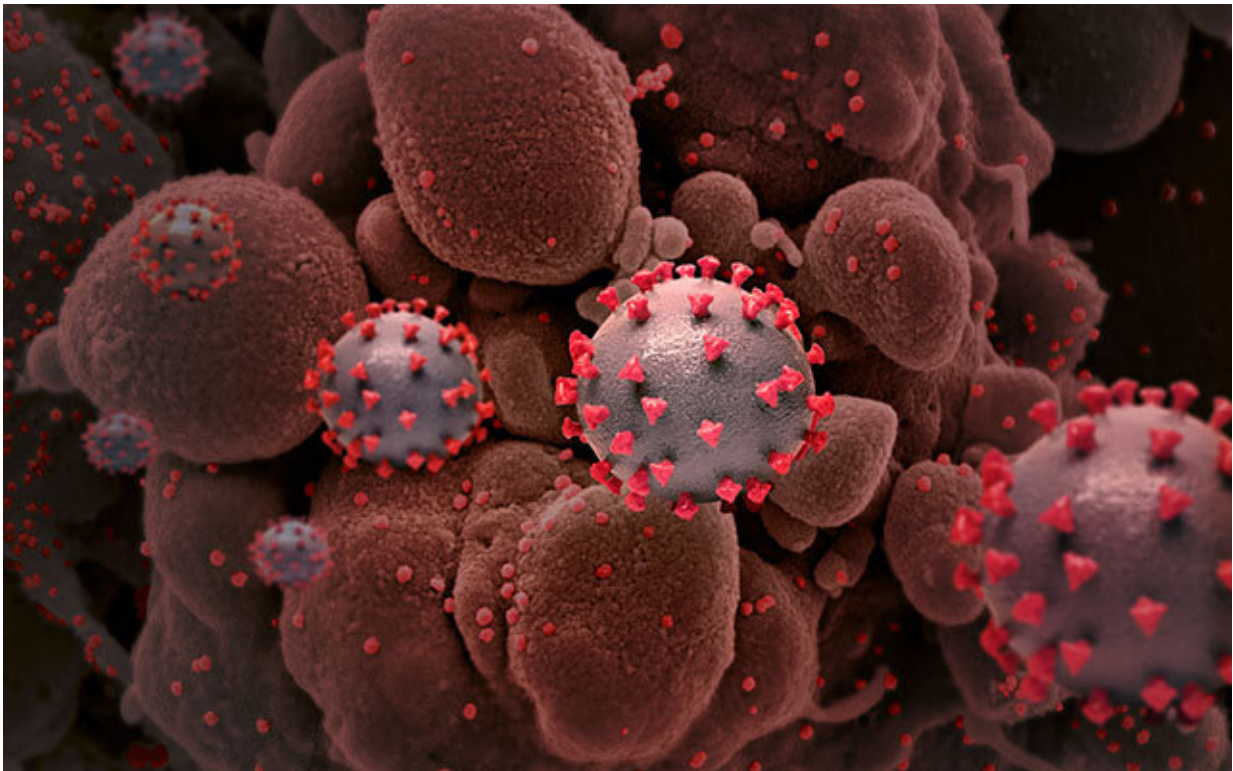


Researchers explore microbial ecosystem in search of drugs to fight SARS-CoV-2

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Creative rendition of SARS-CoV-2 particles (not to scale). Credit: National Institute of Allergy and Infectious Diseases, NIH

Researchers from Yonsei University in South Korea have found that certain commensal bacteria that reside in the human intestine produce compounds that inhibit SARS-CoV-2. The research will be presented on

June 20 at World Microbe Forum, an online meeting of the American Society for Microbiology (ASM), the Federation of European Microbiological Societies (FEMS), and several other societies that will take place online June 20-24.

Previous clinical findings have shown that some patients with moderate to severe COVID-19 have gastro-intestinal symptoms, while others showed signs of infection solely in the lungs.

"We wondered whether gut resident bacteria could protect the intestine from invasion of the virus," said Mohammed Ali, a Ph.D. student in Medicine at Yonsei University, Seoul, South Korea.

To investigate this hypothesis, the researchers screened dominant bacteria inhabiting the gut for activity against SARS-CoV-2. Their search revealed that Bifidobacteria, which have previously been shown to suppress other bacteria such as *H. pylori* and have proven active against [irritable bowel syndrome](#), had such activity, said Ali.

The investigators also used machine learning to search for potential illness-fighting compounds in databases containing microbially produced molecules, discovering some that might also prove useful against SARS-CoV-2. "To train our model we leveraged previous coronavirus datasets in which several compounds were tested against targets from coronaviruses," said Mr. Ali. "This approach seems to be significant as those targets share features in common with SARS-CoV-2."

Ali emphasized the ecological nature of his approach to this work, observing that many existing antibiotics and cancer therapies are compounds that bacteria use to compete with each other within the [gastrointestinal tract](#), and that these were initially purified from microbial secretions.

"Finding microbes that secrete anti-coronavirus molecules will be a promising method to develop natural or engineered probiotics to expand our therapeutics prevention techniques, to provide a more sustainable way to combat the viral infection," said Ali.

More information: www.worldmicrobeforum.org/

Provided by American Society for Microbiology

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