

# Cell Therapy Systems

## Synth-a-Freeze<sup>®</sup> CTS™

### Defined Protein-Free Cryopreservation Medium

#### Description

Synth-a-Freeze<sup>®</sup> is a defined, liquid cryopreservation medium containing 10% dimethylsulfoxide (DMSO) without antibiotics, antimycotics, hormones, growth factors, serum, or protein, and buffered with HEPES and sodium bicarbonate. Synth-a-Freeze<sup>®</sup> is intended for freezing and storing a variety of mammalian cell types.

Product	Catalog no.	Amount	Storage	Shelf Life*
Synth-a-Freeze <sup>®</sup> CTS™	A13713-01	50 mL	-20°C to -5°C (see below for more information)	18 months

\* Shelf Life duration is determined from Date of Manufacture.

#### Product use

For Research Use or For use in Manufacturing Cell-Gene-or Tissue-based products. Caution: Not for direct administration into humans or animals.

#### Important information

- Store the product at -20°C to -5°C in a non-self defrosting freezer.
- Once thawed, the product should be stored at 2°C to 8°C. Product is stable 6 months post thaw when stored at 2°C to 8°C.
- Do not refreeze.
- Avoid exposure to light.

#### Safety information

For every chemical, read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves.

#### Human cell type application

- Corneal epithelial cells
- Neonatal & adult dermal fibroblasts
- Neonatal & adult epidermal keratinocytes
- Aortic, pulmonary artery & umbilical vein endothelial cells
- Neonatal & adult melanocytes
- Skeletal muscle cells
- Aortic, coronary & pulmonary smooth muscle cells
- Neonatal & adult microvascular endothelial cells
- Neural stem cells
- Embryonic stem cells
- Mesenchymal stem cells

#### Use

Synth-a-Freeze<sup>®</sup> can be used with any standard freezing protocol. Synth-a-Freeze<sup>®</sup> performs comparable to our standard, serum-containing cryopreservation medium for cryopreserving a variety of cell types including human Embryonic Stem Cells, Neural Stem Cells<sup>1</sup>, Mesenchymal Stem Cells, and Keratinocytes<sup>2</sup>. Synth-a-Freeze<sup>®</sup> is not recommended for cryopreservation of human epidermal melanocytes.

For optimal results, the use of a controlled-rate freezer is recommended. The following is an example of a standard cryopreservation protocol.

1. Thaw Synth-a-Freeze<sup>®</sup> medium in a 37°C water bath or overnight at 2°C to 8°C.  
**Note:** If thawed in a water bath, do not exceed 37°C or leave the product at 37°C for an extended period of time. Synth-a-Freeze<sup>®</sup> should be equilibrated to 4°C prior to use.
2. Determine the desired viable cell density and calculate the required volume of Synth-a-Freeze<sup>®</sup> medium needed for a concentration of  $5 \times 10^5$  to  $3 \times 10^6$  viable cells/mL.
3. If enzymatic agents are used to detach the cells from a culture surface, resuspend the cells in complete medium required for that cell type to neutralize the effects of the enzyme. Pellet the cells by centrifugation. Aseptically decant supernatant without disturbing the cell pellet.
4. Resuspend the cell pellet in the pre-determined volume of 4°C Synth-a-Freeze<sup>®</sup> medium.
5. Dispense aliquots of this suspension (frequently mixing to maintain a homogeneous cell suspension) into cryogenic storage vials according to the manufacturer's specifications (e.g., 1.5 mL of suspension in a 2.0 mL cryovial).
6. Achieve cryopreservation in an automated or manual controlled rate freezing apparatus following standard procedures (1°C decrease per minute).
7. Transfer frozen cells to liquid nitrogen (vapor phase); storage at -200°C to -125°C is recommended.

## Related products

Product	Catalog no.
KnockOut™ DMEM CTS™	A12861
KnockOut™ SR XenoFree CTS™	A10992
CELLstart™ CTS™ Substrate	A10142
Neurobasal® CTS™ Medium	A13712
Neurobasal®-A CTS™ Medium	A13710
B-27® Supplement XenoFree CTS™	A14867
StemPro® MSC SFM CTS™	A10332
GlutaMAX™-I CTS™ Supplement	A12860
TrypLE™ Select CTS™ Enzyme	A12859

## Explanation of symbols and warnings

The symbols present on the product label are explained below:

			
Use By:	Batch code	Catalog number	Temperature Limitation
			
Consult instructions for use	Caution, consult accompanying documents	Sterilized using aseptic processing techniques	

## Limited product warranty

Life Technologies Corporation and/or its affiliate(s) warrant their products as set forth in the Life Technologies' General Terms and Conditions of Sale found on Life Technologies' website at [www.lifetechnologies.com/termsandconditions](http://www.lifetechnologies.com/termsandconditions). If you have any questions, please contact Life Technologies at [www.lifetechnologies.com/support](http://www.lifetechnologies.com/support).

## Important licensing information

This product may be covered by one or more Limited Use Label Licenses. By use of this product, you accept the terms and conditions of all applicable Limited Use Label Licenses.

## References

- Shin, S. and Vemuri. Culture and Differentiation of Human Neural Stem Cells. L.C. Doering (ed.). Protocols for Neural Cell Culture. Springer Protocol Handbooks.
- Lemaire, S., Kosowska-Shick, K., Appelbaum, P., Verween, G., Tulkens, P., and Van Bambeke, F. (2010) Cellular Pharmacodynamics of the Novel Biaryloxazolidinone Radezolid: Studies with Infected Phagocytic and Nonphagocytic cells, Using Staphylococcus aureus, Staphylococcus epidermidis, Listeria monocytogenes, and Legionella pneumophila. *Antimicrob Agents Chemother* 54: 2549–2559.

For additional technical information such as Safety Data Sheets (SDS), Certificates of Analysis, visit [www.lifetechnologies.com/support](http://www.lifetechnologies.com/support).

For further assistance, email [techsupport@lifetech.com](mailto:techsupport@lifetech.com)

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