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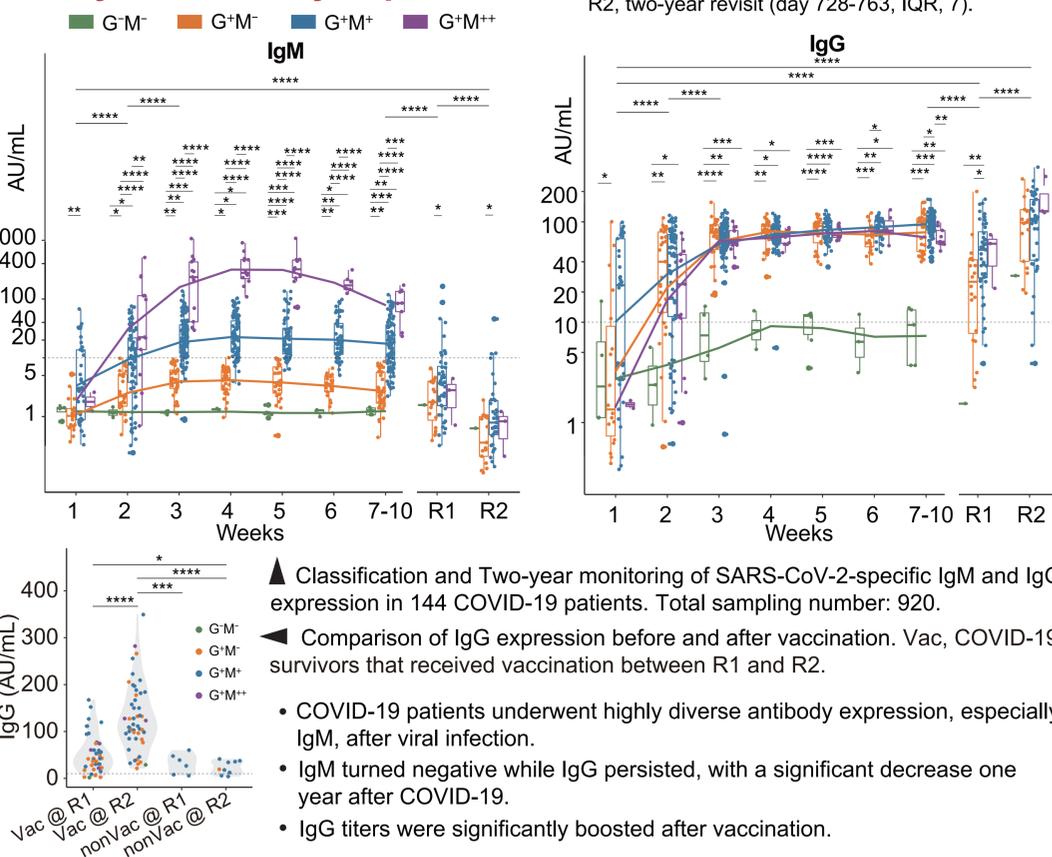


Introduction

Our body relies heavily on serum antibodies to defend against SARS-CoV-2 attacks. Patients with unexpected serological patterns are often reported, such as negative antibody expression throughout COVID-19, and exceptionally high expression of IgM or IgG at their plateau. These observations suggest diverse host responses during COVID-19, which have yet to be assessed.

