**Dried Primer Preparation**

1. Clean the bench with ethanol and DNA-OFF solution before starting
2. Spin down scATATC\_S5\_Short, Illumina\_P7, and scATAC\_i5 primers for 10 seconds and confirm the dried oligo is at the bottom of the tube before opening the lid
3. Make a 100 uM storage solution for each dried oligo in ultrapure water
4. Find the oligo yield (in nmol) on the tube label
5. Multiply this number by 10
6. The resulting product is the amount of buffer needed (in ul) to prepare a 100 uM solution
7. Make aliquots of 20 ul and store at -20C for up to 12 months

**Reagent Preparation (can be stored for at least 1 month)**

1. 10% SDS stock solution
2. Weigh out 1 g SDS and add to a 50 mL tube
3. Add 10 mL of ultrapure water to the 50 mL tube
4. Gently mix to avoid bubbles and allow the SDS to dissolve at RT or 60C
5. Pass the solution through a Striflip filter
6. Store 10% SDS solution at RT for up to 1 month
7. 1.1X Lysis Buffer
8. Mix 220 ul 1M Tris-HCl (pH 8.0), 44 ul 5M NaCl, 440 ul 10% SDS, and 19.3 mL ultrapure wate in a 50 mL conical
9. Store at RT for up to 1 month
10. 1X DPBS-0.5% BSA solution
11. Mix 166.7 ul 30% (wt/vol) BSA and 10 mL 1X DPBS
12. Store at -20C for up to 1 month
13. Nucleus Dilution Buffer
14. Mix 166.7 ul 30% (wt/vol) BSA, 5 mL 1X DPBS and 5 mL nuclease free water
15. Store at -20C for up to 1 month
16. 1.1X Lysis Buffer
17. Mix 220 ul 1M Tris-HCl (pH 8.0), 44 ul 5M NaCl, 440 ul 10% (wt/vol) SDS and 19.3 mL nuclease free water
18. Store at RT for up to 1 month
19. Omni-ATAC RSB
20. Mix 500 ul 1M Tris-HCl (pH 8.0), 100 ul 5M NaCl, 150 ul MgCl2, and 49.25 mL nuclease free water
21. Store at 4C for up to 2 months
22. 4X THS TD Buffer
23. Mix 132 ul 1M Tris-HCl (pH 8.0), 52.8 ul 5M potassium acetate, 40 ul 1M magnesium acetate, 640 ul N,N- dimethylformamide and 135.2 ul nuclease free water
24. Store at -20C for up to 2 months
25. 2X scATAC Stop Buffer
26. Mix 100 ul 1M Tris-HCl (pH 8.0), 400 ul 0.5M EDTA and 9.5 mL nuclease free water
27. Store at 4C for up to 2 months

**Prepare scATAC i7 Index Plate**

1. Clean the bench with ethanol and DNA-OFF solution before starting
2. Allow the 100 uM 384 well i7 index plate to thaw and briefly centrifuge
3. Add 31.5 ul of 1.1X Lysis Buffer to each well of a new 384 well plate
4. To each well of the plate, add 3.5 ul 100uM i7 index using a multichannel pipette so the final concentration of the index in each well is 10 uM in 1X Lysis Buffer
5. Incubate the plate at RT for 5 min
6. Seal and label the plate ‘scATAC 10 uM i7 index plate’ and include the date
7. Briefly centrifuge the plate and store at -80C indefinitely

**Prepare scATAC Lysis Plate**

1. Take out the ‘scATAC-seq 10 uM i7 index plate’ and thaw at RT
2. Mix nine volumes of 1.1X Lysis Buffer and one volume of scATAC\_S5\_short primer to reach a 10 uM primer concentration in 1X Lysis Buffer. For a single 384 well plate mix 450 ul of 1.1X Lysis Buffer and 50 ul of scATAC\_S5\_short primer. Aliquot 1 ul of the mixture into each well of a new 384 well plate and label the plate ‘scATAC Lysis Plate’ and include the date.
3. Briefly centrifuge the scATAC-seq 10 uM i7 index plate. Transfer 1 ul 10 uM i7 index to the scATAC lysis plate.
4. Briefly centrifuge the scATAC lysis plate and seal it well.