IMMUNE EPITOPE DATABASE AND ANALYSIS RESOURCE

"How to use Immunobrowser in your research"
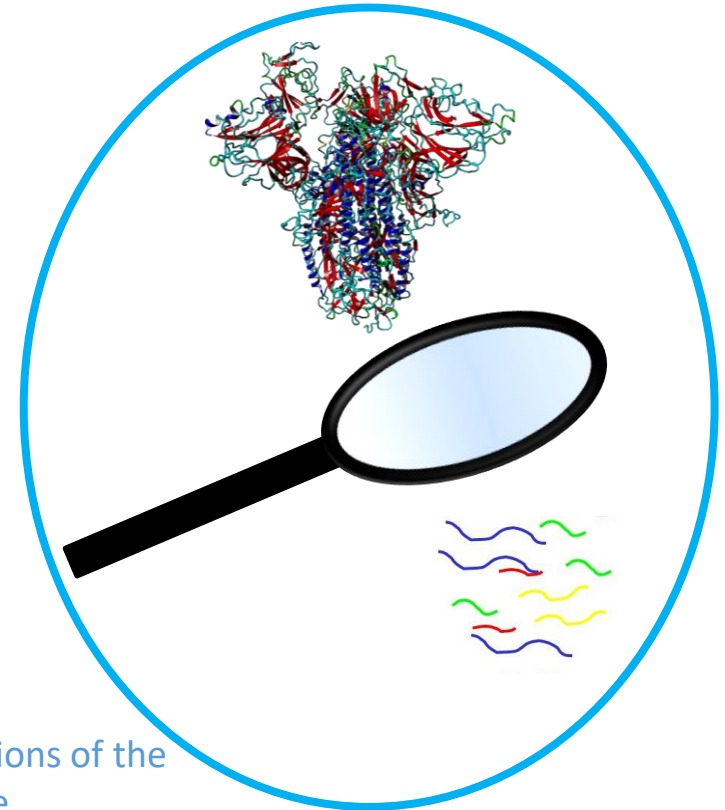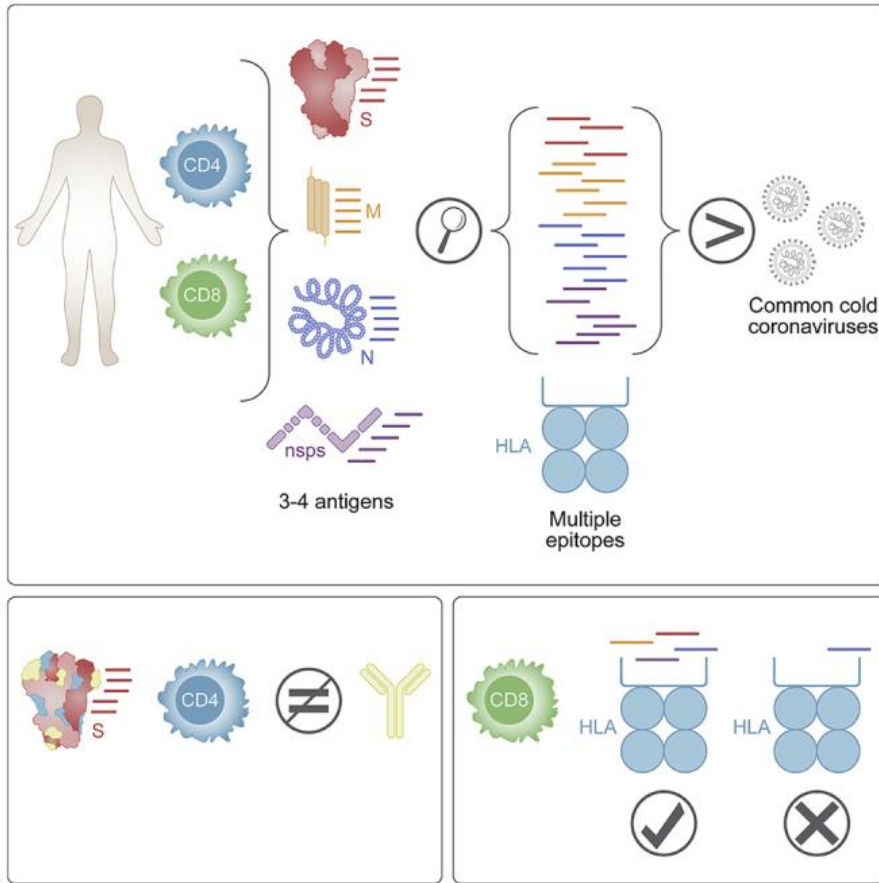
Examples on SARS-CoV-2

