AfCS Solution Protocol

Reagent name: Sodium orthovanadate (activated), 200 mM

Reagent name abbreviation: 200 mM Na$_3$VO$_4$

Protocol ID: PS00000478

Version: 01

Volume: 50 ml

Components:

<table>
<thead>
<tr>
<th>Reagent</th>
<th>Source</th>
<th>Catalog or Protocol No.</th>
<th>F.W. or Stock Conc.</th>
<th>Quantity</th>
<th>Final Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium orthovanadate</td>
<td>Sigma-Aldrich</td>
<td>S6508</td>
<td>183.9</td>
<td>1.84 g</td>
<td>200 mM</td>
</tr>
<tr>
<td>Sodium hydroxide*</td>
<td>None</td>
<td>PS00000038</td>
<td>1 N</td>
<td>As needed</td>
<td>1 N</td>
</tr>
<tr>
<td>Hydrochloric acid*</td>
<td>None</td>
<td>PS00000034</td>
<td>1 N</td>
<td>As needed</td>
<td>1 N</td>
</tr>
</tbody>
</table>

* Activated Na$_3$VO$_4$ is a colorless, pH 10 solution.

Preparation:

1. Dissolve 1.84 g of sodium orthovanadate in 45 ml purified water in a small beaker with a stir bar.
2. Adjust the pH to 10 using either 1 N NaOH or 1 N HCl, with stirring. The starting pH of the sodium orthovanadate may vary with lots of the chemical. At pH 10, solution will be yellow.
3. Boil solution until it turns colorless (approximately 10 min). All of the crystals should dissolve.
4. Cool to room temperature.
5. Readjust the pH to 10 and repeat steps 3 and 4 until solution remains colorless and pH stabilizes at 10. Adjust the final volume to 50 ml with purified water.
6. Store the activated sodium orthovanadate in 1-ml aliquots and freeze at -20 °C.

Storage:

Temperature: -20 °C
Location: ______________
Aliquot size: 1 ml
Special instructions: Aliquots must be heated briefly at 90 °C to 100 °C and vortexed upon thawing to redissolve crystals.

Author: Kathleen Lyons

Date: 04/04/03

Approved: Deirdre Brekken
**Comments:** This procedure depolymerizes the vanadate, converting it into a more potent inhibitor of protein tyrosine phosphatases. Phosphatase inhibitors are toxic. Wear gloves and dispose of contaminated items appropriately.