PRODUCT INFORMATION

DNase I –DD0649

Product information for DD0649:

Description:

Deoxyribonuclease I (DNAse I) efficiently hydrolyzes single-stranded or double-stranded DNA in the presence of divalent cations, producing 3'- hydroxyl oligonucleotides. Useful in crucial RNA preparations from tissue or bacterial cell cultures, BBI's DNase I is a chromatographically purified preparation supplied as a lyophilized powder.

Activity:

Activity (Kunitz, Protein) @ 25^{o}C: ≥ 1800u/mg
RNase: None

DNase I is soluble in 0.15M Sodium Chloride at a concentration of 5mg/ml. Solution may lose 10% of its activity stored for one week in aliquots at -20^{o}C. The same solution at 2-8^{o}C can lose up to 20% activity.

DNase I remains active in solution between pH 5 and 7 up to 60^{o}C for at least five hours.

A divalent metal cation is required to activate DNase I, the most common one used being magnesium.

Procedure:

1. Add to an RNase-free PCR tube:
   - 1 µg of RNA sample
   - 49µl of 1X Reaction Buffer: 40mM Tris-HCl (pH 8.0), 2.5mM (up to 10mM) $MgSO_4$, 1mM (up to 10mM) $CaCl_2$
   - 1 µl of DNase I, 1 unit/ml*

*Refer to the Certificate of Analysis for the lot specific activity. To dissolve DNase I at a concentration of at least 1unit/ml, storage buffer is recommended: 50% Glycerol, 20mM Tris-Cl, pH 7.5, and 1 mM $MgCl_2$. This solution can be stored at -20^{o}C for at least one year.

Note: If starting material contains EGTA, EDTA, other chelating reagents, and/or high concentration of salts, higher concentration of Mg and Ca are recommended.

2. Incubate for 10~15 minutes at 37^{o}C

3. To stop the reaction, add 1 µl of Stop Solution to bind calcium and magnesium ions and to inactivate the DNase I.

Note:
The Stop Solution (20 mM EGTA) must be added before heating to prevent metal (Mg/Ca) ion catalyzed hydrolysis of the RNA. Heat at 70 °C for 10 minutes to denature both the DNase I and the RNA.

This product should not be used for digestions longer than 15 minutes or for digestions at temperatures higher than 37^{o}C, or the residual contaminating RNase activity will begin to degrade the RNA.

Source: Bovine pancreas.

Storage:
Store at –20°C. Avoid exposure to frequent temperature changes.