CeGaT

Research &
Pharma Solutions

Best Practice Guidelines for Preparation and Shipping of Cells

Best Practice Guidelines: Preparation and Shipping of Cells

DNA and RNA sequencing approaches provide researchers with insights into various cells. This includes their transcriptomic state, genomic diversity, and even gene expression at the single-cell level.

As we offer a range of next-generation sequencing products for analyzing biological cells, we are aware that proper cell preparation is essential for successful nucleic acid isolation, which in turn enables the generation of high-quality sequencing data. Thus, this document is intended to provide you with an overview of isolation options and shipment recommendations for various planned analyses.

How To...

a. Prepare Cells for DNA/RNA Isolation

Centrifuge your cell suspension containing at least 1 x 10^6 mammalian cells. Carefully remove the supernatant and wash the cell pellet with PBS. Centrifuge again, remove the PBS, and discard it. Immediately freeze the dry cell pellet at -80°C and ship it frozen on dry ice (see Figure 1).

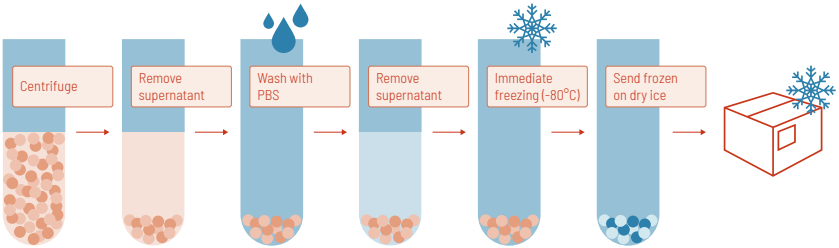

Figure 1| Cell preparation for DNA or RNA isolation workflow.

If another transportation method, such as sending cells in RNA*later*®, is of interest, please contact us before sending the samples.

b. Prepare Cells for Single-Cell Products

b1. 3' Single-Cell RNA Sequencing and Single-Cell Immune Profiling

Resuspend a minimum of 1 x 10^6 cells in 1 mL of an appropriate cryopreservation medium, such as 10% DMSO in cell culture medium or serum. Ensure that the cell viability is greater than 90% for the 1 x 10^6 cells. Moreover, the cell suspension should be free of debris and large cell aggregates. The cells must be cryopreserved at -80°C by gradually lowering the temperature using controlled-rate freezing containers. Long-term storage is recommended in liquid nitrogen or at -150°C.

Send the cells frozen on dry ice. If you have no experience with how well your cells tolerate the cryopreservation process, consider a viability check after freezing and thawing. If viability decreases drastically, our Single-Cell RNA Sequencing Flex could be an alternative.

For further information, please check the 10x Cell Preparation for Single Cell Protocols handbook.

b2. Single-Cell RNA Sequencing Flex

Our Single-Cell RNA Sequencing Flex allows sequencing of formaldehyde-fixed cell suspensions. Please prepare the cells according to the 10x Fixation of Cells & Nuclei for GEM-X Flex Gene Expression protocol.

Cells should be provided in 2 mL Sarstedt screw cap tubes or 1.5 mL Eppendorf Safe-Lock® tubes. Please do not hesitate to contact us in advance if you plan to send your cells under different shipping terms.

About Us

CeGaT was founded in 2009 in Tübingen, Germany. Our scientists are specialized in next-generation sequencing (NGS) for genetic diagnostics, and we also provide a variety of sequencing services for research purposes and pharma solutions. Our sequencing service portfolio is complemented by analyses suited for microbiome, immunology, and translational oncology studies.

Our dedicated project management team of scientists and bio-informaticians works closely with you to develop the best strategy to realize your project. Depending on its scope, we select the most suitable library preparation and conditions on our sequencing platforms.

We would be pleased to provide you with our excellent service. Contact us today to start planning your next project.

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