The ribonucleoside-vanadyl complex should be added to all buffers to a final concentration of 10 mM. The buffers should not contain EDTA since one equivalent will totally dissociate the complex.

We do not recommend the use of the vanadyl complex in cell free translation systems and with reverse transcriptase (5). The vanadyl complex can be used in the selective degradation of DNA while preserving RNA since pancreatic deoxyribonuclease I is not inhibited (5). Removal of the ribonucleoside-vanadyl complex from the RNA can be accomplished by adding 10 equivalents of EDTA before ethanol precipitation.

Vanadium V Assay: A spectrohotometric assay to determine the amount of Vanadium V present. Vanadium V is an oxidation by-product during the preparation.

The ribonucleoside-vanadyl complex should be added to all buffers to a final concentration of 10 mM. The buffers should not contain EDTA since one equivalent will totally dissociate the complex.

Percent Vanadium V ≤ 10.0%

Ribonuclease Inhibition Assay: The concentration of vanadyl complex that gives 50% inhibition of pancreatic ribonuclease A (0.28 Kunitz units/ml) is determined by TCA precipitable counts of [H]RNA (5µg/ml) isolated from Hela cells. The assay is run in a lysing buffer containing 20 mM Tris (pH 7.5), 10 mM sodium chloride, 1.25% sucrose, 0.3% triton N101, and 3 mM magnesium chloride at 37°C.

Concentration of ribonucleoside-complex at 50% inhibition 2.5 mM.

References:

Note: The toxicological properties of this compound have not been fully investigated. Avoid contact with skin.