

THE BEST OF THE WEEK (07 nov – 13 nov 2022)

Grasselli G. et al.

Association of Covid-19 vaccinations with intensive care unit admissions and outcome of critically ill patients with Covid-19 pneumonia in Lombardy, Italy

JAMA, October 2022; doi:10.1001/jamanetworkopen.2022.38871

Abstract

In this cohort study of more than 10 million people, vaccines based on mRNA technology or adenoviral vectors significantly decreased the risk of ICU admission for COVID-19 pneumonia. ICU and hospital mortality, adjusted for age, heart disease and Pao₂/FiO₂ at ICU admission, were similar between vaccinated and unvaccinated patients.

Arrindell J. et al.

Vimentin is an important ACE2 co-receptor for SARS-CoV-2 in epithelial cells

iScience, October 2022; doi.org/10.1016/j.isci.2022.105463

Abstract

The authors showed that upon infection, vimentin was upregulated at the cell surface, where it interacts with ACE2 for SARS-CoV-2 entry. They demonstrated a direct interaction between SARS-CoV-2 spike protein, ACE2 and vimentin in epithelial cells.

Tang G J et al.

Respiratory mucosal immunity against SARS-CoV-2 after mRNA vaccination

Science Immunology, July 2022; doi/10.1126/sciimmunol.add4853

Abstract

SARS-CoV-2 mRNA vaccination induces robust humoral and cellular immunity in the circulation. The authors compared the SARS-CoV-2 S-specific total and neutralizing antibody responses, and B and T cell immunity, in the bronchoalveolar lavage fluid (BAL) and blood of COVID-19-vaccinated individuals and hospitalized patients. The study shows that the mucosal booster vaccination is needed to establish robust sterilizing immunity in the respiratory tract against SARS-CoV-2, including infection by the Omicron sublineage and future VOCs.