GIBCO BRL

LIFE TECHNOLOGIES™

Product: Proteinase K (Fungal)

Cat. No.: 25530-015 **Storage Conditions:** 4°C

Lot No.:

Exp. Date:

Size: 100 mg; > 20 Units/mg

COMPONENTS:
25530-015 Proteinase K (Fungal) Lot No.

Description:
Proteinase K is a nonspecific serine protease. It is not inactivated by metal ions, chelating agents (e.g. EDTA), sulfhydryl reagents or by 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 and urea)(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 complete proteolytic activity, even after extensive autolysis.

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

Reconstitution:
Dissolve in 10 mM Tris HCl, pH 7.5, 20 mM Calcium chloride, and 50% glycerol. Store at -20°C. Alternatively, dissolve in 50 mM Tris HCl, pH 8.0, 1 - 5 mM Calcium acetate. Store at 4°C. Storage at -20°C in the absence of glycerol can lead to precipitation of the proteinase K. Bacterial growth can occur in solutions stored at 4°C over extended periods of time. Ca^{2+} can serve as a stabilizer to suppress autolysis.

Quality Control Assays:
This product has passed the quality specifications in endodeoxyribonuclease and exodeoxyribonuclease assays.

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). The enzyme can also be used to remove nucleases in the preparation of tissue sections for *in situ* hybridization (5).

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 153,* 649.