ProductInformation

RIBONUCLEOSIDE VANADYL COMPLEXES, 200 mM

Product No. **R 3380**

Lot 129H9085

Store below –20 °C

Product Summary
A 20 mM solution inhibits 0.00025 units/ml of RNase A.

Comments
SDS and EDTA or other chelating agents may dissociate and inactivate ribonucleoside vanadyl complexes.

Introduction
Ribonucleoside vanadyl complexes (RVC) have been used as ribonuclease inhibitor during cell lysis and cDNA production by reverse transcriptase. DNase I is not inhibited by 20 mM RVC and consequently DNA can be degraded with DNase I while using RVC to protect RNA from contaminating ribonucleases. RVC inhibit most nucleases with the exception of S1 nuclease, DNase I, and *Bacillus cereus* ribonuclease. RVC are **not** compatible with *in vitro* translation systems, but are tolerated when included with mRNA microinjected into frog oocytes.

Phenol extraction can be used to remove RVC from samples. If 8-hydroxyquinoline is included as an antioxidant with phenol, removal of RVC by successive phenol extraction is easily monitored. The orange colored phenol solution turns black as RVC are removed, but remains orange when all RVC have been extracted from the aqueous phase.

Suitability
Ribonucleoside vanadyl complexes at 20 mM final concentration, 50 mM Tris-HCl, pH 8.0 and 2 µg of tRNA were incubated with 0.0001-0.003 Kunitz units/ml of RNase A for 30 minutes at 37 °C in a 50 µl reaction. An aliquot of this reaction was analyzed by electrophoresis on a 10-20% linear gradient polyacrylamide gel. Ribonucleoside vanadyl complexes were found to inhibit approx. 0.0002 Kunitz units/ml of RNase A. Detection limit: Degradation by 3×10^{-6} Kunitz units of RNase A detectable.

Refences:

1. Berger, S.L., and Birkenmeier, C.S., Biochemistry, **18**, 5143 (1979).
2. Puskas, R.S., et al., Biochemistry, **21**, 4602 (1982).

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