Presented by: Alba Grifoni, PhD, Instructor/Research Faculty

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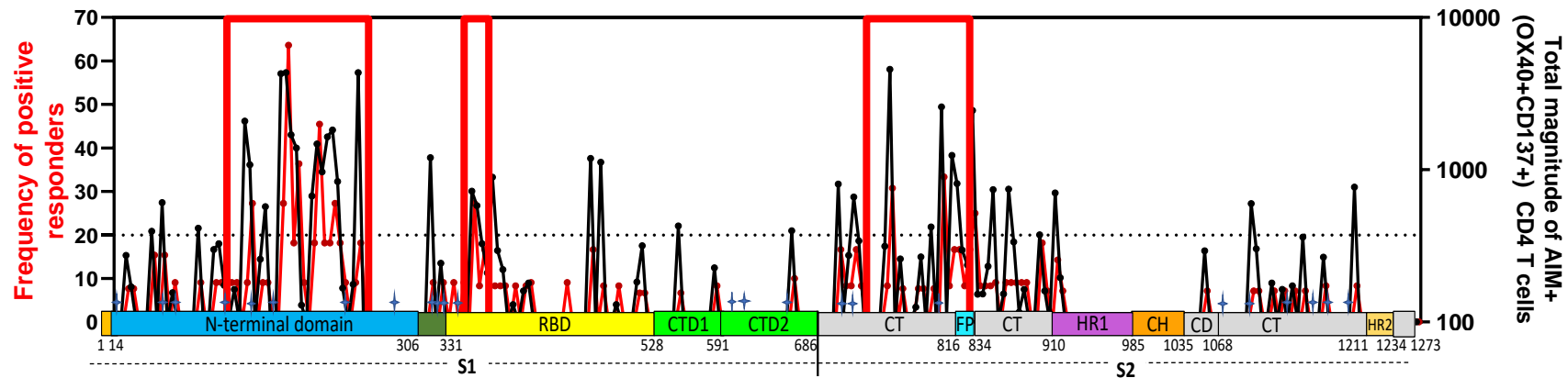
Zooming into T cell reactivity

Which portions of the proteins are recognized?

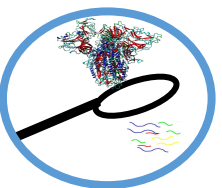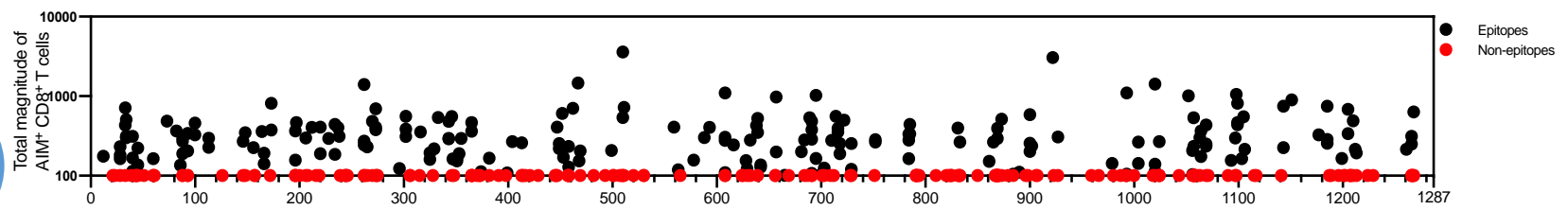Tarke et al. Cell Rep Med Jan 2021