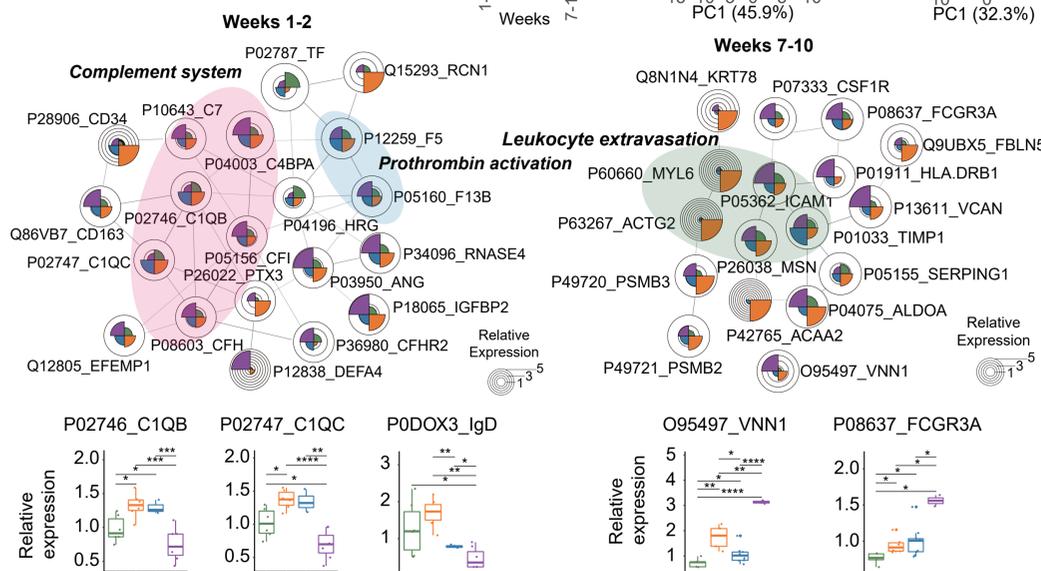
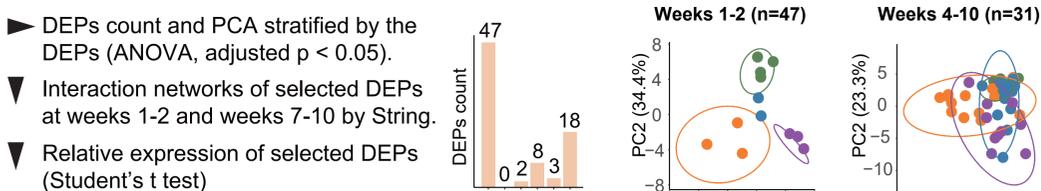
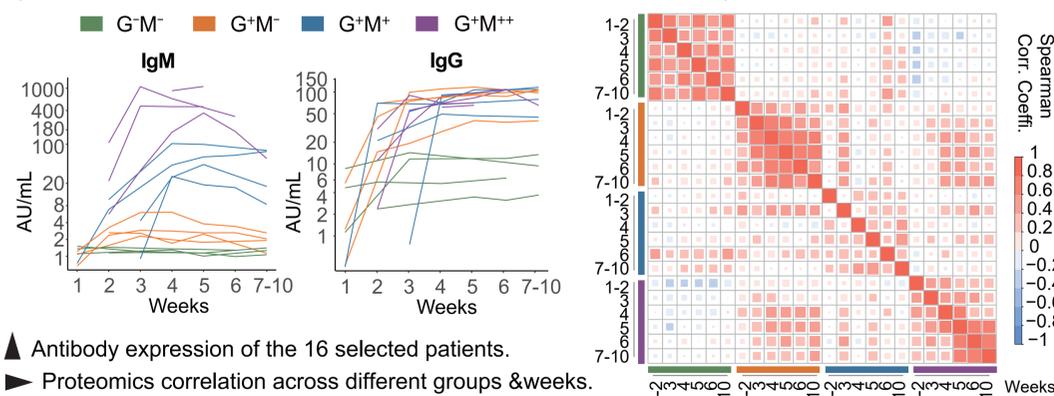
In this study, we applied two-year clinical manifestation and longitudinal serum proteomics to understand the serology in a cohort of 144 COVID-19 patients.

