

[Cat. No.] **K-7501**

Introduction

Nucleases, such as DNase, are ubiquitous in laboratory environments and can interfere with a wide range of experiments. Even trace DNase contamination can undermine data reliability and lead to experimental failure.

AccuAlert™ DNase detection kit provides a sensitive and straightforward method for detecting DNases. It utilizes specialized probes that emit fluorescence upon DNase-mediated degradation. Results can be evaluated through visual inspection or quantified using a fluorometer.

To ensure the accurate identification of contaminated samples, the kit includes both negative and positive controls. It provides a simple and reliable way to verify nuclease contamination in laboratory reagents and supplies.

Applications

- Quality control of reagents
- Nuclease-free validation of labware
- Environmental monitoring of workspaces
- Pre-screening of samples for sensitive assays such as qPCR and NGS

Features and Benefits

- **Exceptional Sensitivity:** Detects as low as 0.005 U (10 pg) of DNase I, ensuring the identification of even the most minute traces of contamination.
- **Dual Detection Mode:** Offers the flexibility of high-sensitivity quantification via a fluorometer or rapid qualitative screening under UV light.
- **Rapid Results:** Provides clear results in as little as 15 minutes, allowing for quick environmental monitoring and routine quality control.
- **Verification with Controls:** The inclusion of positive and negative controls ensures a simple, reliable, and convenient way to interpret nuclease contamination.

Components

Cat. No.	K-7501
DNase sensor	1 tube (5 nmole/tube)
10X Reaction buffer	1 ml
DNase I	20 µl
TE Buffer	1 ml
Nuclease-free Water	1 ml

* **Note:** For research use only. Not for use in diagnostic or therapeutic procedures.

Storage

AccuAlert™ DNase detection kit should be stored at -20°C and maintain stability until the indicated shelf life.

Precautions

To prevent cross-contamination, always wear gloves and use nuclease-free filter tips in a dedicated clean workspace. All plasticware must be certified nuclease-free to avoid false-positive results.

Since the detection probes are light-sensitive, keep all reagents protected from direct light during handling. Gently vortex and centrifuge reagents before use. To maintain optimal sensitivity, minimize freeze-thaw cycles and aliquot the probes if necessary.

Online Resources



Korean



English

Visit our **product page** for additional information and protocols.

Ordering Information

Description	Cat. No
AccuAlert™ DNase detection kit	100rxn K-7501

Notice

Bioneer corporation reserves the right to make corrections, modifications, improvements and other changes to its products, services, specifications or product descriptions at any time without notice.

Explanation of Symbols

Catalog Number

Batch code

Manufacturer

Symbol for "CONSULT INSTRUCTIONS FOR USE"

Sufficient Reagents for X tests

Caution, consult accompanying documents

Caution, Potential Biohazard

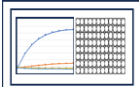
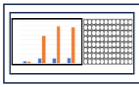
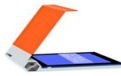
Research Use Only

Expiration Date

Storage Conditions (Temp.)

Symbol for "DO NOT REUSE"

Experimental Procedures

Method		Procedure Details																			
1	 Real-time measurement using a fluorometer	1. Completely dissolve DNase sensor in 1,000 µl TE Buffer.																			
		2. Prepare a 20-fold dilution of DNase I.																			
		3. Turn on fluorometer 96-well plate reader, setting the following parameters.																			
		<table><tr><th>Parameter</th><th>Setting</th></tr><tr><td>Mode</td><td>Kinetic</td></tr><tr><td>excitation/emission</td><td>550/595</td></tr><tr><td>Data collection</td><td>Intermittent, 1–5 min increments</td></tr><tr><td>Temperature/Time</td><td>37°C/15–60 min</td></tr></table>		Parameter	Setting	Mode	Kinetic	excitation/emission	550/595	Data collection	Intermittent, 1–5 min increments	Temperature/Time	37°C/15–60 min								
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		4. Dispense 10 µl of DNase sensor, 10 µl of 10X Reaction buffer to the intended wells of a black 96-well plate.																			
5. Add 80 µl of the test samples and mix.																					
<table><tr><th>Sample</th><th>Negative control</th><th>Positive control</th><th>Test sample</th></tr><tr><td>Number of wells</td><td>≥2</td><td>≥1</td><td>≤2</td></tr><tr><td>Test sample</td><td></td><td></td><td>10 µl~80 µl</td></tr><tr><td>DNase I</td><td></td><td>10 µl</td><td></td></tr><tr><td>Nuclease-free Water</td><td>80 µl</td><td>70 µl</td><td>(~80 µl *)</td></tr></table>		Sample	Negative control	Positive control	Test sample	Number of wells	≥2	≥1	≤2	Test sample			10 µl~80 µl	DNase I		10 µl		Nuclease-free Water	80 µl	70 µl	(~80 µl *)
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* Bring the volume to 80 µl with Nuclease-free Water.																					
6. Place the plate into the real-time fluorescence reader and start the measurement.																					
7. Monitor the real-time fluorescence increase relative to the negative control to determine contamination.																					
2	 Endpoint measurement using a fluorometer	1. Prepare the DNase sensor and DNase I (Refer to Method 1)																			
		2. Turn on fluorometer 96-well plate reader, setting the following parameters.																			
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		3. Dispense 10 µl of DNase sensor, 10 µl of 10X Reaction buffer, and 80 µl of the test sample (Refer to Table, Method 1) into a plate compatible with the fluorescence reader (pre-set to 37°C) or incubator for 15-60 min																			
		4. After incubation, transfer the plate to a fluorescence reader and measure the fluorescence values.																			
		5. Measurement is complete, determine the results based on the fluorescence increase.																			
		3	 UV Visual Analysis	1. Prepare the DNase sensor and DNase I (Refer to Method 1)																	
2. Dispense 10 µl of DNase sensor, 10 µl of 10X Reaction buffer, and 80 µl of the test sample (Refer to Table, Method 1) into a UV-transparent clear plate or tube compatible with incubator.																					
3. After incubation, visualize the fluorescence by illuminating the sample tube with long-wave UV light on a transilluminator.																					
4. Contamination is indicated by a fluorescence intensity visibly higher than the negative control.																					