HL-Nuclease

New Higher Standard in Biologics Purification!

NEW PRODUCT

- *Low-temperature activity to decrease production costs and protect your product!*
- *Efficient nucleic acid digestion in most demanding purification buffer systems!*
- *Irreversible inactivation at low temperature (52°C) to secure biological products' integrity!*

Designed for difficult-condition applications:

- **high salt concentration**
- **presence of detergents and other bioprocessing additives**
- **active at low temperatures**
- **basic/acidic pH environment**

blirt **Enzymes as you need**

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Overview

HL-Nuclease is a 28.4 kDa, cold-active, heat-labile endonuclease produced in *Escherichia coli*. Enzyme originates from the psychrophilic bacterium and digests all types of DNA and RNA substrates at different buffer conditions and broad range of temperatures. It remains active even at 0°C and high-salt content environment. It is particularly useful for removing contaminating nucleic acids during purification of different proteins in laboratory and manufacturing workflows.

Applications

- → **Purification of biologics from residual NA in Pharma manufacturing.**
- → **Purification of recombinant proteins and enzymes for research and diagnostic use.**
- → **Removal of NA from molecular biology reagents in demanding systems.**
- → **Reduction of viscosity in samples (production, automation).**

Features and advantages

- → **Highly active in the broad range of temperatures (10-45°C)**
- → **Extreme nuclease activity in high-salt buffers (500 mM NaCl or KCl) - Fig.2.**
- → **Highly active in typical buffers and growth media - Fig.1,2,3.**
- → **Thermal inactivation at lower temperature compared to other nucleases (15 min. at 52 °C and 1 mM DTT).**

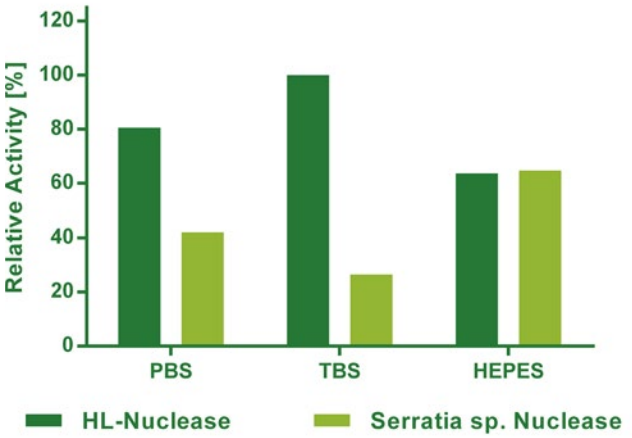

Figure 1. The relative activity of HL-Nuclease compared to *Serratia marcescens'* nuclease in different buffers. The reactions were carried out in the selected most popular buffers with 10 U/ml of each enzyme at 37°C. The activity of HL-Nuclease in TBS (50 mM Tris-HCl, 150 mM NaCl, 5 mM $MgCl_2$, pH 8.0) was taken as 100% in this relative comparison. In case of PBS and TBS significant advantage of BLIRT's HL-Nuclease is visible.

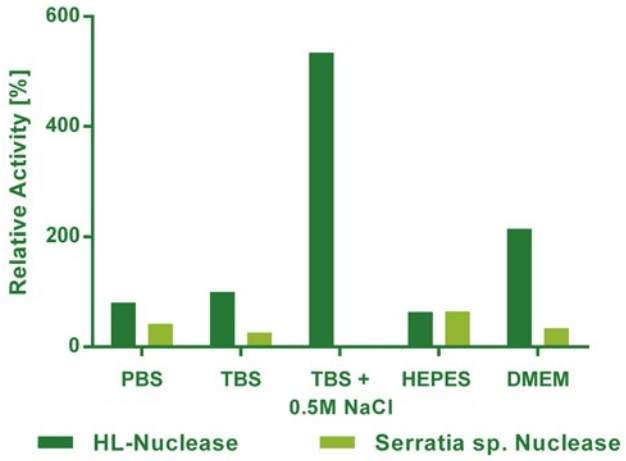

Figure 2. The relative activity of HL-Nuclease compared to *Serratia marcescens'* nuclease at different salt concentrations (DMEM - commonly used mammalian cell culture medium that contains 100 mM NaCl). This graph shows extreme increase of BLIRT's HL-Nuclease activity in case of NaCl addition . High salts systems are especially effective in proteins purification.

Additives	Tolerance level
NaCl	up to 1.5 M
Urea	up to 1 M
Imidazole	up to 0.3 M
Ammonium sulfate	up to 0.1 M

Figure 3. Tolerance to most popular purification buffers' additives. BLIRT's HL-Nuclease retains its activity in the broad range of listed additives' concentrations.

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