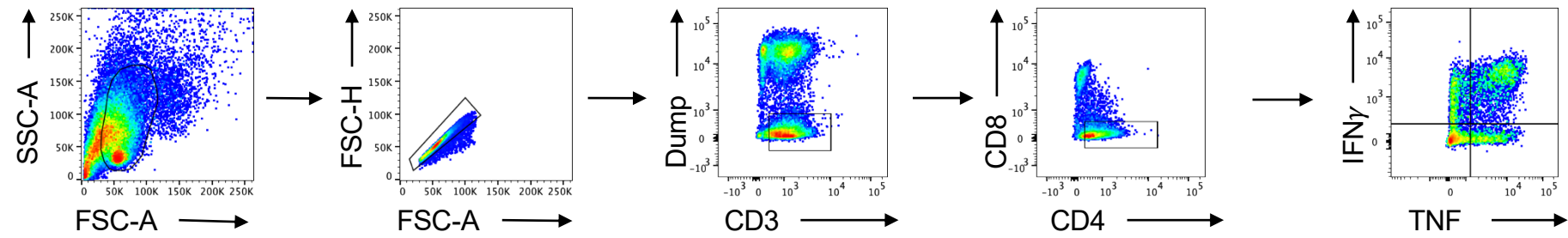
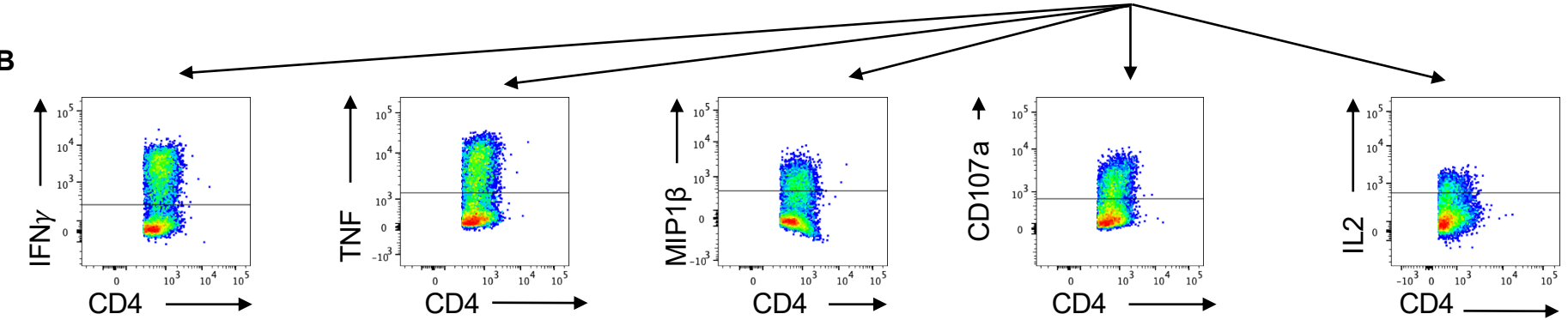


