Lucigen®

Simplifying Genomics

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Uracil *N*-Glycosylase (UNG)

Cat. No. UG131K

1. Introduction

Uracil *N*-Glycosylase (UNG) hydrolyzes the *N*-glycosidic bond between the deoxyribose sugar and uracil in DNA that contains deoxyuridine in place of thymidine.[1] The enzyme is fully active at 37°C, 42°C, and 50°C.

UNG is active on both single- and double-stranded DNA that contains uracil, but has no activity on RNA or 2′-deoxyuridine-5′-monophosphate. The enzyme does not have AP endonuclease activity. Uracil-containing DNA can be synthesized *in vitro* with various DNA polymerases in reactions that contain dUTP in place of dTTP.[2]

UNG is supplied with a dilution buffer for applications requiring lower concentrations of enzyme.

2. Product Designations and Kit Components

Product	Kit Size	Catalog Number	Reagent Description	Part Numbers	Volume
Uracil *N*-Glycosylase (UNG)	1,000 Units	UG131K	Uracil N-Glycosylase (UNG; 1 U/µL)	E0037-1D1	1 mL
			UNG Storage Dilution Buffer	SS000250-D2	10 mL

3. Product Specifications

Storage: Store only at –20°C in a freezer without a defrost cycle.

Storage & Dilution Buffers: UNG is supplied in and with, a 50% glycerol solution containing 50 mM Tris-HCl (pH 7.5), 100 mM NaCl, 1.0 mM dithiothreitol, 0.1 mM EDTA, and 0.1% Triton® X-100.

Unit Definition: One unit of UNG catalyzes the release of 1 nmol of uracil from uracil-containing DNA in 1 hr at 37°C in 50 mM Tris-HCl (pH 9.0) and 20 mM ammonium sulfate.

Contaminating Activity Assays: UNG is free of detectable exo- and endonuclease, and RNase activities.

4. Suggested Protocol for Degradation of DNA Containing Uracil

1. Briefly equilibrate samples containing DNA synthesized with dUTP at 37°C.
2. Dilute an appropriate amount of UNG 10-fold with Dilution Buffer. Diluted enzyme may be stored for 2-4 weeks at –20°C in a freezer without a defrost cycle.
3. To a 50 µL reaction, add 1 µL (0.1 U) of the diluted UNG.
4. Incubate at 37°C for 15-30 minutes to release uracil from the DNA.
5. If required, clean up the DNA using a spin column, phenol/chloroform extraction, or AMPure® beads.

5. References

1. Lindahl, T. *et al.*, (1977) *J. Biol. Chem.* **252**, 3286.
2. Longo, M.C. *et al.*, (1990) *Gene* **93**, 125.

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