T cells recognize some specific region of the spike protein

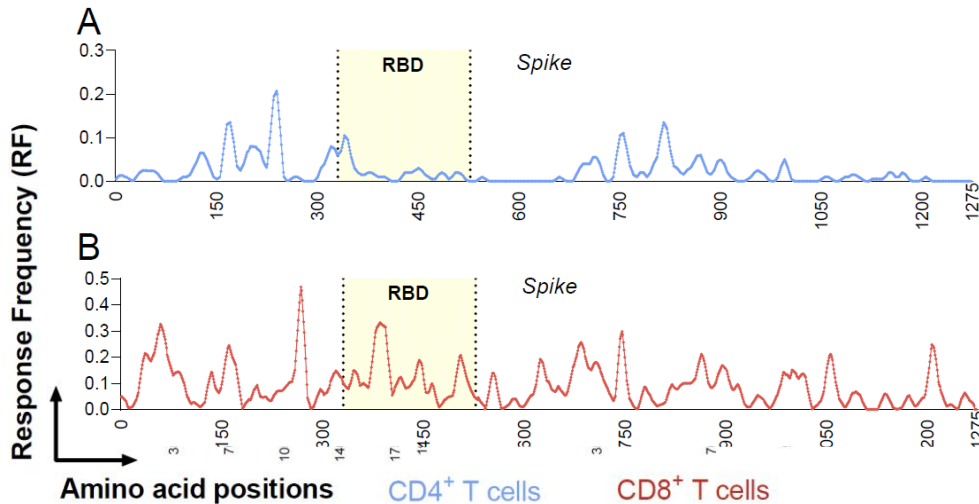CD4+ T cell response

CD8+ T cell response
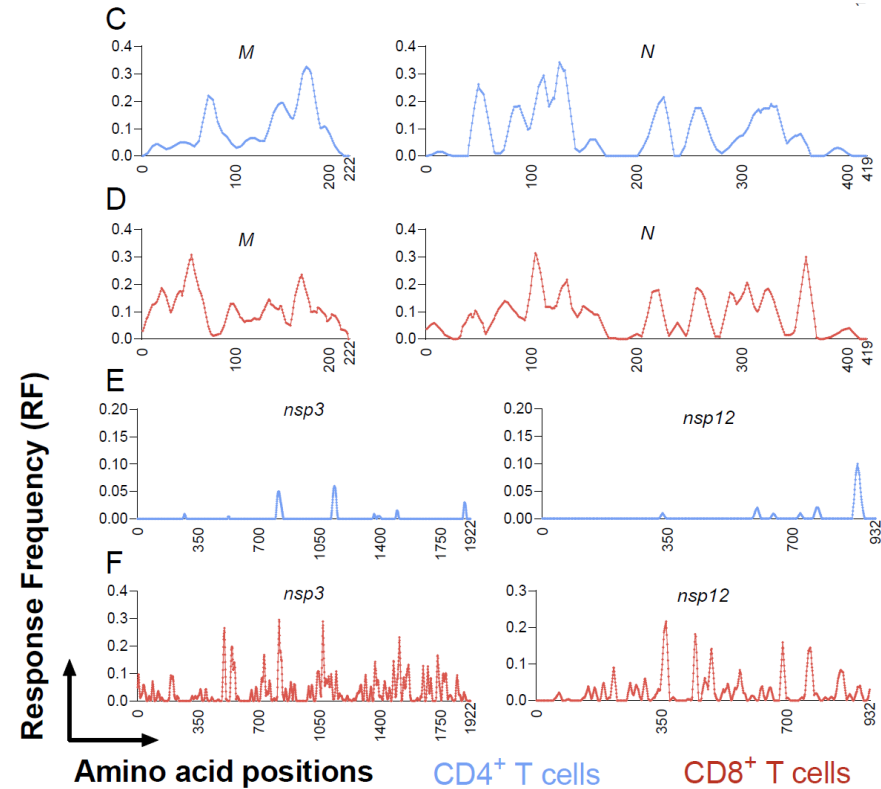
Tarke et al. Cell Rep Med Jan 2021
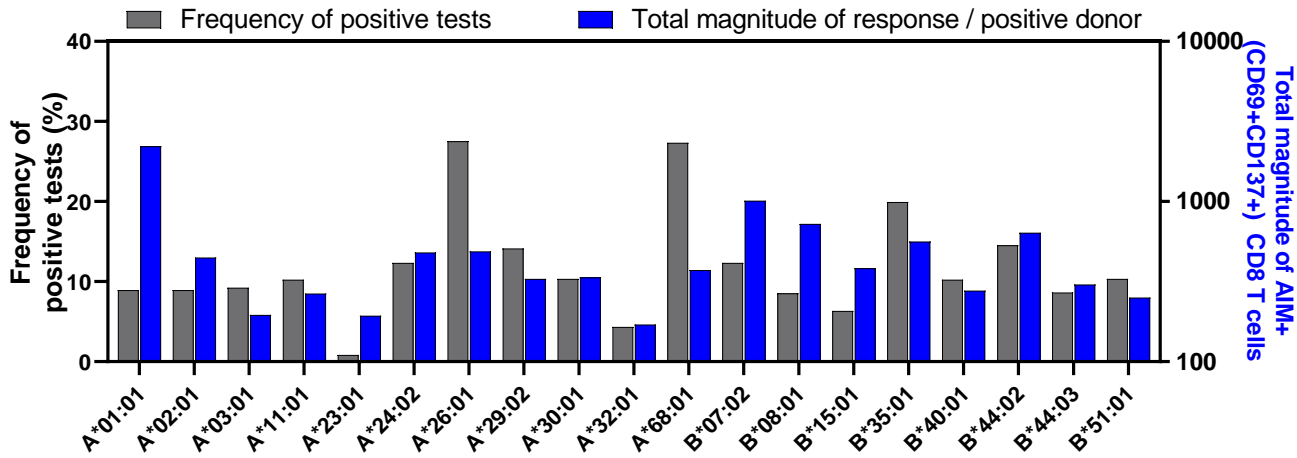
SARS-CoV-2 T cell immunodominant regions

