**Extended data**

Fig S1

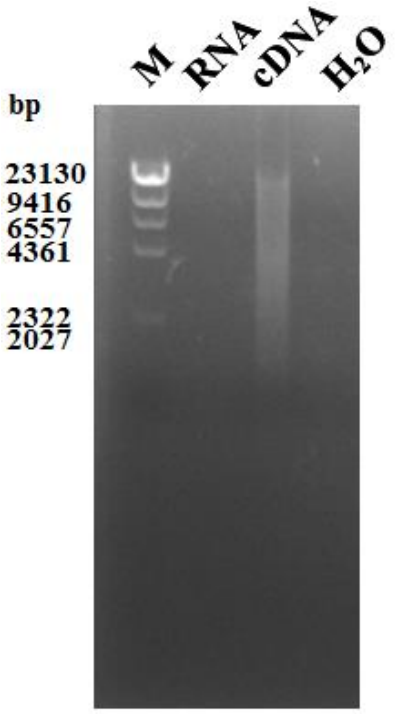


**Fig S1. Isothermal amplification of the extracted viral genomic RNAs and cDNAs.** The viral genomic RNAs were extracted from the purified deep-sea virions, followed by reverse transcription to synthesize cDNAs. The extracted RNAs and cDNAs of each of 133 sediment samples were subjected to isothermal amplification. Distilled water was used as a control. The representative image of 133 deep-sea sediment samples was presented. M, DNA marker.

Fig S2

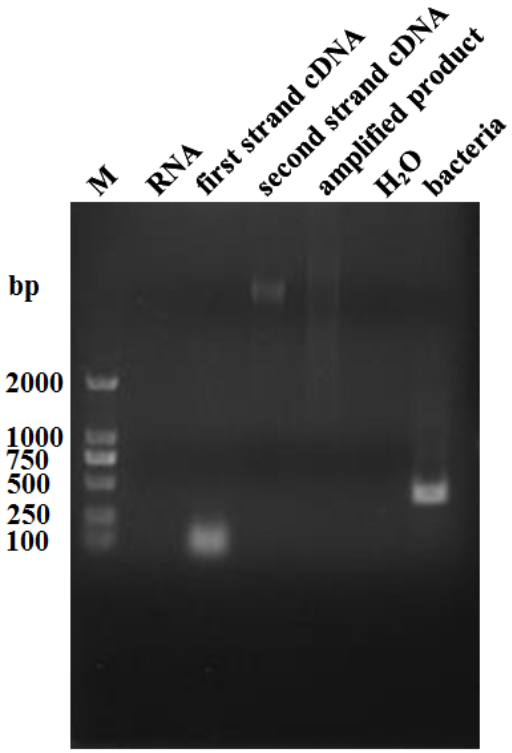


**Fig S2. Detection of bacteria in samples.** The viral genomic RNAs, extracted from the purified deep-sea virions, were transcribed into cDNAs, followed by isothermal amplification. The extracted viral RNAs, the first-strand cDNA, the second-strand cDNA and the amplified product of each of 133 sediment samples were subjected to PCR using the bacterial 16S rRNA gene-specific primers. Distilled water and bacteria were used as controls. The representative image of 133 deep-sea sediment samples was shown. M, DNA marker.