Glycerol-Free UDGase (HC)

Product Handling Guide

Shipping:	On Dry/Blue Ice
Catalog numbers:	MDX216
Batch No.:	See vial
Concentration:	20 U/µL

Store at –20 °C

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Storage and stability:
Glycerol-Free UDGase (HC) is shipped on dry/blue ice. On arrival store at -20 °C for optimum stability. Repeated freeze/thaw cycles should be avoided. Thawing during transportation does not affect the product performance. Solutions should be mixed/equilibrated after each thawing to avoid phasing.

Expiry:
When stored under the recommended conditions and handled correctly, full activity of the kit is retained until the expiry date on the outer box label.

Safety precautions:
Read and understand the SDS (Safety Data Sheets) before handling the reagents. Hardcopies of the SDSs will be provided with the first shipment, thereafter they will be available upon request.

Quality control:
Glycerol-Free UDGase (HC) activity is assayed by measuring the release of uracil from uracil-containing DNA template in comparison to a reference enzyme. Glycerol-Free UDGase (HC) and its components are extensively tested for activity and purity.

Notes:
This reagent has been manufactured under 13485 Quality Management System and is suitable for research or further manufactured use only.

Description

Glycerol-Free UDGase (HC) is an Uracil-DNA Glycosylase from *E. coli* that catalyzes the release of uracil from uracil-containing single-stranded or double-stranded DNA, but not from RNA or dTTP containing DNA. Glycerol-Free UDGase (HC) can prevent carry-over contamination by uracil containing PCR products and can be irreversibly inactivated by incubation at 95°C for 10 minutes.
Glycerol-Free UDGase (HC) is supplied in a glycerol-free storage buffer and can be dried when added to appropriate lyo-compatible reaction buffer to produce ambient temperature stable reaction mix.

Kit components

Table 1

Component
Glycerol-Free UDGase (HC), 20 U/µL

Users Guidelines

Degradation of Uracil containing DNA

1. Add 1 U of Glycerol-Free UDGase (HC) to a reaction with uracil-containing DNA substrate (up to 0.1 µg) in a 20 µL total reaction*.
**If required, dilute Glycerol-Free UDGase (HC) to appropriate concentration using Enzyme Dilution Buffer, 10x (MDX080; not supplied).*

2. Mix briefly and incubate at 37°C for 10 min

3. The enzyme can be irreversibly inactivated by incubation at 95°C for 10 min.

Associated Products

Product	Cat. No.
dUTP Mix, 50mM, Lithium Salt	MDX058
dUTP, 100 mM	MDX059
Enzyme Dilution Buffer, 10x	MDX080
Glycerol-Free UDGase (HC)	MDX216
Hi-throughput dUTP qPCR Mix	MDX031
Hi-throughput dUTP qPCR Lo-ROX	MDX060
Lyo-Ready dUTP 1-Step RT-qPCR Mix	MDX113
Lyo-Ready dUTP Only 1-Step RT-qPCR Mix	MDX166

Lyophilization & Post-Lyophilization User Guideline

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The guidelines in this document can help users avoid problems in lyophilization. For storage and stability, expiry and general handling of these product pre-lyophilization, please refer to the individual Product Handling Guides.

Safety precautions:

Read and understand the SDS (Safety Data Sheets) before handling the reagents. Copies of these SDSs are available on our website or upon request.

There are several advantages for lyophilization, including room temperature shipping and storage, extended shelf-life and increased flexibility in sample volume. In order to be compatible with lyophilization however, enzyme preparations must be glycerol-free and include specialized lyophilization-excipients that preserve the mixture as it is exposed to various lyophilization conditions including freezing, temperature ramps, vacuum and dehydration. An ideal lyophilization formulation should stabilize an enzyme in a freeze-dried format and allow very fast rehydration and reactivation of the enzyme preparations, without impacting its performance post rehydration.

Lyophilization

- The lyophilization cycle protocol in table 1 is suitable for lyophilization of the Glycerol-Free UDGase (HC) added to Lyo-Ready™ T4 DNA Pol Reaction Buffer, 5x in standard reaction tubes and plates. These parameters are provided as a guidance only and should be optimized to different user formats and systems.
- An annealing step can be added during the freezing step to assist crystallization of amorphous material.
- Combined primary and secondary drying time can be extended up to 24 hours.
- For product containing excipients, there should be no need to add any further excipients to assist lyophilization.

Table 1. Lyophilization guidelines

Step	Temperature	Time	Description
Freezing	+4 °C	10 min	Hold
	-45 °C	1.0 °C/min	Ramp
Primary Drying	-45 °C	180 min	Hold
	-40 °C	0.5 °C/min	Ramp
	-40 °C	720 min	Hold
Secondary Drying	+25 °C	0.5 °C/min	Ramp
	+25 °C	240 min	Hold

Post-Lyophilization

For maximum shelf-life, we suggest packaging lyophilized material under inert gas conditions (e.g. nitrogen or argon) and insert a desiccant sachet to improve stability. Pouches should be heat-sealed and labelled.

Technical Support

For any technical enquiries, please contact our Technical Support team via email at: mbi.tech@meridianlifescience.com

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