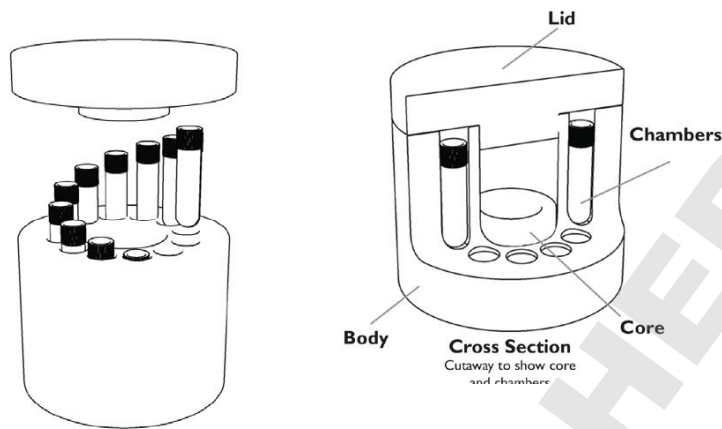


Controlled-rate cell freezing container for 1ml or 2ml cryovials



### Quick Start

- The 12 chambers and cryovials should be dry to avoid tube sticking upon freezing.
- Make sure the core (black ring) is at room temperature and seated in the bottom of the central cavity.
- Place sample vials containing 1 ml of cell suspension in each well. Each well should contain a filled vial. If freezing batch is fewer than 12 vials, fill each empty well with a BioCision CoolCell Filler Vial (2ml vial, part number BCS-3105) or other vial that contains equivalent volume of freezing media.

*Note: Cell suspensions can be inserted into a room temperature CoolCell and successfully preserved. For optimal results, CoolCell should be at the same temperature as your cell suspensions.*

- Check that the tubes slide in and out freely.
- Fully seat the lid on CoolCell
- Place CoolCell upright into a  $-80^{\circ}\text{C}$  freezer or dry ice locker. Ensure that there is at least one inch of free space clearance around CoolCell module.
- Freeze for four hours before transferring samples to archive storage.

### Transferring frozen samples to archive storage

- Prepare an insulated pan or container with a one inch (2.5cm) layer of pulverized or pellet dry ice.
- Remove CoolCell from the freezer and gently remove the lid using a gentle twisting and rocking motion.
- Immediately invert the CoolCell over the dry ice to recover the frozen vials. Check the CoolCell vial chambers to ensure that all chambers are clear. If any vials have stuck, release the vials by tapping the inverted CoolCell on a flat surface or on the palm of your hand.

### Special Notes:

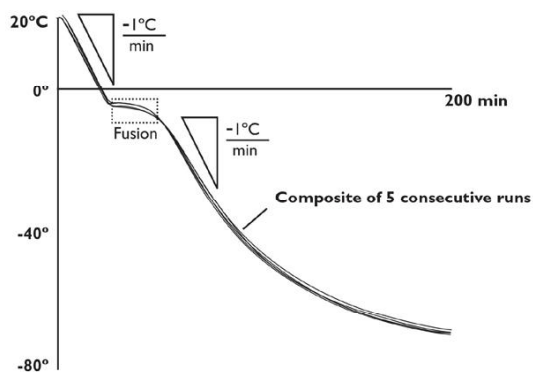
- Always use dry ice to transfer cryovials containing cells to permanent storage to avoid temperature rise and cell damage. Cryovial contents can rise from  $-80^{\circ}\text{C}$  to over  $-50^{\circ}\text{C}$  in less than one minute if exposed to room temperature air.
- It is strongly recommended that all frozen cell cultures be checked for viability before the stock culture is terminated.

### Recycling CoolCell to room temperature

CoolCell is ready to freeze again as soon as the foam body and core (black ring) are at room temperature. To rapidly recycle CoolCell to room temperature, remove the center solid core ring. CoolCell body and lid will return to room temperature in 10 to 15 minutes. Check that all chambers are dry. Dry the core ring before re-inserting into the central chamber.

## About CoolCell

CoolCell, in combination with a -80°C freezer or dry ice locker, will provide the freezing rate of -1°C per minute that is ideal for cryo-preservation of most cultured cell lines. CoolCell design uses a combination of insulation foam, radial symmetry, and a heat transfer core to regulate heat loss rather than using a large thermal mass (alcohol-based freezing container). As a result, freezing profiles are extremely consistent from one run to the next. Also, because of this low thermal mass, CoolCell will not cause a rise in local freezer temperature and will protect nearby samples already stored in the freezer. Low thermal mass also means CoolCell will rapidly return to room temperature for another freezing cycle (see fast recycle instructions above).



## CoolCell freezing performance

CoolCell will freeze 12 tubes each containing 1ml of cell suspension at -1°C per minute when placed in a -75°C to 80°C environment (mechanical freezer or dry ice locker). The five consecutive run freezing profile curves at left were performed with 12 sample loads each.

## Troubleshooting

Problem	Solution
Vials do not freely fit in the chambers	CoolCell is designed to fit standard screw-top 1ml and 2ml cryovials up to 13mm in diameter and up to 55mm in height. Check that flag style labels, if used, will not bind and hinder insertion or removal.
Vials are stuck in CoolCell after freezing	It is likely moisture was in the vial chambers or on the sample vial prior to freezing. Remove the core (black ring) and tap the CoolCell to dislodge vials.
The lid does not fully seat	Ensure that sample tubes are fully seated in chamber. The maximum height of the tube is 55mm.

## Care and cleaning

CoolCell is constructed of closed cell cross-linked polyethylene foam and a solid thermo-conductive core. CoolCell is compatible with prolonged cryogenic temperature exposure. The foam may be cleaned by water and mild soap. Rinse and dry thoroughly. CoolCell is resistant to alcohols and 10% bleach solutions. Do not autoclave. Maximum temperature exposure: 60°C. Avoid prolonged exposure to UV light sources.

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