



CryoPro - 24 x 1.5 mL, tube format - 1.5 ml

Water soluble cryoprotectant reagent set designed for the cryopreservation of biological macromolecular crystals

Product codes:

Reference: HR 2074

Product gallery:



Product description:

- 24 Cryoprotectants
- 1.5 mL volume
- Water soluble compounds
- Formulated using Type 1+ ultrapure water, 18.2 Megaohm cm resistivity at 25°C, 5 ppb Total Organic Carbon, 1 Bacteria (CFU/mL), 0.03 Endotoxin (EU/mL)
- Organic, non-volatile, Osmolyte, Polyol, Polymer/Polyol, Polymer, Solvent, Sugar, and Salt

Just as with identifying and optimizing reagents for crystallization, the identification and optimization of a suitable cryoprotectant involves some trial and error as well as screening. A suitable cryoprotectant, when mixed with the crystal and crystallization reagent will cool to cryogenic temperature without ice formation and not damage the crystal.

To assay for the proper concentration of cryoprotectant in the reagent used to grow the crystal, one can mix the cryoprotectant with the crystallization reagent and loop a small amount of this mixture using a CryoLoop. Next, the CryoLoop containing the mixture is cooled in a bath of liquid nitrogen or in a cryostream. One then inspects for ice formation either visually under a microscope or with X-ray diffraction. Upon cooling, a transparent drop and X-ray diffraction pattern mostly free of powder diffraction rings or "ice rings" indicates success where the appearance of a cloudy drop or "ice rings" indicates an inappropriate cryoprotectant concentration or cryoprotectant. Incrementally increase the concentration and/or alter



composition of the cryoprotectant serially, 5 to 10% and repeat the procedure until the drop remains clear when cooled. Once a cooled, clear drop is achieved, this is typically a good starting point for cryopreservation of the crystal. Next, one needs to test the stability as well as the X-ray diffraction of the crystal in the cryoprotectant. It is not essential that these preliminary diagnostic tests be performed, but they can provide useful data towards identifying an appropriate cryoprotectant and concentration for your crystal. Typically, the addition of 10 to 30% cryoprotectant to the mother liquor will be sufficient as a reasonable starting point.

Some crystals can be dipped or washed quickly (2 seconds) in a simple cryoprotectant such as 30% Glycerol for successful cryopreservation. But, when this fails, a rational assay of each cryoprotectant with incremental increases or decreases in cryoprotectant concentration as well as a test of mixtures (for example a mixture of sugars, or a sugar mixed with Ethylene glycol) may be required to determine the best cryoprotectant for a crystal.

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Product features:

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