

Research progress in Fc-effector functions against SARS-CoV-2

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Abstract

SARS-CoV-2 pandemic has caused more than 676 million cases in the global human population with approximately 7 million deaths and vaccination has been proved as the most effective countermeasure in reducing clinical complications and deaths of SARS-CoV-2 infection. However, the protective elements induced by vaccine are still not completely understood. Various antibodies with multiple protective mechanisms can be induced simultaneously by vaccination *in vivo*, thereby complicating the identification and characterization of each protective components. Recently, an increasing body of observations suggests that antibody-induced Fc-effector functions play a crucial role in combating SARS-CoV-2 infections, including neutralizing antibodies-escaping variants. Here, we review the recent progress in understanding the impact of Fc-effector functions in broadly disarming SARS-CoV-2 infectivity and discuss various efforts in harnessing this conserved antibody function to develop an effective SARS-CoV-2 vaccine that can protect humans against infections by SARS-CoV-2 virus and its variants of concern (VoCs).

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