

EPIGENOMICS SERVICES



Sample Preparation Guide for Hi-C Sequencing

SCOPE Cell Samples · Blood Samples · Tissue Samples

These are general sample preparation recommendations. Final requirements are subject to the project confirmation.

01 Cell Samples

1. Remove cells from the incubator and examine them under a microscope to confirm healthy morphology and growth. Ensure cultures are free of mycoplasma and other microbial contamination prior to harvest.
2. Harvest cells at an appropriate growth stage and aliquot into cryovials at 1×10^6 to 1×10^7 cells per vial. Please prepare one additional vial as backup.
 - Centrifuge at $500\text{--}800 \times g$ for 5 minutes, discard the culture medium, resuspend the pellet in 1 mL 1× PBS (room temperature), and centrifuge again to remove PBS. Discard the supernatant completely.
3. Add 200 µL to 1 mL of cell freezing medium (10% DMSO + 90% FBS), gently resuspend the pellet, and mix thoroughly. Freeze cells using a controlled, gradual cooling process, either of the following:
 - **Manual stepwise cooling:** 4 °C for 10 minutes → -20 °C for 30 minutes → -80 °C for 16–18 hours (overnight).
 - **Controlled-rate freezing:** cool at -1 to -3 °C/min down to -80 °C using a controlled-rate freezer or an appropriate freezing container.

NOTE

For animal-cell Hi-C, it is acceptable to omit freezing medium by pelleting cells, washing with PBS, and snap-freezing the pellet directly in liquid nitrogen. However, using freezing medium and controlled-rate freezing as described above is preferred, as it generally supports more robust downstream library construction.

02 Blood Samples

1. Collect blood into EDTA anticoagulant tubes (do not use heparin). Gently invert the tube several times to mix thoroughly.
2. For mammalian samples, please provide ≥ 3 mL blood per sample. If possible, submit at least two tubes per sample (approximately 3 mL per tube).

03 Tissue Samples

1. For vertebrate tissues, liver is recommended as the first choice, followed by heart, spleen, muscle, and brain, or other tissues as required by the study design.
 - Immediately remove non-target materials (e.g., connective tissue, adipose tissue, hair/fur, and other irrelevant tissues).
2. Quickly rinse the tissue surface with pre-chilled PBS or sterile saline to remove residual blood and visible contaminants.
3. If the tissue piece is large, cut into smaller fragments (ideally ≤ 0.5 cm per piece) to facilitate rapid freezing and consistent downstream processing.
4. Snap-freeze processed tissue in liquid nitrogen, then transfer for long-term storage at -80°C or in liquid nitrogen. Ship samples on dry ice. Recommended input: ≥ 1 g tissue per sample.