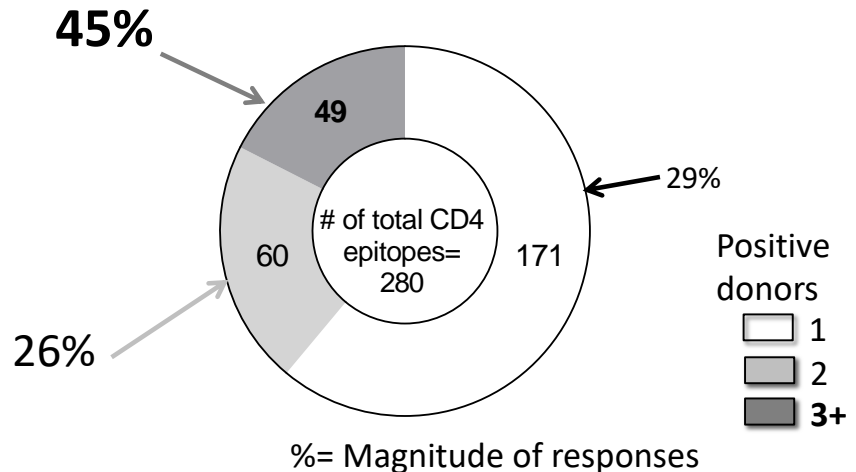Over 1400 different T cell epitopes based on 25 published studies available in IEDB

