AccuAlert™ RNase detection kit

[Cat. No.] K-7502

Introduction

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

***AccuAlert*™ RNase detection kit** provides a sensitive and straightforward method for detecting RNases. It utilizes specialized probes that emit fluorescence upon RNase-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 0.5 pg of RNase A, 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 30 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-7502
RNase sensor	5 nmole
10X Reaction buffer	1 ml
RNase A	100 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*™ RNase 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

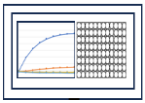
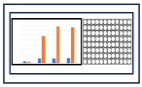
Description		Cat. No
***AccuAlert*™ RNase detection kit**	100rxn	K-7502

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

Experimental Procedures

<table>
<tr><th colspan="2">Method</th><th>Procedure Details</th></tr>
<tr><td>1</td><td> 
Real-time measurement using a fluorometer</td><td>
1. Completely dissolve RNase sensor in 1,000 µl TE Buffer.
2. Prepare a 100-fold dilution of RNase A using Nuclease-free Water.
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℃/15~60 min</td></tr>
</table>
4. Dispense 10 µl of RNase 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>RNase A</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>
* 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.
8. A fluorescence intensity 2–3 times greater than the negative control indicates RNase contamination.
9. The experimental results are considered valid if the positive control is 5–100 times above background.
</td></tr>
<tr><td>2</td><td> 
Endpoint measurement using a fluorometer</td><td>
1. Prepare the RNase sensor and RNase A (Refer to Method 1)
2. 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>End-point</td></tr>
<tr><td>excitation/emission</td><td>550/595</td></tr>
</table>
3. Dispense 10 µl of RNase 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. Once the measurement is complete, determine the results based on the fluorescence increase.
</td></tr>
<tr><td>3</td><td> 
UV Visual Analysis</td><td>
1. Prepare the RNase sensor and RNase A (Refer to Method 1)
2. Dispense 10 µl of RNase 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.
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