B.32 Activation of sodium orthovanadate

Sodium orthovanadate should be activated for maximal inhibition of protein phosphotyrosyl-phosphatases. This protocol is from Upstate.

1. Prepare a 200 mM solution of sodium orthovanadate (0.37 g for 10 ml).

2. Adjust the pH to 10.0 using either 1N NaOH or 1N HCl. The starting pH of the sodium orthovanadate solution may vary with lots of the chemical. At pH 10.0 the solution will be yellow.

3. Boil the solution until it turns colorless (approximately 10 minutes)

4. Cool to room temperature.

5. Re-adjust the pH to 10.0 and repeat until the solution remains colorless and the pH stabilizes at 10.0.

6. Store the activated sodium orthovanadate as aliquots at -20°C.

This procedure depolymerizes the vanadate, converting it into a more potent inhibitor of protein tyrosine phosphatases. Please note that adding DTT rapidly inactivates sodium orthovanadate.
Bibliography


