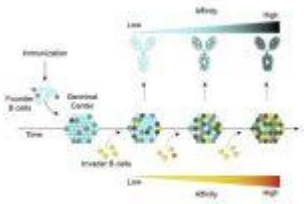
Immune response diversity driven by B cells



Cells are known for competing for a place in the germinal centre. Germinal centres, which are created by exposure to a disease or a vaccination, serve as a sort of immune system training facility, aiding B cells in honing their defence against the danger. These structures only let B cells with the highest affinity for the pathogen or vaccine to enter, where they go through rounds of mutation to create ever stronger antibodies.

The interaction of naïve B lymphocytes with high affinity ones in the late-stage germinal centre is crucial for a varied immune response. However, it depends on the virus whether that helps or hinders.

However, one peculiarity of this procedure has long perplexed scientists: germinal centres seem to alter the admittance standards over time. A germinal centre eventually produces up to 30% of its graduates when B cells with little or no affinity for the virus inundate the once-exclusive location. Researchers have just published a report that describes the event in detail and hypothesises that high-affinity B cells, which in the early stages displace inferior B cells, are what cause this reversal in late-stage germinal centres (Figure 1). The research provides fresh insight into how the immune system responds to illnesses like COVID and HIV.

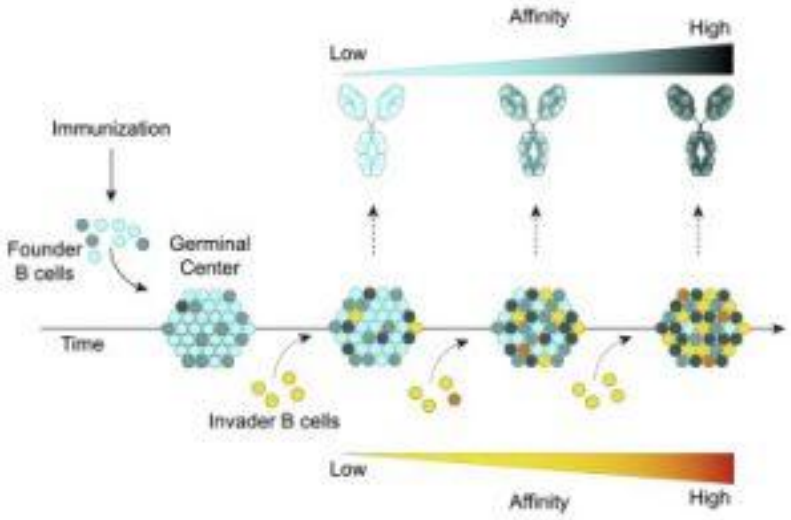


Figure 1: Graphical abstract.

The team anticipates that their research will help future efforts to create vaccines and further immunologists' knowledge of how the body reacts to illness.

Journal article: Hägglöf, T., et al., 2023. Continuous germinal center invasion contributes to the diversity of the immune response. *Cell*.

Summary by Stefan Botha