

Salt Active Nuclease (SAN)

- Non-specific endonuclease
- Optimum activity at high salt concentration (0.5 M)
- Active at low temperatures (20% at 6°C)
- Broad pH range
- Temperature stable

“General nuclease with optimum activity at 0.5 M NaCl”

Properties

Salt Active Nuclease is an unspecific nuclease cleaving double- and single-stranded DNA and RNA. It is active at a broad pH range and unlike other unspecific nucleases it has optimum activity at high concentrations of salt, and also good activity at high pH. These features make the Salt Active Nuclease ideal for use in removal of DNA from cell extracts and protein samples. Degrades DNA vs RNA in a 10:1 ratio.

Activity determination: 1U = $\Delta A_{260} = 0.001/\text{min}$ at 37°C in a buffer consisting of 25 mM Tris-HCl, pH 8.5 (25°C), 5 mM MgCl₂, 0.5 M NaCl, 50 µg/ml calf thymus DNA (D-1501, Sigma). Total reaction volume of 1 ml.

Specific activity	Ca. 7.6×10^6 Units/mg
pH optimum	9
Salt optimum	0.5 M
Storage buffer	25 mM Tris-HCl pH 7.5, 5 mM MgCl ₂ , 0.5 M NaCl, 0.01% Triton, 50% (v/v) glycerol
Reaction buffer	25 mM Tris-HCl, pH 8.5 (25°C), 5 mM MgCl ₂ , 0.5 M NaCl, 50 µg/ml calf thymus DNA



Salt Active Nuclease has optimum activity at high salt and pH

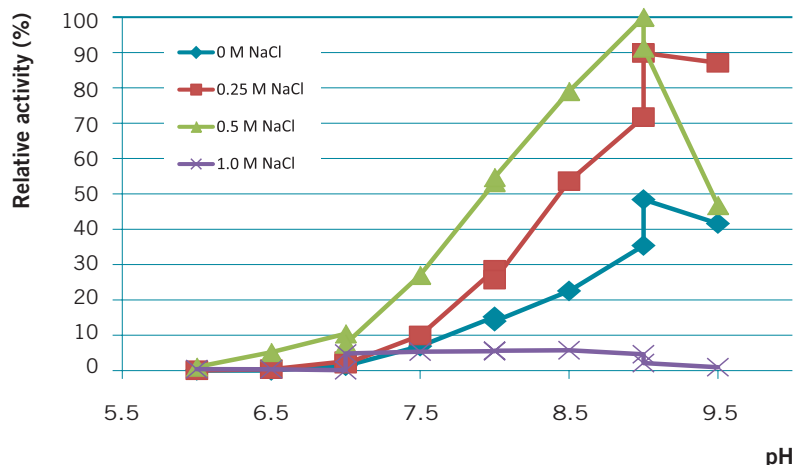


Figure 1 Relative activity of SAN at different pH and salt combinations.

Salt Active Nuclease is active in various buffers

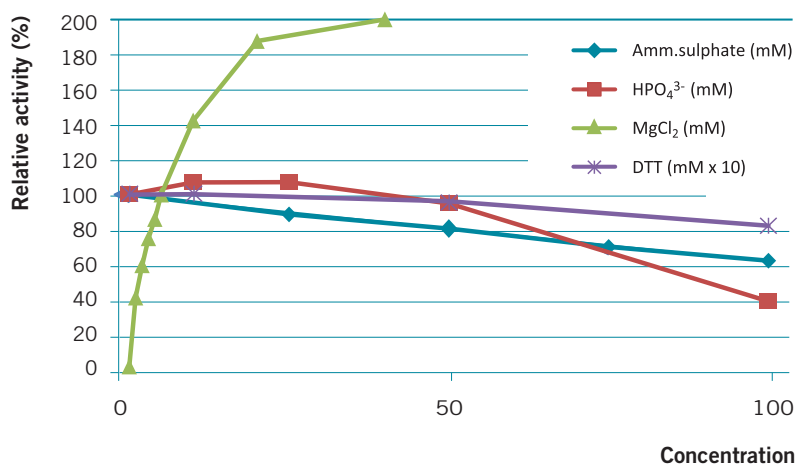
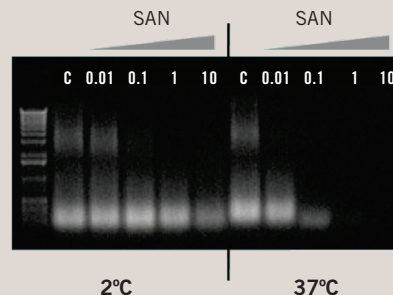


Figure 2 Relative SAN activity in presence of various common buffer components in SAN enzyme assay. One hundred percent activity is set at standard assay conditions (25 mM Tris-HCl, pH 8.5, 5 mM MgCl₂, 0.5 M NaCl).

SAN efficiently removes DNA from *E. coli* cell lysates

0.25 M NaCl



0.50 M NaCl

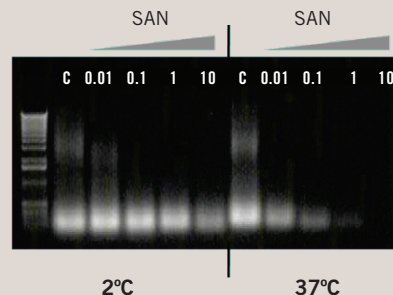


Figure 3 Removal of DNA from *E. coli* lysates. SAN (μ g) was added to 0.1 ml *E. coli* cell lysate containing 75 μ g/ml DNA. (Lysis buffer: 50 mM Tris-HCl, pH 8, 0.25 or 0.5 M NaCl, 0.1 mg/ml lysozyme, 10 mM MgCl₂). Reactions were incubated at 2°C or 37°C for 30 minutes, followed by addition of EDTA to terminate the reactions and agarose gel electrophoresis analysis.

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