

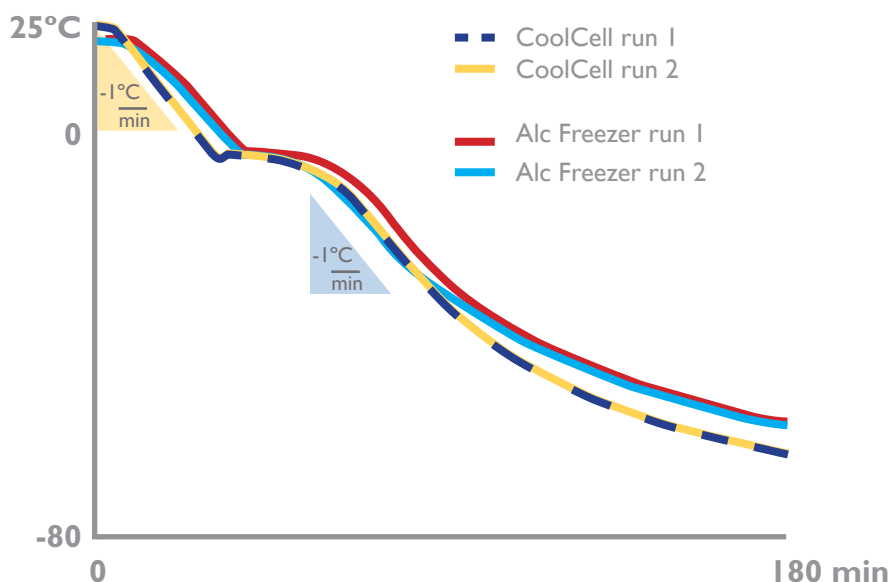
CoolCell

-1°C/min cell freezing without alcohol

Cell freezing validation part 1: The CoolCell and a standard alcohol filled freezer are compared to the ideal cooling rate of 1°C per minute.

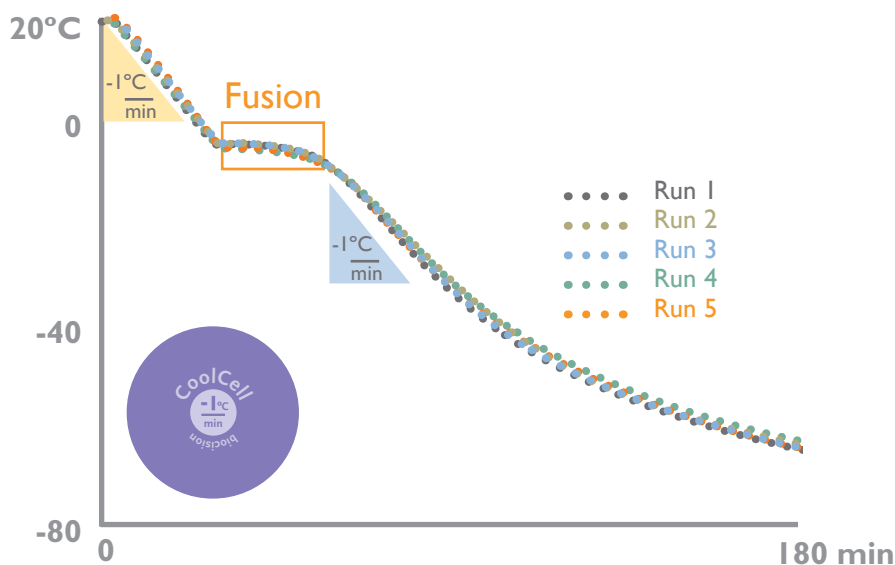
Experiment 1:

The temperature of a 1 ml volume of DMEM media, 10% DMSO, 20% fetal calf serum in a 2ml cryogenic storage vial was recorded using a thermocouple probe. Both the CoolCell and alcohol-filled freezing modules were filled to capacity with identical cryogenic vials and liquid loads. Freezing modules were placed into a -75°C freezer space. The plateau near 0°C shows the latent heat released during the conversion of water to ice (fusion).



Cell freezing validation part 2:

Experiment 1 was repeated using the CoolCell in five consecutive freezing cycles to compare run to run repeatability of the freezing profile.



Discussion:

Repetitive freezing cycles produced constant -1°C per minute temperature drops before and after fusion. Times for entry and exit of the fusion phase were the same across all runs.

Conclusion: CoolCell provided superior freezing rate consistency when compared to an alcohol-filled freezing container and provided identical freezing profiles for each vial.