentration of 1 to 10 x 10^6 cells/mL using the Corning CoolCell freezing device or controlled-rate freezer (CRF)with a freezing rate of -1°C/min. Viability and absolute viable cell count of thawed Ag-Treg cell therapy products were evaluated by flow cytometry. (Data generated by TxCellSA)

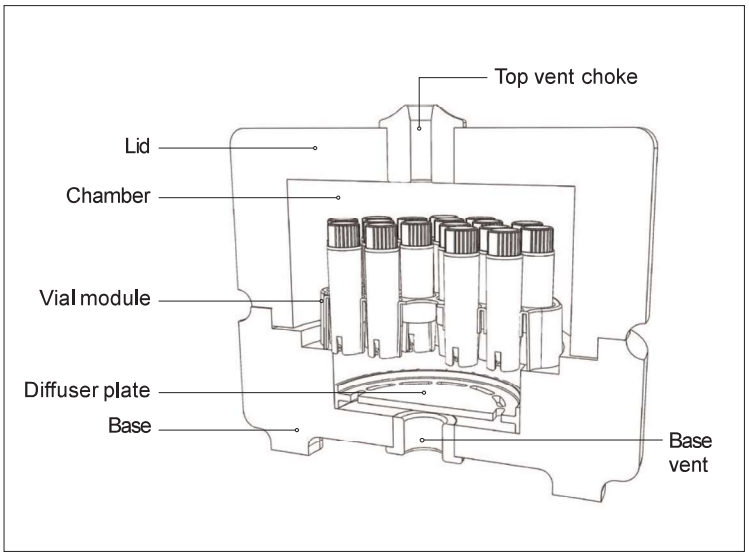


Graph comparing percent of cell recovery after freezing with the Corning CoolCellfreezing device (blue) versus freezing using a programmable step-down freezer (red) in 3 different samplesat high cell concentration. Therewas no significant difference between the two freezing methods. (Data generated by UCSFDiabetes Center)

How Corning® CoolCell® LX Works



Corning CoolCell LX uses a combination of uniform-density cross-linked polyethylene foam, a solid state core, and radial vial symmetry to create freezing profiles that are consistent and reproducible. The low heat content also ensures that CoolCell LX containers will rapidly return to room temperature when removed from the freezer.



Corning CoolCell FTS30 uses a solid state core and controlled micro-convection technology to evenly draw in -80°C freezer air through a bottom base vent, uniformly disperse the cold air around each vial in the central chamber and then release the thermal load from the vials through a top vent choke. The inner vial module holds 30 cryogenic vials and can be removed in one step. Each vial achieves a uniform and reproducible -1°C/minute. Freezing profile and thermal profiles are highly reproducible. Due to the low thermal mass of the uniform-density cross-linked polyethylene foam container, freezing can be conducted without a rise in local freezer temperature, thereby protecting nearby samples.

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Ordering Information

Corning® CoolCell® Containers

Cat. No.	Description	External Dimension (Diameter x Height)	Well Diameter
432000	Corning CoolCell, purple	11.7 x 10.9 cm	12.7 mm
432001	Corning CoolCell LX, purple	11.7 x 9.9 cm	12.7 mm
432002	Corning CoolCell LX, green	11.7 x 9.9 cm	12.7 mm
432003	Corning CoolCell LX, orange	11.7 x 9.9 cm	12.7 mm
432004	Corning CoolCell LX, pink	11.7 x 9.9 cm	12.7 mm
432138	Corning CoolCell LX 4-pack (all 4 colors)	11.7 x 9.9 cm	12.7 mm
432006	Corning CoolCell FTS30, purple	16.5 x 11.5 cm	12.3 mm
432008	Corning CoolCell FTS30, green	16.5 x 11.5 cm	12.3 mm
432007	Corning CoolCell FTS30, orange	16.5 x 11.5 cm	12.3 mm
432009	Corning CoolCell FTS30, pink	16.5 x 11.5 cm	12.3 mm
432005	Corning CoolCell 5 mL LX, purple	9.5 x 14.5 cm	15.2 mm
432010	Corning CoolCell SV2, purple	13.9 x 10.5 cm	14.7 mm
432011	Corning CoolCell SV10, purple	12.1 x 9.8 cm	23.6 mm

To ensure cell freezing rate consistency and uniform results when using Corning CoolCell containers, insert a CoolCell Filler Vial into the empty wells when freezing less than a full load. It is suitable for repeated use and compatible with CoolCell LX, CoolCell FTS30, and CoolCell 5 mL LX containers.

Cat. No.	Description	For Use With
432076	Corning Corning CoolCell filler vial, 2 mL, 6/pk	Corning CoolCell LX, CoolCell FTS30
432077	Corning Corning CoolCell filler vial, 5 mL, 6/pk	Corning CoolCell 5 mL LX
432078	Removable cryogenic vial module for CoolCell FTS30	Corning CoolCell FTS30

Corning Cryogenic Vial Grippers

Cryogenic vial grippers feature a unique design to grasp internal or external-thread cryogenic vials. Grippers enable easy sorting and moving of vials while maintaining sterility and protecting fingers from frozen vials, dry ice, and liquid nitrogen.

Cat. No.	Description
432136	Cryogenic vial grippers, multi-color (5/cs)

For more specific information on claims, visit the Certificates page at **www.corning.com/lifesciences**.

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