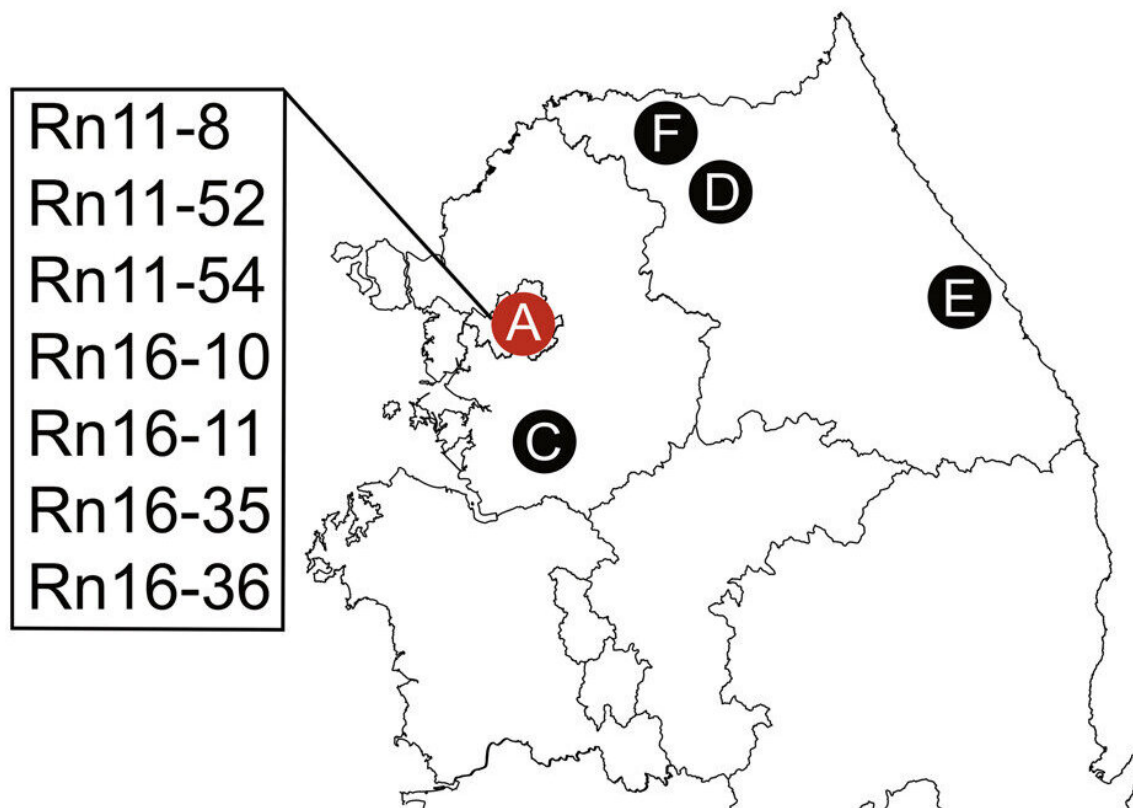


# Hepatitis E virus detected for the first time in urban Norway rats in South Korea

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Geographic map of the trapping sites of wild rats harboring Rocahepevirus ratti genotype C1 (HEV-C1) in the Republic of Korea (ROK), between 2011 and 2021. The geographic map shows rodent trapping sites where wild *Rattus norvegicus*. Credit: *Journal of Medical Virology* (2024). DOI: 10.1002/jmv.29401

A team of researchers from Korea University College of Medicine, including Professor Jin-Won Song from the Department of Microbiology, Professor Ji Hoon Kim from the Department of Internal Medicine, and Researcher Kyungmin Park, has identified hepatitis E virus (HEV) in urban Norway rats (*Rattus norvegicus*) in the Republic of Korea (ROK) for the first time.

The findings are [published](#) in the *Journal of Medical Virology*.

This virus is known for causing acute hepatitis E, which can result in symptoms such as fever, fatigue, loss of appetite, jaundice, and dark urine. Pregnant women face particularly severe risks, including fulminant hepatic failure and death.

Since 2020, around 400 cases of hepatitis E have been reported annually in the ROK, including three fatalities. The Korea Disease Control and Prevention Agency (KDCA) has been closely monitoring the disease, classifying it as a Class 2 legal communicable disease, and yet the number of reported cases is gradually increasing.

HEV is categorized into five different genera depending on the [host species](#) and viral genome characterization. While it was previously presumed that only Paslahepevirus (formerly Orthohepevirus A species; HEV-A) could infect humans, recent findings show that Rocahepevirus, transmitted by rodents, can also affect humans, garnering international attention.

Human cases of HEV caused by Rocahepevirus (formerly Orthohepevirus C species; HEV-C) have been reported in Hong Kong, Spain, France (with a travel history to India), and Canada (with a travel history to Uganda). The pathogen, HEV-C, has been identified from rats in China, Hong Kong, Indonesia, the U.S., and Germany.

The research team discovered that 4.4% of the 180 wild Norway rats (*R. norvegicus*) they examined from Seoul and Jeju, collected between 2011 and 2021, harbored HEV. This discovery constitutes a [significant milestone](#) in the nation's ongoing investigation into the virus.

Furthermore, the team documented the first full-length genomic sequences of the virus obtained from these specimens of ROK rats utilizing next-generation sequencing techniques. This analysis unequivocally confirmed their classification within the *Rocahepevirus* genus.

Professor Jin-Won Song, the lead researcher, stated, "This study is significant because it confirms that the hepatitis E virus derived from *Rattus norvegicus* found in Korea belongs to the same genus as the viruses reported in patients from Hong Kong, Spain, France, and Canada. Given the low awareness of hepatitis E, unstandardized diagnostic methods, and the possibility of a considerable number of undiagnosed infections in the community, there is a need for preemptive measures against the emergence of new and variant strains of the [hepatitis E virus](#)."

**More information:** Kyungmin Park et al, First detection and characterization of hepatitis E virus (*Rocahepevirus rattii*) from urban Norway rats (*Rattus norvegicus*) in the Republic of Korea, *Journal of Medical Virology* (2024). [DOI: 10.1002/jmv.29401](https://doi.org/10.1002/jmv.29401)

Provided by Korea University College of Medicine

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