Chang lab, Stanford University

Sample storage and shipping for ATAC-seq (and scATACseq)

Blood

1. Draw ~5 ml blood in a Green-top tube. This tube contains sodium heparin that prevents clotting and is the standard tube used to collect whole blood for specialized tests. After tube is filled with blood, invert several times to prevent clotting.

2. Ship sample on room temperature in insulated container overnight.

3. Desired cell types (e.g. CD4+ T-cells) can be isolated by Rosette-sep or FACS and used for ATAC-seq. Note: Sample needs to be at room temp or Rosettesep/ Ficoll steps will not work properly.

Solid tissue

1. Dissect a small sample (approximately 1 cubic mm).

2. Place in a Cryo-tube with CryoStor™CS10 freezing medium(Stem Cell Technologies Cat#07930), with just enough to cover the tissue.
*An alternative is to use clear Eppendorf tube with a small amount of media (e.g. DMEM+10% fetal bovine serum) + 10% DMSO.

3. Freeze by placing in an isopropanol filled freezing vessel and place in -80. Goal is ~1 degree decrement per hour.

4. You should be able to keep the sample at -80ºC or liquid nitrogen for long term storage, or until ready for ATAC.

When we then perform ATAC, we will wash the tissue and dissociate it into single cells. YOUR SPECIFIC DISSOCIATION PROTOCOL WOULD BE HELPFUL HERE

In some cases we might lyse the cells, and then transpose. We then sort the single cells/nuclei into 96 or 384 well plates. Staining for nuclear markers can be used to distinguish cell types. In some cases, like epithelial cells, cell surface markers are still working and we can still sort certain populations.

Sorted cells

In other tricky cases it would be good to get the pure cell population from you.

1. Collect cells in media

2. spin down and resuspend in CryoStor media (up to 1 million cells per ml)

3. Freeze by placing in an isopropanol filled freezing vessel and place in -80.

Goal is ~1 degree decrement per hour.

4. You should be able to keep the sample at -80ºC or liquid nitrogen for long term storage, or until ready for ATAC.