WWW.IEDB.ORG

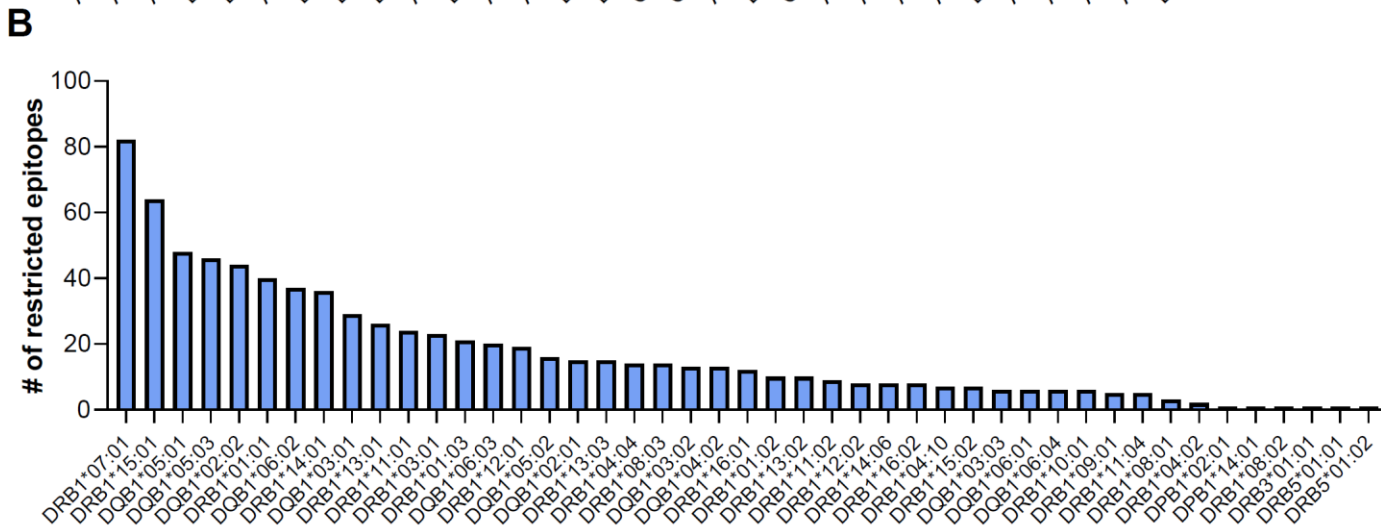IMMUNE EPITOPE DATABASE
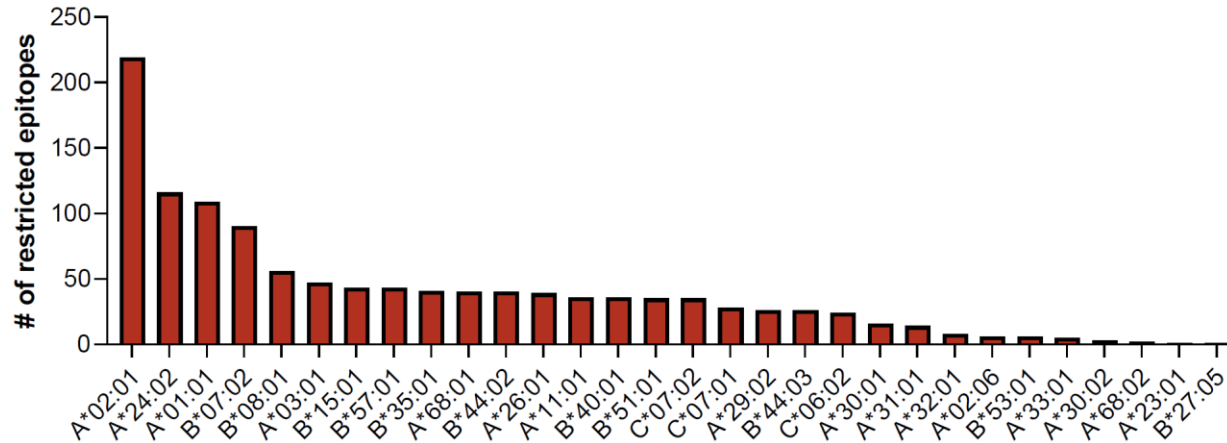AND ANALYSIS RESOURCE

Grifoni et al., Cell Host&Microbe Jun 2021

T cell epitopes recognized by COVID-19 convalescent donors

Tarke et al. Cell Rep Med Jan 2021

HLA restrictions for SARS-CoV-2 epitopes

Grifoni et al., Cell Host&Microbe 2021

Zooming into T cell responses against SARS-CoV-2

- T cells recognize specific protein regions and that depends on the HLA

- CD8$^+$ and CD4$^+$ T cells have a different way to recognize the virus

- Vaccine designed only to induce antibody response, might miss viral components needed to induce an efficient viral response

What do we see in the IEDB database?