Proteinase K (solution), RNA Grade

Cat. No. 25530-049 **Size: 100 mg (5 ml)**
Conc.: ≥20 Units/mg **Store at -20°C (not frost-free)**

Description

Proteinase K (solution), RNA Grade is a nonspecific serine protease. It is active in the presence of metal ions, SDS, urea, chelating agents (*e.g.*, EDTA), sulfhydryl reagents, and trypsin or chymotrypsin inhibitors. It is stable over a wide pH range (4–12.5) (1), with optimal activity at pH 6.5-9.5. Activity can be stimulated by addition of denaturing agents (SDS ≤2.0% w/v and urea ≤4 M) (2). The temperature optimum for the enzyme is 65°C; it is twelve times more active at 65°C than at 25°C (1). Rapid denaturation of the enzyme occurs at temperatures above 65°C. Autolysis of the enzyme occurs increasingly at alkaline pH. However, proteinase K is not completely inactivated by autolysis. Some enzyme fragments continue to maintain their proteolytic activity, even after extensive autolysis.

Unit Definition

One unit is described as that amount of enzyme that liberates 1 mole of Folin-positive amino acid within one minute at 37°C using hemoglobin as a substrate.

Storage

Store Proteinase K (solution), RNA Grade at –20°C for long-term storage or at 4°C for up to 12 months.

Storage Buffer

20 mg/ml Proteinase K in 10 mM Tris-HCl, pH 7.5, with Ca+2 ion and glycerol as stabilizers.

Applications

Proteinase K is used to rapidly inactivate endogenous nucleases such as RNases and DNases when isolating RNA or DNA from tissues and cell lines (3, 4). This enzyme can also be used to remove nucleases in the preparation of tissue sections for in situ hybridization (5).

Quality Control

The Certificate of Analysis provides detailed quality control information for each product. Certificates of Analysis are available on our website. Go to www.invitrogen.com/support and search for the Certificate of Analysis by product lot number, which is printed on the box.

References

1. Ebeling, W. *et al.* (1974) *Eur. J. Biochem. 47, 91.*
2. Orth, H. D. (1976) *Kontakte 3, 35.*
3. Weigers, U and Hilz, H. (1972) *FEBS Lett. 23, 77.*
4. Weigers, U and Hilz, H. (1971) *Biochem. Biophys. Res. Commun. 44, 513.*
5. Angerer, L. M., Cox, K. H. and Angeror, R.(1987) *Methods in Enzymology 152, 649.*