**Description:** BAL-31 exonuclease degrades both 3’ and 5’ termini of duplex DNA without generating internal scissions. The enzyme is also a highly specific single-stranded endonuclease which cleaves at nicks, gaps and single-stranded regions of duplex DNA and RNA (1,2).

**Source:** Purified from the culture medium of Alteromonas espejiana BAL-31. Contains a mixture of “fast” and “slow” species of the enzyme (3).

**Applications:**
- Progressive shortening of double-stranded DNA fragments at both termini (4)
- Restriction site mapping (2).

**Supplied in:** 50 mM NaCl, 10 mM Tris-HCl (pH 8.0), 1.5 mM CaCl₂, 1.5 mM MgCl₂, 0.25 mM EDTA, 200 µg/ml BSA and 50% glycerol.

**Reagents Supplied with Enzyme:**
- 2X Nuclease BAL-31 Reaction Buffer.

**Reaction Conditions:**
- 1X Nuclease BAL-31 Reaction Buffer: 600 mM NaCl, 12 mM CaCl₂, 12 mM MgCl₂, 20 mM Tris-HCl, 1 mM EDTA, pH 8.0 @ 25°C

**Unit Definition:** One unit is defined as the amount of enzyme required to remove 200 base pairs from DNA (40 µg/ml) in 10 minutes at 30°C.

**Notes On Use:**
- Duplex products of the exonuclease are a mixture of blunt and staggered ends. This mixture can be cloned directly, although maximal ligation efficiency requires repairing the staggered ends with a suitable DNA polymerase.
- If necessary, the enzyme may be diluted in reaction buffer prior to use.
- Activity is linear with enzyme concentration.

**References:**

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