Two-year antibody expression

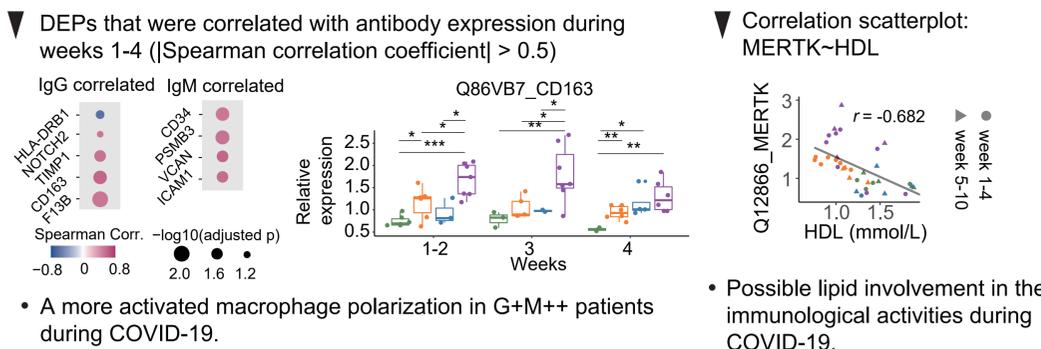


Longitudinal serum proteomics

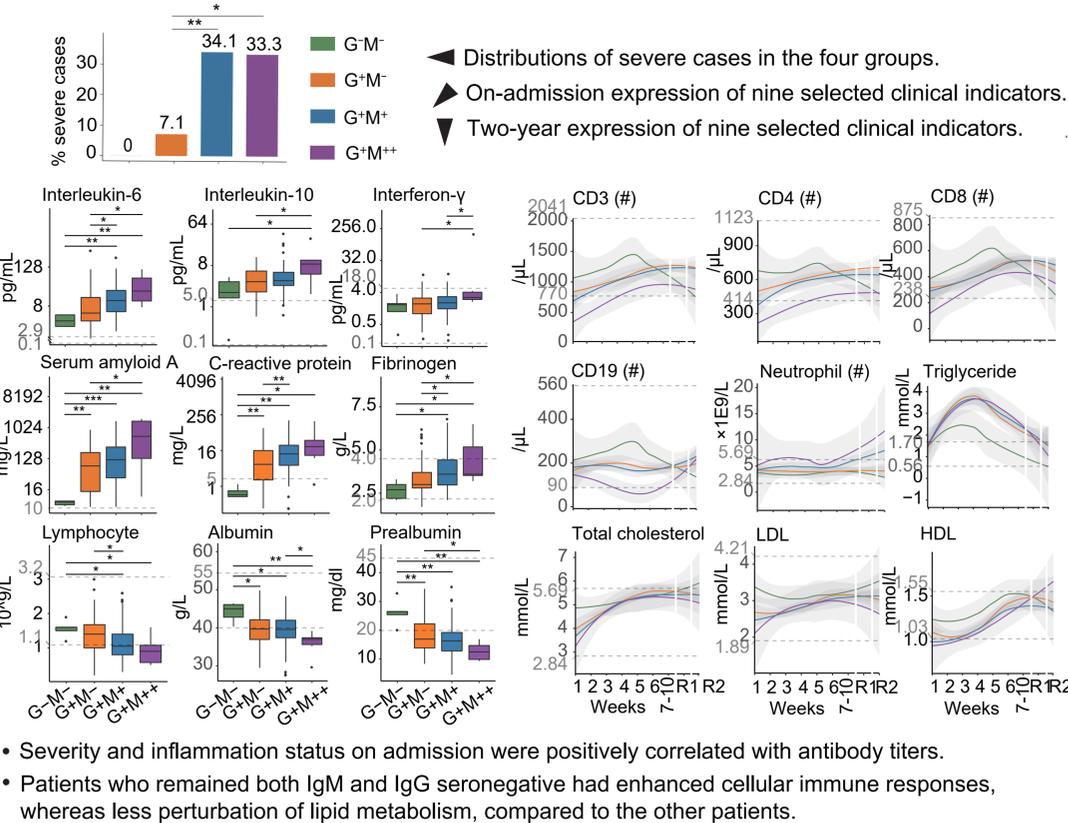
1600 proteins identified from 111 serum samples derived from 4 × 4 COVID-19 patients (Method: TMTpro; 26 fractions per batch and 8 batches in total).



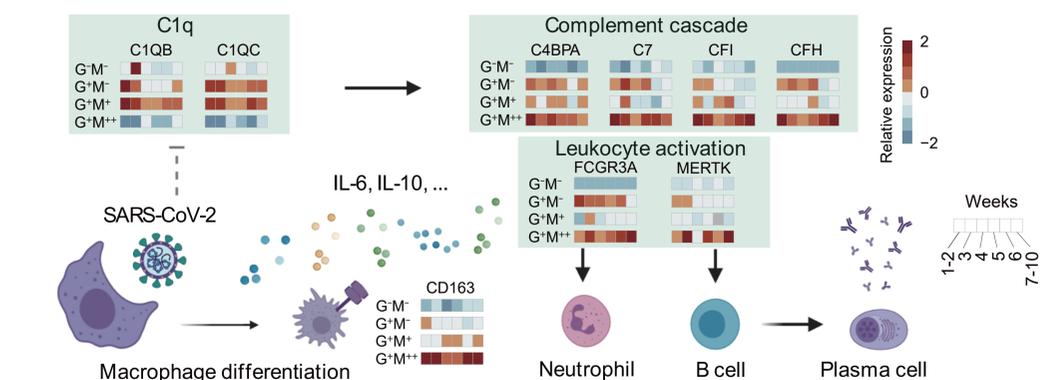
• Proteomic differences in the four groups were the most prominent during weeks 1-2, which were associated with complement cascades. The main host response differences during the late stage of COVID-19 relate to the leukocyte activities.



Clinical manifestation



Putative working model



• For G-M- patients, prior cellular immune responses may efficiently confront the invasion of SARS-CoV-2 upon COVID-19 onset.

• For G+M++ patients, high expression of inflammatory factors and rapidly ascending IgM titers might be a complementary process to defend against viral attacks.

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