

# **Experts Claim It's Novel Coronavirus - Preliminary Progress Made in Etiological Identification of Wuhan Viral Pneumonia of Unknown Cause – Xinhua Net**

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Xinhua News Agency, Beijing, January 9 (Reporter Qu Ting) Recently, the reporter interviewed Xu Jianguo, head of the expert group for preliminary evaluation of pathogen testing results and academician of Chinese Academy of Engineering, on the progress of etiological identification of the viral pneumonia of unknown cause in Wuhan. He said that the expert group believed that the pathogen of the viral pneumonia of unknown cause was preliminarily determined as a novel coronavirus.

## **Question 1: At present, what progress has been made in the etiological identification of the viral pneumonia of unknown cause in Wuhan?**

Xu Jianguo: As of 21: 00 on January 7, 2020, a novel coronavirus was detected in the laboratory, and the whole genome sequence of the virus was obtained. A total of 15 novel coronavirus positive results were detected through nucleic acid test. The virus was isolated from a positive patient's specimen, which indicates typical coronavirus morphology under electron microscopy.

The expert group believes that the pathogen of the current viral pneumonia of unknown cause cases is preliminarily determined as a novel coronavirus.

## **Question 2: How is the etiological identification organized?**

Xu Jianguo: Methods including genome sequencing, nucleic acid test and virus isolation among others were used in the laboratory to carry out etiological test of patients' alveolar lavage fluid, throat swab, blood and other specimen.

## **Question 3: What's the procedure needed to identify pathogens?**

Xu Jianguo: To identify the pathogen causing an epidemic disease, the following should be usually met: (1) suspicious pathogens must be found in all patients, and pathogenic nucleic acids can be detected in clinical specimens of patients; (2) pathogens can be successfully isolated from clinical specimens of patients; (3) isolated pathogens can cause the same disease symptoms after infecting host animals. In addition, when there is a 4-fold increase in antibody titers to this pathogen in the patient's serum during the recovery period, it helps identify the pathogen.

Discovery of nucleic acid, genome and antibody evidence of pathogens from patients can be completed in a short period of time, while pathogen isolation and pathogenic identification and other scientific research may take several weeks. The R&D of specific drugs and vaccines for a new pathogen may take several years.

#### **Question 4: What are the next steps?**

Xu Jianguo: The expert group believes that the pathogen of the viral pneumonia of unknown cause cases is initially determined as a novel coronavirus, and the next step is to conduct expert judgment on the basis of etiological research, epidemiological investigation and clinical manifestations.

#### **Question 5: What is a coronavirus?**

Xu Jianguo: Coronavirus is a kind of pathogen that mainly causes respiratory and intestinal diseases. There are many regularly arranged protrusions on the surface of these virus particles, and the entire virus particle resembles an imperial crown, hence the name "coronavirus". In addition to humans, coronavirus can also infect many other mammals such as pigs, cattle, cats, dogs, minks, camels, bats, rats and hedgehogs etc., as well as many species of birds. To date, there are six known human coronaviruses. Among them, four coronaviruses are common in people and are less pathogenic, which generally only cause mild respiratory symptoms similar to common cold. The other two coronaviruses - severe acute respiratory syndrome coronavirus and Middle East respiratory syndrome coronavirus, or SARS coronavirus and MERS coronavirus for short - can cause severe respiratory disease. The novel coronavirus causing this outbreak is different from the human coronavirus that has been identified, and further scientific research is needed to gain a better understanding of this virus.

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