Quick-Start Protocol

March 2024

Saltonase®

Saltonase (cat. nos. EN32-050, EN32-250, EN32-B) is a 39.4 kDa recombinant endonuclease produced in *Escherichia coli*. Derived from psychrophilic bacteria, Saltonase exhibits high efficacy in the digestion of diverse DNA and RNA substrates. Its enzymatic activity remains robust under challenging conditions, such as elevated salt concentrations, extremes of pH, and temperature. These attributes make Saltonase particularly valuable for the removal of unwanted nucleic acid contaminants during the purification of proteins in both laboratory and biomanufacturing workflows.

For optimal performance and stability, Saltonase should be shipped on dry ice and stored at –20°C in a freezer.

Further information

- Safety Data Sheets: **www.qiagen.com/safety**
- Technical assistance: **support.qiagen.com**

Notes before starting

- Saltonase is suitable for wide-ranging applications in the biopharmaceutical and biotechnology industries, demonstrating versatility in critical processes. It is particularly instrumental in the purification of biologics, effectively eliminating residual nucleic acids during biopharmaceutical manufacturing. Saltonase proves indispensable in addressing the crucial need for viscosity reduction in biological samples, a key consideration in bioproduction and automated processes. Beyond this, its significance extends to the purification of recombinant proteins and enzymes.

Considerations for use

- Saltonase concentration is ≥250 U/µL.

- The optimal and final concentration of Saltonase in a reaction depends on various factors including the extent of nucleic acids contamination, incubation temperature and duration, salt concentration, pH, and the presence of other compounds in the reaction mixture (refer to Figure 1.A–D). Notably, the quantity of Saltonase required differs significantly between total nucleic acids removal and viscosity reduction applications. Accurate determination of the requisite amount of Saltonase and optimal incubation conditions is essential and is recommended to be conducted experimentally. For general guidance, we propose employing a range of 5–100 units of Saltonase per 1 mL of the reaction mixture or lysate, with an incubation temperature ranging from 25–37°C and a duration of 30–60 min. This empirical approach ensures the efficacy of Saltonase in achieving desired outcomes across diverse experimental conditions.
- To achieve optimal Saltonase activity, a minimum concentration of 1 mM Mg^{2+} ions are required.
- The inactivation of Saltonase strictly depends on factors including the concentration of the reducing agent, inactivation time, and temperature. We advise a methodical inactivation process achieved through incubation at 45°C for a duration of 30 min or at 50°C for 15 min. This inactivation protocol is most effective when employing reducing agents such as DTT (2–5 mM).

  Note: The enzyme requires at least 1 mM DTT to be completely inactivated.

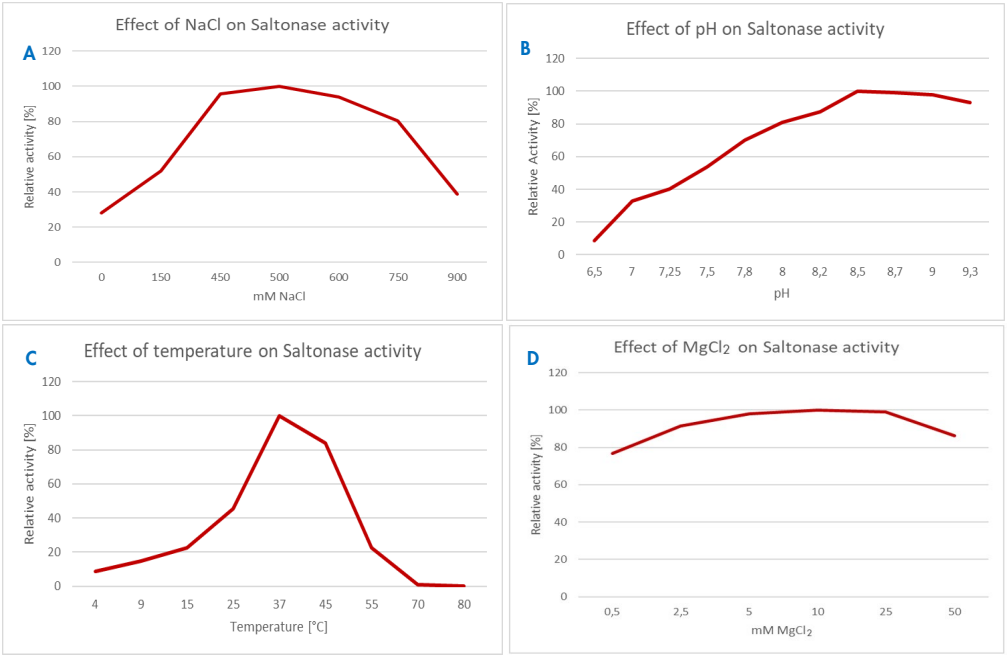

Figure 1. (A) The Relative Activity* of Saltonase is assessed across a spectrum of salt concentrations ranging from 0 to 0.9 M NaCl, maintaining a consistent pH of 8.5, temperature set at 37°C, and $MgCl_2$ concentration held at 5 mM. **(B)** The Relative Activity* of Saltonase is assessed across varying pH levels spanning 6.5 to 9.3, while maintaining a constant NaCl concentration of 500 mM, a temperature of 37°C, and $MgCl_2$ concentration at 5 mM. **(C)** The Relative Activity* of Saltonase is assessed over a temperature range of 4 to 80°C, with a consistent NaCl concentration of 500 mM, pH set at 8.5, and $MgCl_2$ concentration maintained at 5 mM. **(D)** The Relative Activity* of Saltonase is assessed across different $MgCl_2$ concentrations from 0.5 to 50.0 mM, with a constant NaCl concentration of 500 mM, pH at 8.5, and temperature set at 37°C.

* The relative activity is defined as the ratio between the performance of a test sample and that of Saltonase under its optimal conditions, as determined at NaCl concentration of 500 mM, pH 8.5, temperature at 37°C, and $MgCl_2$ concentration of 5 mM.

Document Revision History

Date	Changes
03/2024	Initial release.

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual.