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Proteinase Low Temp

Solution (>200 units/mL), specific activity: >30 U/mg

	Cat#	M3116.0050	M3116.1000	M3107.0050	M3107.1000
Component					
Proteinase Low Temp		50 units	1000 units		
Proteinase Low Temp glycerol-FREE				50 units	1000 units

Product description

Proteinase Low-Temp for the digestion of proteins in cell lysates (tissue, cells from cell culture) and for the release of nucleic acids since it inactivates DNases and RNases very effectively.

Genaxxon Proteinase Low-Temp is a nonspecific endopeptidase derived from an arctic marine microbial source (*Pichia pastoris*). It has a broad substrate specificity and is easy to inactivate after use. Starting at a temperature of 55°C, the Genaxxon Proteinase Low-Temp is easy to heat-inactivate, making it ideal for heat-sensitive samples.

It is known that histones and other proteins shield nucleic acids from an optimal interaction with other DNA-binding proteins and enzymes. Genaxxon Proteinase Low-Temp is ideal for transforming chromatin and other compact nucleic acids into mere DNA. The enzyme is easily inactivated. This allows thermal inactivation at temperatures that provide RNA integrity and avoid the dissociation of dsDNA.

Proteinase Low Temp solution glycerol-FREE (M3107) is supplied in a buffer without glycerol for ease of implementation in applications where lyophilisation is required or in workflows where a lower viscosity is desirable.

Advantages:

- Easy to inactivate
- Active at high salt content
- Compatible with downstream analyses
- Glycerol-FREE option (M3107)

Product Specifications

Source	recombinantly produced in *Pichia pastoris*
Specific activity:	>30 units/mg
Form	Solution (> 200 units/mL), glycerol-free option (M3107)
Stability at -20°C	M3116 up to 2 years; M3107 up to 1 year
Optimal pH for storage	6-9

Product quantity

One unit is defined as the amount of enzyme that produces one µmol 4-nitroaniline (extinction coefficient 8.8 mM-1 at 410 nm) at 25°C, pH 8.0 per minute (buffer conditions 50 mM Tris-HCl pH 8.0, 1% DMSO, 1 mM Suc-Ala-Ala-Pro-Phe-pNA)

Quality Control

dsDNA endonuclease activity: Proteinase Low-Temp is tested in a reaction containing a supercoiled plasmid for 4 hours at 37°C. No conversion of closed circular DNA to nicked DNA determined by no visible change in band pattern from control sample by agarose gel electrophoresis.

ssDNA endonuclease activity Proteinase Low-Temp is tested in a reaction containing M13 ssDNA for 4 hours at 37°C. No conversion of closed circular DNA to open linearized DNA determined by no visible change in band pattern from control sample by agarose gel electrophoresis.

RNase activity Proteinase Low-Temp is tested in a reaction containing a RNA transcript for 4 hours at 37°C. No RNase activity determined by no visible change in band pattern from control sample by agarose gel electrophoresis.

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Activity / Activity optimum:
The Proteinase Low-Temp is most active in the temperature range of 25°C- 40°C at pH 7-10.
Proteinase Low-Temp is not dependent of divalent cations such as Calcium (Ca2+) for its activity and is therefore also active in buffers containing EDTA and DTT (<40°C reaction temperature!).It is also compatible to SDS (0.2-1%) and Urea (1-5M) as buffer additives.

Recommended inactivation conditions:
Typically 15-30 minutes at 60°C (inactivation by denaturation).
Inactivation temperature and time can be adjusted to suit desired application or stringency on residual protease activity.
Additionally, Proteinase Low-Temp is susceptible to EDTA or DTT at elevated temperature (>40°C). For this EDTA and DTT will give an additional effect on the inactivation.

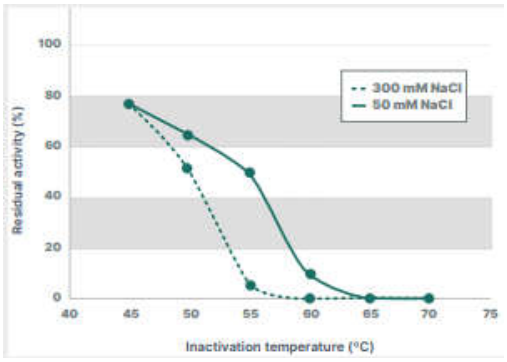

Fig. 1: Proteinase Low-Temp is easy to inactivate after use.

Inhibitors:
General Serine protease inhibitors such as PMSF.

Instructions for use:

Optimal stability and storage condition is between pH 6–9. Genaxxon Proteinase Low-Temp (M3116) is stable upon storage at -20°C for up to 2 years. Proteinase Low Temp glycerol-FREE (M3107) is stable upon storage at -20°C for up to 1 year. Storage at -20°C is recommended!
Avoid repeated freeze-thaw cycles!
The optimal enzyme activity is between pH7 and pH10.
Recommended temperature range for the digestion assay is 25°C - 40°C.

Genaxxon Proteinase Low-Temp is suitable for the digestion of proteins in the presence of SDS (0.2-1%) and urea (1-5M). The enzyme tolerates 500mM guanidine thiocyanate and 1% Triton X-100 (>50% activity). There is no significant loss of activity at 400mM NaCl.

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