Title:

Potential of human B cell-derived monoclonal antibodies against SARS-CoV-2 spike

Abstract:

SARS-CoV-2 emerged in December 2019 and resulted in a global pandemic with an estimated 3% overall fatality rate. No specific drugs or vaccines are yet available for COVID-19, and prompt diagnosis and management are crucial for containing or mitigating the outbreak. Evidence indicates an elicitation of SARS-CoV-2-specific antibody response upon natural infection or immunization of in animals and humans. Human B cell-derived monoclonal antibodies are produced from COVID-19-convalescent individuals and are shown to bind spike glycoprotein of SARS-CoV-2. Anti-spike human antibodies neutralize wild-type virus. The anti-RBD human monoclonal antibodies form cross-inhibiting clusters represented and the neutralizing activity of anti-RBD antibodies is linked with ACE2 receptor blockade. Potent neutralizing monoclonal antibodies offer potential formulations for the development of prophylactic and therapeutic agents against SARS-CoV-2.