Ribonucleoside Vanadyl Complex

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S1402S 00914051505 1

S1402S

200 mM **Lot: 0091405** **Exp: 5/15**

10 ml **Store at –20°C**

Description: Ribonucleoside-vanadyl complex is a potent inhibitor of various ribonucleases (1,2,3). This complex is compatible with cell fractionation methods as well as sucrose-gradient centrifugations. This vanadyl complex is prepared from a modification of procedures by Lienhard using all four ribonucleosides (4). The 200 mM stock solution is reconstituted to a green-black clear solution by incubating the sealed vial at 65°C. Once open the entire sample should be aliquoted into smaller samples and frozen.

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.

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^3]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:

1. Berger, S. L. and Birkenmeier, C. S. (1979) *Biochemistry* 18, 5143–5149.
2. Gray, J. C. (1974) *Arch. Biochem. Biophys.* 163, 343–348.
3. Egberts, E., Hackett, P. B. and Traub, P. (1971) Hoppe-Zeyler's Z. *Physiol. Chem.* 358, 475–490.
4. Leinhard, G. E., Secemski, I. I., Koehler, K. A. and Lindquist, R. N. (1971) *Cold Spring Harbor Symp. Quant. Biol.* 36, 45–51.
5. Berger, S. L., Hithcock, N. J. M., Zoon, K. C., Birkenmier, C. S., Friedman, R. M. and Chang, E. H. (1980) *J. Biol. Chem.* 21, 4602–4608.

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

CERTIFICATE OF ANALYSIS

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