

Cryogenic Preservation Studies for Sars-Cov2 Vaccine Storage

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Since the covid-19 epidemic started, especially with the conclusion of a few of the vaccine studies, the transportation of vaccines at cryogenic temperatures has come to the fore. Many private companies are ready to offer their previously used cooling systems to their customers in this regard. The guide "ISBER Best Practices: Recommendations for Bioeposytors, 4th edition" can be followed. For example, LN2 cryopreservation is especially ideal for long-term transfers. Because it keeps the samples in it under the glass transition phase temperature of -132°C.

This issue is very serious. How and in what way the samples are to be prepared requires a special effort to achieve this below the glass transition temperature. Later, it comes to the fore on how to protect the samples prepared under the same conditions. Why is it so important? When we say the above-mentioned situations, the answer is that the total number of living cells in the sample remains at the maximum in a living sample prepared at cryogenic temperature for both research purposes and for carrying the vaccine. Another method is to keep it at the fusion threshold throughout the latent heat of the sample. Here, it is necessary to consider the heat loss of the material at cryogenic temperatures. In other words, the heat transfer required for minimum cell death should be minimized. The criterion to be considered here should be to evaluate the latent heat-dependent changes in the behavior of metals developed together by debye-einstein at cryogenic temperatures. I share the graphic in my book section published in Intechopen for relevant researchers and researchers may wish to look at the databases of metals at cryogenic temperatures [1]. I wish you healthy days.

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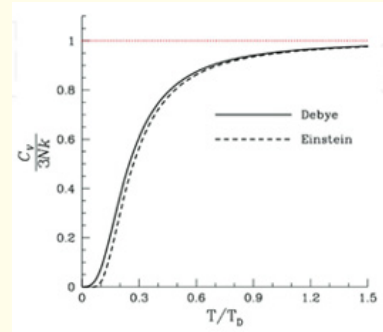


Figure 1: Typical internal energy and specific curve for metals [1].

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