Development of the Newly Improved Detection Kit for Norovirus in the Environment

journal or publication title	神戸常盤大学紀要. 別冊
number	12
page range	8-8
year	2018-10-31
URL	http://id.nii.ac.jp/1492/00000991/

2-E-3

Development of the Newly Improved Detection Kit for Norovirus in the Environment

Naoyuki Nishimura[1)]
Hidetomo Samori[1)]

Norovirus (hereinafter called NV) is the commonest cause of gastrointestinal infectious disease in Japan and in many other countries, causing diarrhea and vomiting in millions of cases worldwide annually. Eating of polluted shellfish was the mainstream of the NV infection previously. However, NV infection caused by human-mediated contamination has been becoming the mainstream of the cases recently. And the environmental persistence of the NV is thought to contribute to its transmissibility. Therefore, we consider both the environmental investigation/monitoring of NV and the effective disinfection of this virus as extremely important for preventing NV infection. The purpose of this study was to develop simple methods for effective recovering human NVs from the environment and rapid detecting their RNA.

This study was conducted on human NV GI and/or GII positive feces specimens in distilled water as the samples. The viruses were recovered using the improved polyethylene glycol (PEG) precipitation, followed the detection by direct reverse transcription (RT) quantitative PCR which we originally developed.　As a result, it became possible to recover and detect NV in almost 100% probability within 2 hrs.

Ultimately, we have been continuing the research and development to build the system of preventing NV infection from environment with a cycle consisting of the detection of NV in the environment, the disinfection of this virus and the confirmation of its effect.

< This research is undertaken with the support as an industry-academic cooperation project between Kobe Tokiwa University and Japan Institute of Food Ecology, Inc. >

1） Department of Medical Technology, Faculty of Health Sciences