

Red tide causative species Detection Kit

Product name	Contents	Price	Code No.
Red tide causative species Detection Kit 1 - <i>Karenia mikimotoi</i> -	24 tests	JPY 36,000	NE0161
Red tide causative species Detection Kit 2 - <i>Chattonella</i> spp.-	24 tests	JPY 36,000	NE0171

These kits are the product to detect red tide causative plankton by isothermal amplification reaction using LAMP (Loop-mediated Isothermal Amplification) method. Red tide causative plankton is identified by amplification of a part of genomic DNA. LAMP is fast and easy DNA amplification method which is also used for the diagnosis of influenza virus and detection of other infectious pathogens, exhibiting excellent specificity and sensitivity. These kits enable all reaction processes to progress at a constant temperature with a simple container such as a Thermos pot.

Red tide causative plankton

Several hundred kinds of phytoplankton lives in the Japanese sea, and approximately 20 kinds bring serious damage for fishery. These kits specifically detect *Karenia mikimotoi* or a group of *Chattonella* species, *Chattonella marina* var. *antiqua* and *Chattonella marina* var. *ovata*, as a harmful kind. The early detection of red tide contributes to prevention of damage expansion in fishery.



Karenia mikimotoi



Chattonella marina var. *antiqua*

Product overview

All the necessary contents are included

Other reagents are not necessary

Simple and easy

Extract DNA from planktons easily and start immediately

Highly sensitive testing

Even single plankton cell is detectable

Result can be read visually

Visible fluorescence indicates positive

Low risk of contamination

No electrophoresis is needed



Components: All the reagents for detection are included

Detection Reagent A
Detection Reagent B
Enzyme Solution

Fluorescent Detection Solution
Positive Control
Mineral Oil

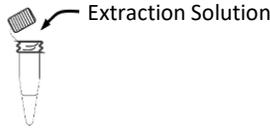
Extraction Solution
Extraction tube
Detection Tube

Please prepare for the filter for filtration.



Simplified procedure

1 Dispense Extraction Solution into microtube (200 µL per tubes)



2 Set a filter to a filter holder (Filter: 1.0-1.2 µm, 25 mm)



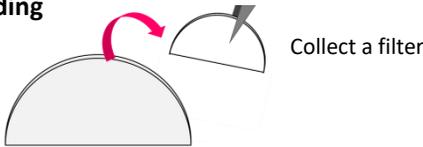
3 Draw up seawater 10 mL or more to a syringe

4 Connect a syringe to a filter holder

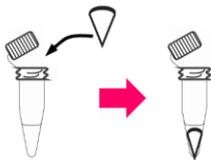


5 Filtrate of the seawater

6 Put a filter on the filter paper and collect it by folding



7 Completely soak the folded filter into Extraction Solution



8 Keep it warm at 95°C for 15 minutes (DNA sample)

9 Prepare Test Solution

Reagents	1 test	8+1 tests*
Detection Reagent A	20.0 µL	180.0 µL
Detection Reagent B	1.0 µL	9.0 µL
Fluorescent Detection Solution	1.0 µL	9.0 µL
Enzyme Solution	1.0 µL	9.0 µL
Total	23.0 µL	207.0 µL

* Prepare 1 test extra solution to prevent deficiency of solution when dispensing.

10 Dispense Test Solution into each Test Tube (23.0 µl per tube)

11 Add DNA sample prepared in process 1-8 to each Test Tube (2.0 µl per tubes)

12 Add Mineral Oil (20.0 µl per tube)

13 Incubate at 62°C or 66°C for 60 minutes (DNA amplification)

Karenia mikimotoi: 62°C *Chattonella* spp.: 66°C

14 Heat at 80°C for 2 minutes (Enzyme inactivation)

15 Judgement of negative or positive with fluorescence

Visual detection

UV transilluminator

Negative: Light Red Positive: Vivid Green

Example for detection

Negative Positive

Operation movie is available (Japanese)



Full



Short



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These kits were developed under the collaborative investigation with the Japan Fisheries Research and Education Agency (FRA).