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How to Reconstitute Lyophilized Peptides & Compounds

Caliber Research: Research peptides & reference compounds, independently verified.

This guide describes laboratory handling of lyophilized research materials for analytical and *in-vitro* research applications. It does not provide dosing, administration, compounding, medical, veterinary, or personal-use instructions.

1 Supplies Needed

Here are the supplies you will need and the steps you will take to reconstitute lyophilized peptides & compounds.

1



A good inexpensive label printer that will print 40 mm x 20 mm labels. We recommend the Nimbot B21 Pro, but other acceptable models include Nimbot B1, B1 Pro, M2, or similar.

2



A reconstitution kit from our website, [CaliberResearch.app](https://www.caliberresearch.app)

3

Reconstitution Kit Contains:



- 3 mL standard sterile vial
- 3 mL Luer lock syringe
- 25 ga 5/8" Dynarex needle x2
- 25 ga 1 1/2" Dynarex needle x2
- 0.22 PES 13 mm filter

4



Reconstitution Solution from our website, [CaliberResearch.app](https://www.caliberresearch.app).

Any size or brand will work. Please note that some options are single-use only and others are multi-use.

5



Alcohol pads

2 Useful Tools



Watch the Video

If you would like to watch a video on this process, use the link below:

<https://youtu.be/9YBj26vpHs0>



Reconstitution Calculator

For calculating solvent volume and resulting laboratory sample concentration only.

<https://www.fatscientist.com/reconstitution-calculator>

3 Reconstitution Steps

1



Sanitize the work area, wash hands, and lay out all the supplies for easy access.

2



Open the Reconstitution Solution and remove the caps from the peptide vial and the new, unused 3 mL sterile vial. Wipe any seals or port areas with an alcohol swab and let them dry.

3



Using a 3 mL or 5 mL Luer lock syringe and a Dynarex needle, first draw in the amount of air matching the amount of solution you plan to withdraw. For example, if you plan to draw 1 mL of solution, first draw in 1 mL of air and inject it into the solution bottle to equalize pressure.

4



Draw out the amount of solution you plan to use for the peptide. (Use the calculator above.)

5



Carefully insert the needle containing the solution into the peptide vial, angling the tip toward the side wall. The vacuum in the peptide vial may be strong and can pull the solution in quickly, so try to slow the flow to a measured pace.

6



Allow the peptide to dissolve in the solution. You can gently swirl or barrel-roll the vial, but do not shake. Let it sit for 4–6 minutes, gently swirling periodically until all particles are dissolved and the solution is clear.

7



Once the solution is clear, draw the solution back into the Luer lock syringe. To break the strong vacuum in the vial, you can use a small Dynarex needle to vent at the edge (see the video). Then place the needle attached to the syringe into the peptide vial and draw out all of the solution. Do not pull too hard or the plunger may come out completely, causing you to lose the solution.

8



With the solution in the syringe, hold it upright and carefully remove the needle from the Luer lock syringe. Set the needle aside and push the solution into the syringe. Place the 0.22 PES 13 mm filter onto the syringe. Unwrap a new Dynarex needle and attach it to the filter. The fit is snug, so brace carefully. From bottom to top, you will have the Luer lock syringe, the filter, then the Dynarex needle.

9



Take a 5/8" Dynarex needle and vent the new sterile vial. Now place the filtered syringe assembly into the new vial and push the solution through the filter into the vial. The membrane creates pressure, so it will require some force. Be careful not to blow off the filter or needle, and keep one hand bracing them as you fill the new vial.

10



Once all the solution has been pushed through the filter into the new vial, you may detach the filter from the syringe, draw in about 0.2 mL of air, then reattach the filter and force the air through. This can usually recover the hold-back solution remaining in the filter so you do not waste it, to reduce residual sample loss within the filter assembly.

11



Using the applicable batch Certificate of Analysis, record the reported sample mass and use that value when calculating the resulting laboratory concentration. Label the prepared research sample with the compound identity, batch or lot number, reported mass, solvent, final volume, concentration, preparation date, and applicable storage information.



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