

Learning from the past: development of safe and effective COVID-19 vaccines

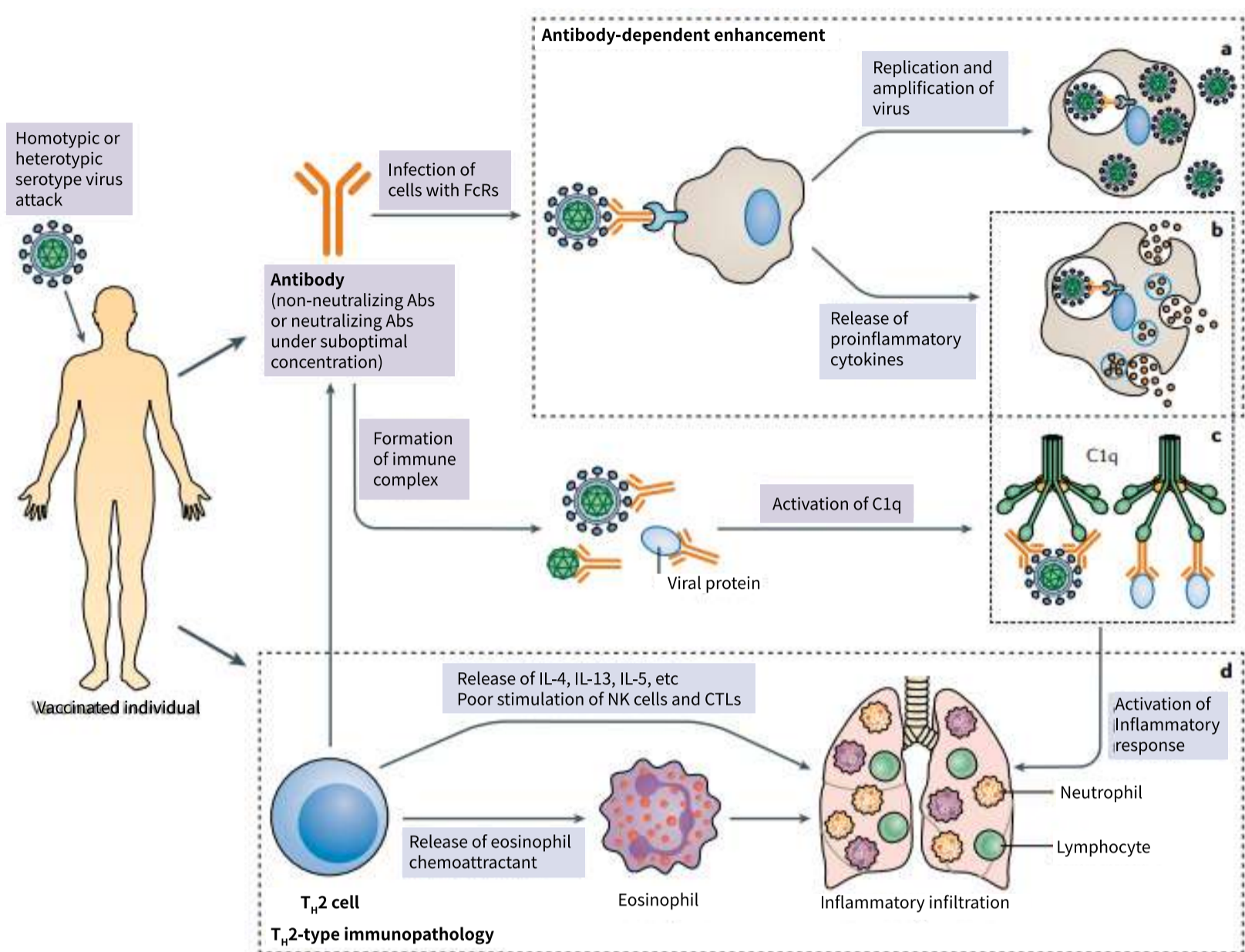






Fig. 1 | Mechanisms of vaccine-associated disease enhancement

The rapid spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has elicited an equally rapid response aiming to develop a COVID-19 vaccine. These efforts are encouraging; however, comprehensive efficacy and safety evaluations are essential in the development of a vaccine, and we can learn from previous vaccine development campaigns. In this Perspective, we summarize examples of vaccine-associated disease enhancement in the history of developing vaccines against respiratory syncytial virus, dengue virus, SARS-CoV and Middle East respiratory syndrome coronavirus, which highlight the importance of a robust safety and efficacy profile, and present recommendations for preclinical and clinical evaluation of COVID-19 vaccine candidates as well as for vaccine design and optimization.

| SARS-CoV-2 Spike Protein Variants | |  CLICK Here >> | | | |
|-----------------------------------|---|---|--------|--------------|-----------|
| Spike Protein | | Description | Source | Tag | Catalog # |
| Spike Protein |  | D614G | HEK293 | His | 10587-CV |
| | | D614G | CHO | His | 10620-CV |
| Spike Protein |  | B.1.1.7 (UK variant) | HEK293 | His | 10748-CV |
| | | H69del, V70del, Y145del, N501Y, A570D, D614G, P681H, T716I, S982A, D1118H | HEK293 | GCN4-IZ, His | Preorder |
| Spike Protein |  | B.1.1.7 (UK variant) + E484K | HEK293 | GCN4-IZ, His | Preorder |