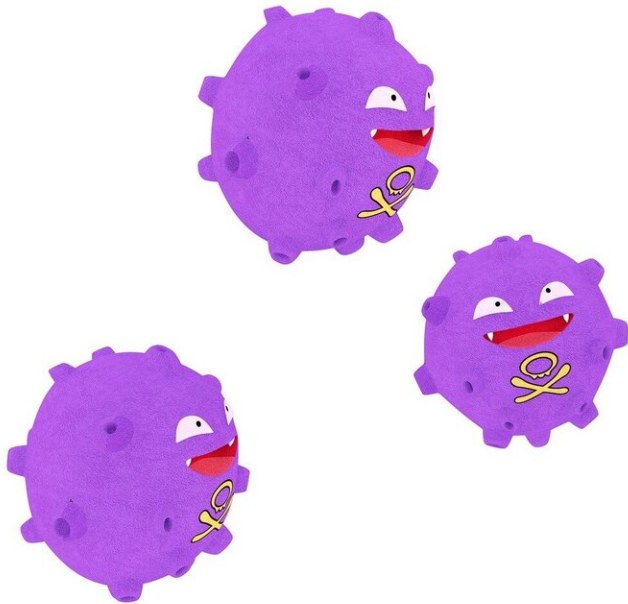


COVID-19: Not all patients develop protective antibodies

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A laboratory test developed by a study group from MedUni Vienna can determine whether COVID-19 patients develop protective antibodies after having the disease. Scientists from MedUni Vienna's Institute of Pathophysiology and Allergy Research discovered that only around 60% of patients who have had COVID-19 and recovered from it develop protective antibodies and, for the first time, they were able to show that some antibodies even assist the virus by augmenting it to the cells of the host. The results have recently been published in the leading journal *Allergy*.

The team, led by Rudolf Valenta, developed an ELISA [laboratory test](#) to identify patients who had developed protective [antibodies](#) after COVID-19 infection. This showed that only 60% of patients convalescing from COVID-19 developed antibodies that inhibit the interaction of the SARS-CoV-2 receptor-binding domain (RBD) with ACE2. The ACE2 (angiotensin converting enzyme 2) receptor for SARS-CoV-2 occurs predominantly in the [respiratory tract](#) and other organs affected by the virus. "The positive outcome is that we now have a test that can identify antibodies and show whether people who have already been infected have protective immunity or not."

However, the research team also discovered that certain immunocomplexes consisting of RBD and patient antibodies, have a higher binding rate to ACE2. This is a hitherto unknown mechanism that enables the virus to dock onto cells more easily. "This is the first study to show elevated binding to ACE2 by immunocomplexes comprising RBD and patient antibodies," explains Principal Investigator Rudolf Valenta. "Potentially, this can make it even easier for the [virus](#) to infect cells." Further research is now needed to find out exactly what this means in

terms of immunity and for vaccine development.

More information: Pia Gattinger et al. Antibodies in serum of convalescent patients following mild COVID-19 do not always prevent virus receptor binding, *Allergy* (2020). [DOI: 10.1111/all.14523](https://doi.org/10.1111/all.14523)

Provided by Medical University of Vienna

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