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Japan brings highly sensitive bio-technology to detect SARS-CoV-2

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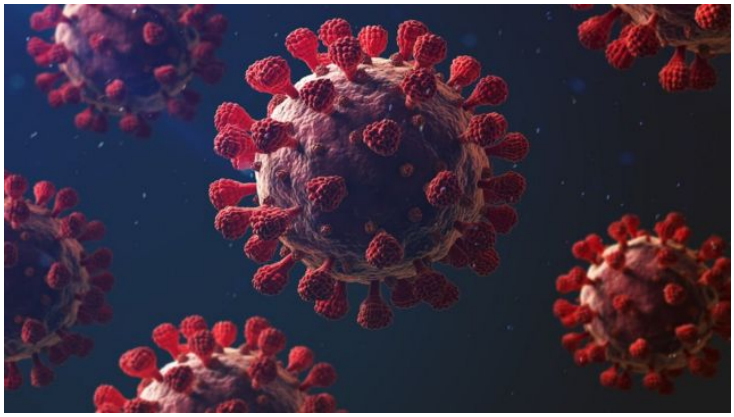
Universities and DENSO develop biosensor to detect SARS-CoV-2 and accelerate development for practical application



Tokai University, Toyohashi University of Technology, Chubu University, and DENSO Corporation in Japan have been developing testing equipment to detect SARS-CoV-2 with support from the Japan Agency for Medical Research and Development (AMED).

Universities and DENSO have announced that the group has succeeded in developing a biosensor based on a new mechanism and detecting SARS-CoV-2.

The group will accelerate the development toward practical application to contribute to early diagnosis of infectious diseases, which is a key factor in limiting virus' spread.

Unlike PCR tests and antigen tests, the biosensor detects the spike protein on the virus surface, which triggers infection, by using a semiconductor sensor and aptamer.

The group has succeeded in developing highly sensitive detection of SARS-CoV-2 with high sensitivity by using this technique for the first time in the world.

The semiconductor sensor can quantitatively measure the viral load by using electrical signals. Thus, it is expected to be used to determine the status of infection and confirm the efficacy of treatment with high accuracy. An aptamer is small in size and binds selectively to various types of protein. It is also easy to design and can be mass-produced quickly, and so the aptamers can be used to detect unknown viruses.