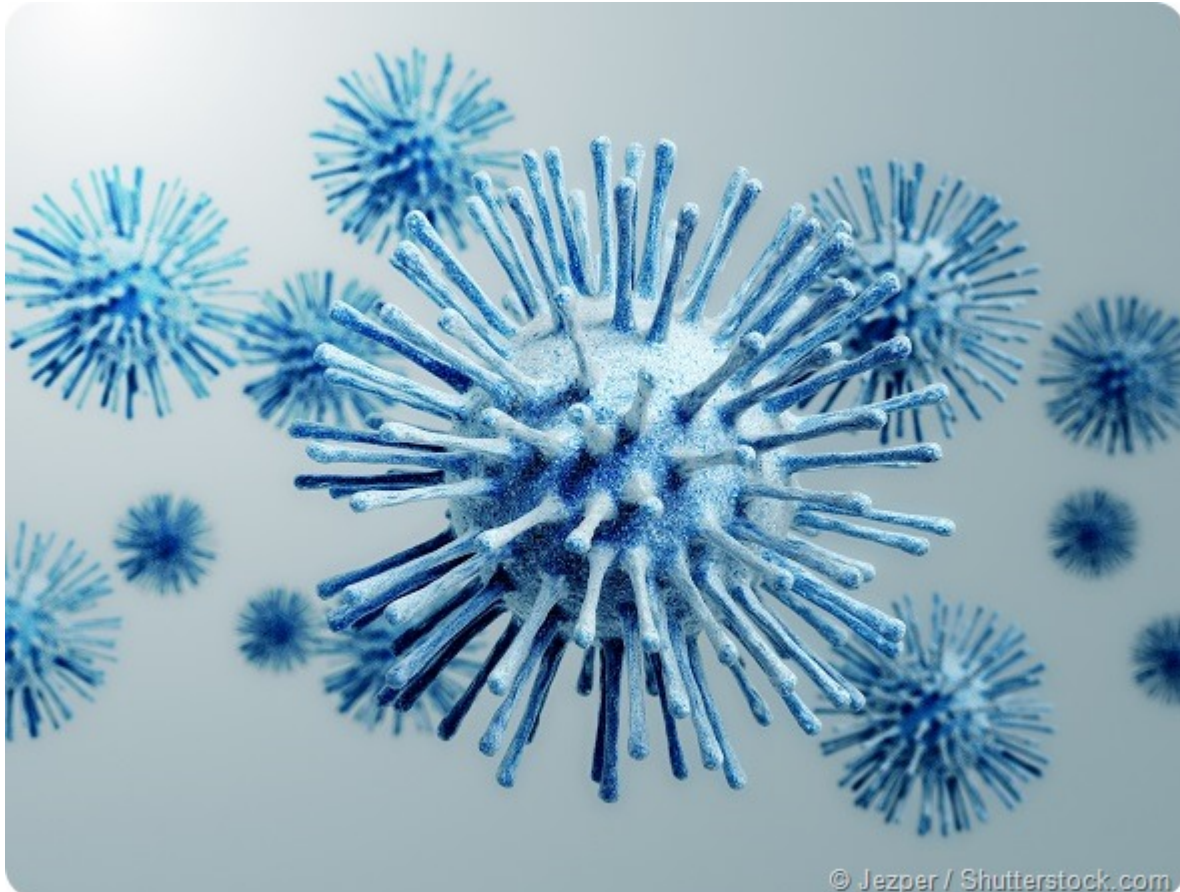


New test capable of detecting all viruses that affect people and animals

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By Sally Robertson, BSc

A new, super-sensitive test has been developed that can detect virtually any virus that causes illness in humans and animals, according to researchers at Washington University School of Medicine in St. Louis.



Furthermore, Prof Gregory Storch, senior author of the study and the first Ruth L. Siteman Professor of Pediatrics at the School of Medicine adds:

Doctors don't even need to know what they are looking for."

Currently, standard testing is not sensitive enough to detect low levels of virus or it is limited to detecting only viruses that are already suspected of causing a patient's sickness. However, the new test, which is called ViroCap, "casts a broad net and can efficiently detect viruses that are present at very low levels," explains Storch. "We think the test will be especially useful in situations where a diagnosis remains elusive after standard testing or in situations in which the cause of a disease outbreak is unknown."

As reported in *Genome Research*, Storch and team's study showed that ViroCap detects viruses that the gold-standard polymerase chain reaction (PCR) assays cannot detect. Even the most expansive PCR assay can only be used to check for up to 20 similar viruses simultaneously. ViroCap, on the other hand, looks for everything and can be used to detect anything from deadly Ebola, Marburg or SARS outbreaks through to more routine viruses such as norovirus or rotavirus.

The researchers assessed ViroCap in two groups of samples from patients at St. Louis Children's Hospital. Among the first group, standard testing revealed that viruses were present in 10 of 14 patients, whereas ViroCap detected viruses in every single child. Among the viruses that were missed by standard testing were common, everyday

viruses such as influenza B, parechovirus (causes gut and breathing problems) and herpes virus 1.

In the second sample group, standard testing detected 11 viruses among eight children tested, while ViroCap detected an additional seven viruses. When the researchers compared the two testing methods, they found that, overall, ViroCap detected 52% more viruses than standard testing.

Co-author Todd Wylie, instructor of pediatrics at the School of Medicine says:

The test is so sensitive that it also detects variant strains of viruses that are closely related genetically. Slight genetic variations among viruses often can't be distinguished by currently available tests and complicate physicians' ability to detect all variants with one test."

For example, the study also showed that although standard testing detected influenza A, which causes seasonal flu, ViroCap established that the virus was a particularly harsh subtype, referred to as H3N2, a strain that contributed to around 36,000 deaths in the U.S.A last flu season.

Storch and colleagues are making the technology available to scientists and clinicians for studying viruses in the research setting, but it may be several years before the test is clinically available because extensive clinical trials are still needed to validate the test's accuracy.

Sources:

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