ScienceBridge Tech Site Standard Operating Procedure

Title: **Packaging Cold Solutions for Kit Orders**		
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Scope	For use by biotechnology students at Mira Mesa High School when packaging cold solutions for kit orders.			
Objective	This SOP sets the procedural specifications for how cold solutions should be packaged so it's easy to find them when you need to use them.			
Materials		1 kit	Packaged Quantity	Packaging
	Bacterial Transformation: i. PM1 ii. PM2 iii. Innoculated Stabs Enzymes: i. L-DOPA Protein Purification: i. Ni Beads ii. Lysozyme	 1 1 1 (per teacher) 10 10 1	 1/kit 1/kit 1 5/foil 10/kit 1/kit	
Equipment	1. Ice Box & Ice 2. Sharpie Bacterial Transformation: 1. Label 2. Snack Bag Enzymes: 1. Label 2. Gallon Bag Protein Purification: 1. Labels 2. Snack Bags 3. Quart Bags	1 1 1 1 1 1 2 1 1		 1 1 1-2 1-2 2 1 1
Supplemental Aids	Bacterical Transformation: OF Bacterial Transformation Cold Solutions Training Video Enzyme: OF Enzyme Cold Solutions Training Video Protein Purification: OF Protein Purification Cold Solutions Training Video			
Safety	• Make sure all lids are sealed on the solutions • Keep on ice at all times			
Quantity	Fill all cold solutions for kits for current tracking sheets. Complete all teachers for one kit type at the same time.			

Protocol	**Note: Complete all teachers for one kit type for each step before moving onto the next step.** **Keep all solutions on ice while filling orders.** **Step 1: Look for Correct Tracking Sheet** 1. Open Order Fulfillment Binder 2. Go under TAB, Current Tracking Sheets a. Find tracking sheet that does not have Frozen/Cold Solutions section completed. **Step 2: Complete Tracking Sheet:** Complete all teachers for the current order date for one kit type at the same time. 1. Follow the directions below for each kit type on how to fill out the tracking sheet. a. **Bacterial Transformation**: 2 solutions- list separately i. *Solution Names*: PM1 and PM2 ii. *# needed*: calculate and record total # needed (# tubes of each type = # kits) iii. *Storage Temp*: -20°C (freezer) b. **Enzymes**: i. *Solution Name*: L-DOPA ii. *# needed*: calculate and record total # needed (10 tubes x # kits) iii. *Storage Temp*: -20°C (freezer) c. **Ocean Acidification**: Solution Name: write "none" d. **Protein Purification**: 2 solutions- list separately i. Solution Name: Ni Beads and Lysozyme ii. # needed: calculate and record total # needed (Ni beads: 10 tubes x # kits, Lysozyme: # of tubes = # of kits) **iii.** Storage Temp: Ni: 4°C (refrigerator), Lys: -20°C (freezer) 2. **# solution bag labels needed**: Calculate & write # and size needed a. **Bacterial Transformation**: 1 label = 1 snack bag b. **Enzymes**: 1-3 kits ordered = 1 label = 1 gallon bag, 4-5 kits ordered = 2 labels = 2 gallon bags c. **Protein Purification**: 2 labels = 2 bags (Lysozyme:1 snack, Ni:1 quart bag) **Step 3: Cold/Frozen Bag Labels:** 1. Write bag labels: All labels need the following information: a. Teacher Last, First Name b. Total # of kits ordered c. (Bag #) of (Total # of cold/frozen bags)- see specific kit instructions above (5a) d. Delivery Date: Write the MM/DD/YY this teacher will pick up the kit on. 2. Attach labels to correct bag size and keep in OF assembly kit box until fill with correct solutions.

3. **Solution Bag Labels Made (initials, date, per):** complete information on teacher tracking sheet

Step 3: Filling Cold Solution Orders

1. Take Biotechnology Pass and large ice bucket to supply room between rooms 222 and 223. Fill ice bucket half full with ice. Make sure to leave ice scoop where it will not be covered by incoming new ice.
2. Put all needed cold supplies in ice bucket.
3. Fill labeled kit bags (step 5) with the correct # of solutions listed on the **Frozen/Cold Solutions** section of the tracking sheet. Try to keep bag labels out of the ice, but the solutions in the ice.
4. **QC: Double check for the specific kit listed below:**
    a. **Protein Purification: 1 bag of 10 Ni tubes/kit (fridge) and 1 Lysozyme tube/kit (freezer) that is sealed, labeled correctly, and has the correct amount of solution.**
5. **Solutions Bagged:** Fill out the completion date, name, and period for each solution as it is completed.
6. Place completed kits in the "(Solution Name) Ready for QC" box at the correct storage temperature.
    a. Enzymes: For L-DOPA solutions there is no box, instead place on the top shelf of the mini freezer. If the top shelf is full, place on the middle shelf. (Move extra L-DOPA down as needed- all teacher bags should be on higher shelves).

    b. Bacterial Transformation: Put PM1 and PM2 in box in mini freezer on top shelf labeled "QC." Put stab in kit #1 of every teacher order (up to one week before pickup day at earliest – on day of pick up is okay)
    c. Protein Purification: Ni Beads put in labeled QC box in 224A refrigerator; Lysozyme put in box labeled QC on top shelf in mini freezer.

Step 4: E-mail QA and CS teams

1. Send an e-mail to QA and CS that the cold/frozen solutions have been completed for this teacher.
    a. Your e-mail needs to include:
        i. Kit type
        ii. Pick up date
        iii. Teacher name
        iv. Solution name & # of bags
        v. Your name, group, and period
    b. Record the date the e-mail was sent, who sent it and the period on the teacher tracking sheet.

Documentation	**All work and any variance from the protocol must be documented** • Document everything you did onto the communication log
Storage	**Always start with the oldest dates on supplies and complete partially finished or open bags first.** **Product Storage** a. *Bacterial Transformation*: i. Solution Names: PM1 and PM2 ii. found in backroom freezer in boxes labeled "Ready for Kits" iii. Storage Temp: -20°C (freezer) iv. Stabs found in refrigerator in Room A (store @ 4°C) b. *Enzymes*: i. Solution Name: L-DOPA ii. found in mini freezer, bottom and middle shelf iii. Storage Temp: -20°C (freezer) d. Protein Purification: i. Solution Name: Ni Beads and Lysozyme ii. found in backroom freezer/refrigerator in boxes labeled "Ready for Kits" iii. Storage Temp: Ni: 4°C (refrigerator), Lys: -20°C (freezer) **Supplies Storage Locations** • All bags located in enzyme cabinet. • Sharpie found in table boxes. • Labels in Order Fulfillment Binder; if not found they are in the enzyme cabinet. • Large ice buckets under back counter in room 224. • Biotech passes with lanyards on wall hooks in room 224.
Quality Control	• ***Fails QC:*** ○ Wrong number of tubes☐ Recount number of tubes add or take out to reach correct number
When	Every time a teacher orders bacterial transformation, enzymes, or protein purification kits
Tech Site Kit: Group	Bacterial Transformation, Enzymes, Protein Purification : Order Fulfillment