ArcticZymes Proteinase

ArcticZymes Proteinase is an unspecific endopeptidase originating from an Arctic marine microbial source. It has broad substrate specificity and is easy to inactivate after use.

Histones and other proteins are known to protect nucleic acids from interacting optimally with other DNA binding proteins and enzymes. ArcticZymes Proteinase is ideally suited for transforming chromatin and other dense nucleic acids to naked DNA. The enzyme is easy to heat-inactivate. This allows thermal inactivation at temperatures allowing RNA integrity as well as avoiding dissociation of dsDNA.

Easy to inactivate

Active in high salt

Compatible with downstram analysis

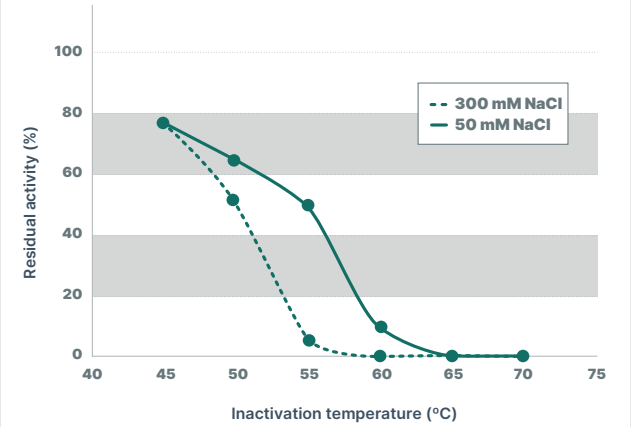

Fig 1. ArcticZymes Proteinase is easy to inactivate after use

ArcticZymes Proteinase is easy to inactivate after use. The figure shows remaining activity after incubating the ArcticZymes Proteinase at indicated temperatures for 30 minutes in presence of low (solid line) or moderate salt concentrations (dotted lined). Residual activity relative to samples kept on ice.

Inactivation

Recommended inactivation conditions are incubating the enzyme at 60°C for 15–30 min. Inactivation temperature and time can be adjusted to suit desired applications or stringency on residual protease activity. ArcticZymes Proteinase is susceptible to EDTA and DTT at elevated temperatures (>40°C), allowing their use upon inactivation.

Optimal reaction conditions

- Highly active in a temperature range of 25-40°C between pH 7 – 10.
- Active at high salt concentrations.
- Compatible to buffer additives: SDS (0.2-1%) and Urea (1 -5 M).
- Tolerates 500 mM Guanidine Thiocyanate and 1% Triton X-100 (>50% activity).

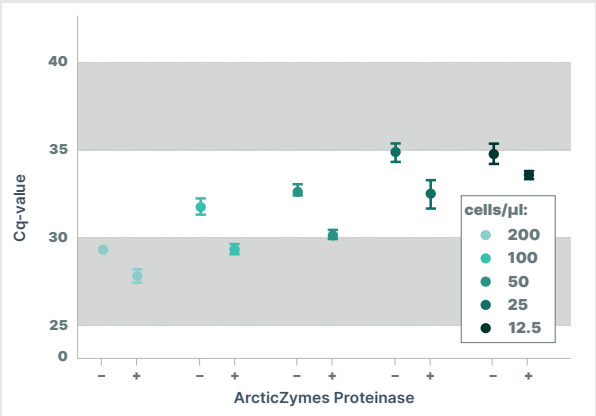

Fig 2. ArcticZymes Proteinase improves detection of gDNA in direct DNA analysis

ArcticZymes Proteinase improves detection of gDNA in single cells preparations. The indicated number of human cells were lysed in 200 µl single cell lysis buffer supplemented with 7.5 U/ml AZ Proteinase using no-proteinase buffer as reference. A 1 µl of lysate was used directly in 10 µl qPCR's to quantify human gDNA.

Inhibitors

The enzyme is inhibited by general serine protease inhibitors, such as PMSF.

Storage and stability

Optimal stability and storage condition is between pH 6–9. The enzyme is stable upon storage at -20°C for > 1 year. ArcticZymes Proteinase is also stable upon storage at 4°C and room temperature for 1 year. ArcticZymes Proteinase is stable at dilute concentrations (<0.1 mg/ml).

Ordering information

	Article no.	Pack size*	Concentration
ArcticZymes Proteinase	71600-201	50 U	<200 U/ml
	71600-110	1000 U	<200 U/ml
	71600-100	Custom	Custom

One unit of ArcticZymes Proteinase is defined as the amount of enzyme that produces 1 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).

Your OEM Partner to deliver novel solutions for genomics and proteomics.

Quality

ArcticZymes is dedicated to the quality of its products and is certified according to ISO 13485:2016. ArcticZymes offers the convenience of providing standard bulk enzymes as off the shelf products. In addition, ArcticZymes offers enzymes in customized formats. For additional information, please contact us.

Additional information

We are pleased to provide data and information relating to ArcticZymes Proteinase. Available data includes stability, buffer storage conditions, pH, and specific activity data. For more information, please check our website www.arcticzymes.com.

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