Promega

Product Application

Automated purification of Bacteria or Virus Nucleic Acids from Cerebrospinal Fluid (CSF)

DNA or RNA extraction from bacteria or virus in cerebrospinal fluid (CSF) samples using the Maxwell® RSC Viral Total Nucleic Acid Purification Kit on the Maxwell® RSC instrument

Kit: Maxwell® RSC Viral Total Nucleic Acid Purification Kit (Cat.# AS1330)

Analyses: qPCR and RT-qPCR

Sample Type(s): Human cerebrospinal fluid (CSF) spiked with *E. coli*, *L. innocua,* Cytomegalovirus (CMV) or Zika virus

Input: 200µl human CSF

This protocol was developed by Promega Applications Scientists and is intended for research use only.

Users are responsible for determining suitability of the protocol for their application.

For further information, see Technical Manual TM420, available at: **www.promega.com/protocols**

or contact Technical Services at: **techserv@promega.com**

Materials Required:

- Maxwell® RSC (Cat.# AS4500) or RSC 48 (Cat.# AS8500) Instruments
- Maxwell® RSC Viral TNA Purification Kit (Cat.# AS1330)

Protocol:

1. 200µl of pathogen-spiked CSF was processed as described in Technical Manual TM420, Maxwell® RSC Viral Total Nucleic Acid Purification Kit Technical Manual.
2. 200µl of spiked CSF and 200µl of lysis buffer were combined.
3. 20µl of Proteinase K was added to each sample and vortexed for 10 seconds.
4. Samples were incubated for 10 minutes at room temperature, and then at 56˚C for 10 minutes.
5. The entire volume of lysate was loaded into well #1 of the Maxwell® cartridge and processed using the Maxwell® RSC Viral TNA Purification method.

Results:

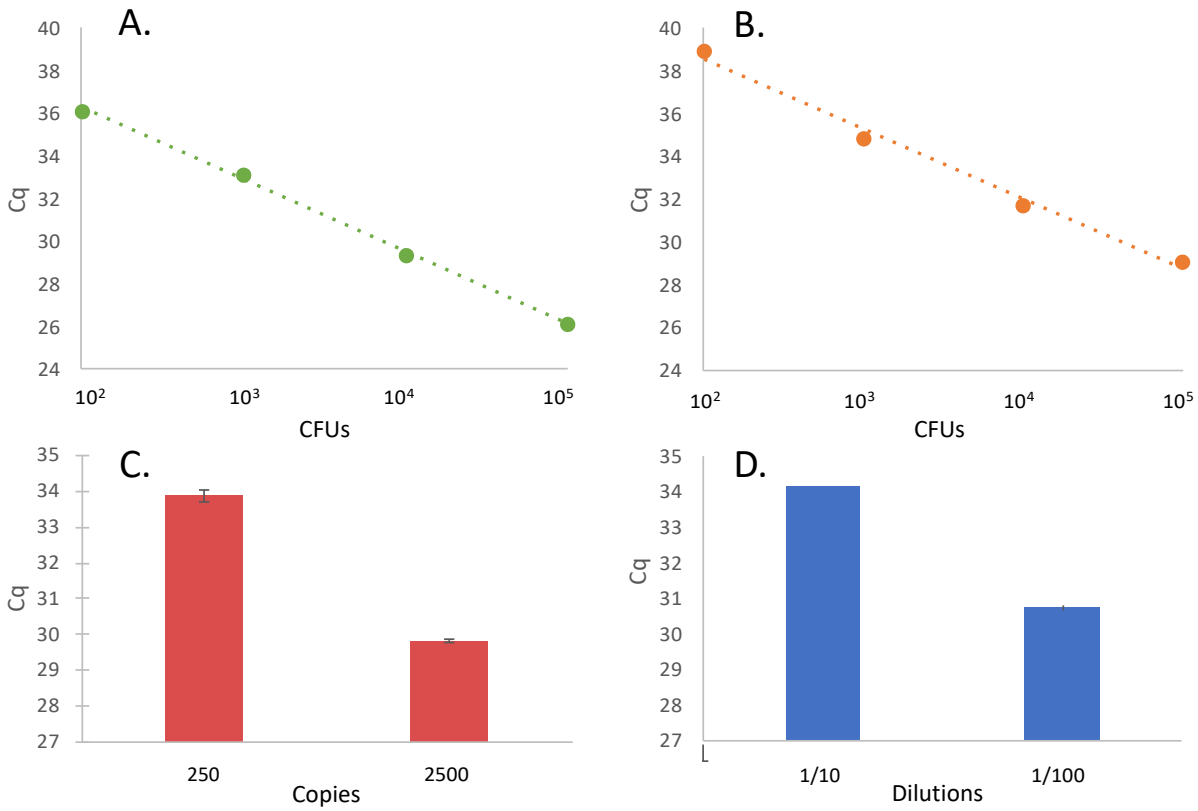

Figure 1. Amplification of pathogen nucleic acid extracted from CSF samples spiked with *E. coli*, *L. innocua*, CMV and Zika virus purified using the Maxwell® RSC Viral Total Nucleic Acid Purification Kit. Spiked samples were purified as described in the methods section, and qPCR amplification was used to assess yield. All amplifications were performed with 2µl of the extracted nucleic acid in a 20µl reaction using GoTaq® Probe qPCR (Cat.# A6101) or GoTaq® Probe 1-Step RT-qPCR System (Cat.# A6120) with pathogen-specific primers/probes. **Panel A.** Linear recovery of *E. coli* DNA over a 4-log input range. **Panel B.** Linear recovery of *L. innocua* DNA over a 4-log input range. **Panel C.** Recovery of CMV DNA. **Panel D.** Recovery of Zika RNA. Data represented as the mean ± standard deviation for $n = 3$.