

CASE STUDY

RESEARCHERS INVESTIGATE NEW METHOD FOR CRYOPRESERVING MOUSE EMBRYOS

About CryoCrate, LLC

In today's market, there are numerous cell and tissue types that (a) cannot be cryopreserved or (b) can be cryopreserved, but lose post-thaw viability. Cryopreservation is a critical platform technology for biomedical research and applications. Our mission is to revolutionize cryopreservation in the life sciences, with a focus on cells and tissues that currently cannot be maintained under medium and long-term storage conditions.

Contact Us

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Ordering Information

C80EZ® Cryopreservation Media

| Cat# | Cell Types |
|--------|---------------------------|
| 501001 | mammalian (w/phenol red) |
| 501002 | mammalian |
| 501003 | mammalian (w/HEPES) |
| 601001 | insect |
| 701001 | competent cells, bacteria |



BACKGROUND

Due to the large size and high water content, mammalian embryos are highly vulnerable to ice recrystallization in freezing media during storage and therefore cannot be cryopreserved at -80°C . Embryo storage has been limited to the use of liquid nitrogen (LN_2) facilities and transportation between labs can be expensive. Researchers at the **Mutant Mouse Resource & Research Center (MMRRC)** in Columbia, MO wanted to rely less on liquid N_2 and reduce costs of transporting mouse embryos.

EXPERIMENT

In the experiment, MMRRC researchers distributed over 200 Strain ICR mouse embryos into cryo-straws and cryopreserved into three groups: **Group I:** LN_2 storage with 10% v/v DMSO using FHM medium & bovine serum albumin (BSA); **Group II:** -80°C storage with 10% v/v DMSO/FHM/BSA; & **Group III:** -80°C storage with 10% v/v DMSO in 1:1 v/v mixture of FHM & C80EZ® cryopreservation medium. Storage period for the embryos was two months.

RESULTS

The percent of early and hatched blastocysts from recovered frozen embryos from **Group III** was comparable to those from **Group I**. For **Group II**, even after one week of storage at -80°C , no embryos survived.

"We infer that use of C80EZ® medium is an excellent approach to preserving embryos in laboratory deep freezers and will enable shipping of embryos in dry ice boxes vs. expensive LN_2 shippers", commented Missouri researcher Dr. Xu Han.

Post-thaw viability (%) for mouse embryos (two month storage)

