**Preparation of 10X Barcode Plates for CyTOF**

Preparation of 0.1M Pd stocks

1. Calculate the volume (µL) of **ultra-pure HCl** required to prepare a 0.1M solution of each Pd isotope (6 isotopes total: 102, 104, 105, 106, 108, 110):

[Mass of isotope (g)] x [106 µL/L]

[MM of Pd isotope (g/mol)] x [0.1 mol/L]

1. Dissolve each Pd isotope (in glass vials from Trace Sciences) in appropriate volume of **ultra-pure HCl** by vortexing and shaking. Since some of the isotope can be stuck to the rubber stopper and other parts of the vial, it can be difficult to effectively dissolve all of the isotope in such a small volume. Use caution if inverting the vial in order to vortex, since the rubber stopper can rupture under the strain.
2. Transfer 0.1M Pd isotope solutions to 1.5mL microcentrifuge tubes and store at -80°C.

Preparation of 10X BC Plates

1. Prepare 1mM Pd isotope stocks:
   1. Transfer 2µL 0.1M Pd isotope to a 500µL microcentrifuge tube.
   2. Add 198µL DMSO to the tube and pipette up and down to mix.
   3. Repeat for all 6 Pd isotopes (102, 104, 105, 106, 108, 110).
2. Add 1mM Pd isotopes to 10X BC plate:
   1. Obtain 10 – 0.2mL 96-well PCR plates (Fisher cat. # AB2800).
   2. Transfer 18µL of each of the 3 isotopes corresponding to the pattern below to each well of one of the PCR plates. Each well should contain 54µL once this step is complete.
   3. Add 66µL DMSO to each well to reach a final volume of 120µL.
   4. Using a multichannel pipette, transfer 12µL of each well to the corresponding layout in each of the 9 remaining PCR plates. Leave the remaining 12µL in the origin plate. You will have 10 plates, each with 12µL of 10X (150µM) stock.
   5. Seal each plate with a Thermo plate seal (Fisher cat. # 12-565-398) and store at -80°C in a 1 gallon ziploc bag with drierite (desiccant).

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| A |  |  |  |  |  |  |  |  |  |  |  |  |
| B |  |  |  |  |  |  |  |  |  |  |  |  |
| C |  |  |  | 102 104 105 | 102 104 106 | 102 104 108 | 102 104 110 | 102 105 106 |  |  |  |  |
| D |  |  |  | 102 105 108 | 102 105 110 | 102 106 108 | 102 106 110 | 102 108 110 |  |  |  |  |
| E |  |  |  | 104 105 106 | 104 105 108 | 104 105 110 | 104 106 108 | 104 106 110 |  |  |  |  |
| F |  |  |  | 104 108 110 | 105 106 108 | 105 106 110 | 105 108 110 | 106 108 110 |  |  |  |  |
| G |  |  |  |  |  |  |  |  |  |  |  |  |
| H |  |  |  |  |  |  |  |  |  |  |  |  |