Supplementary Figure 1

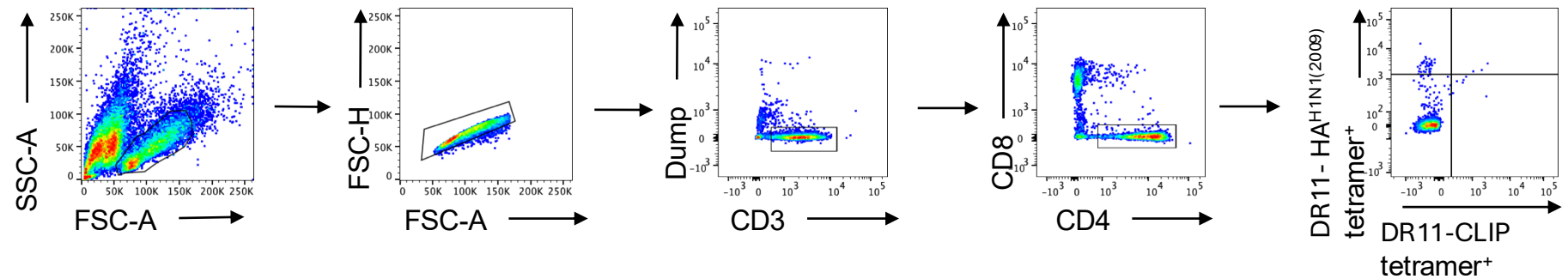
A



B



C

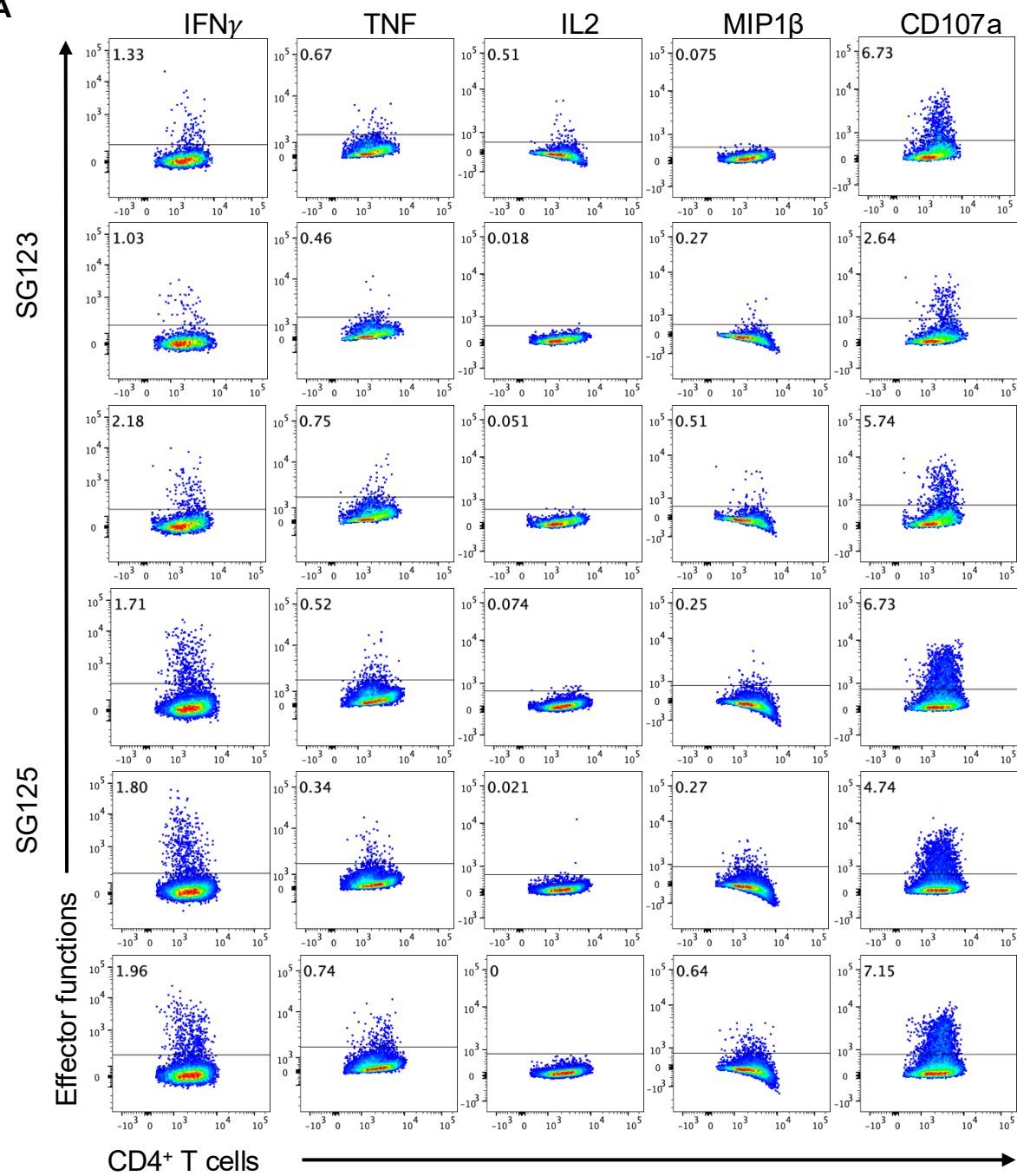


Supplementary Figure 2

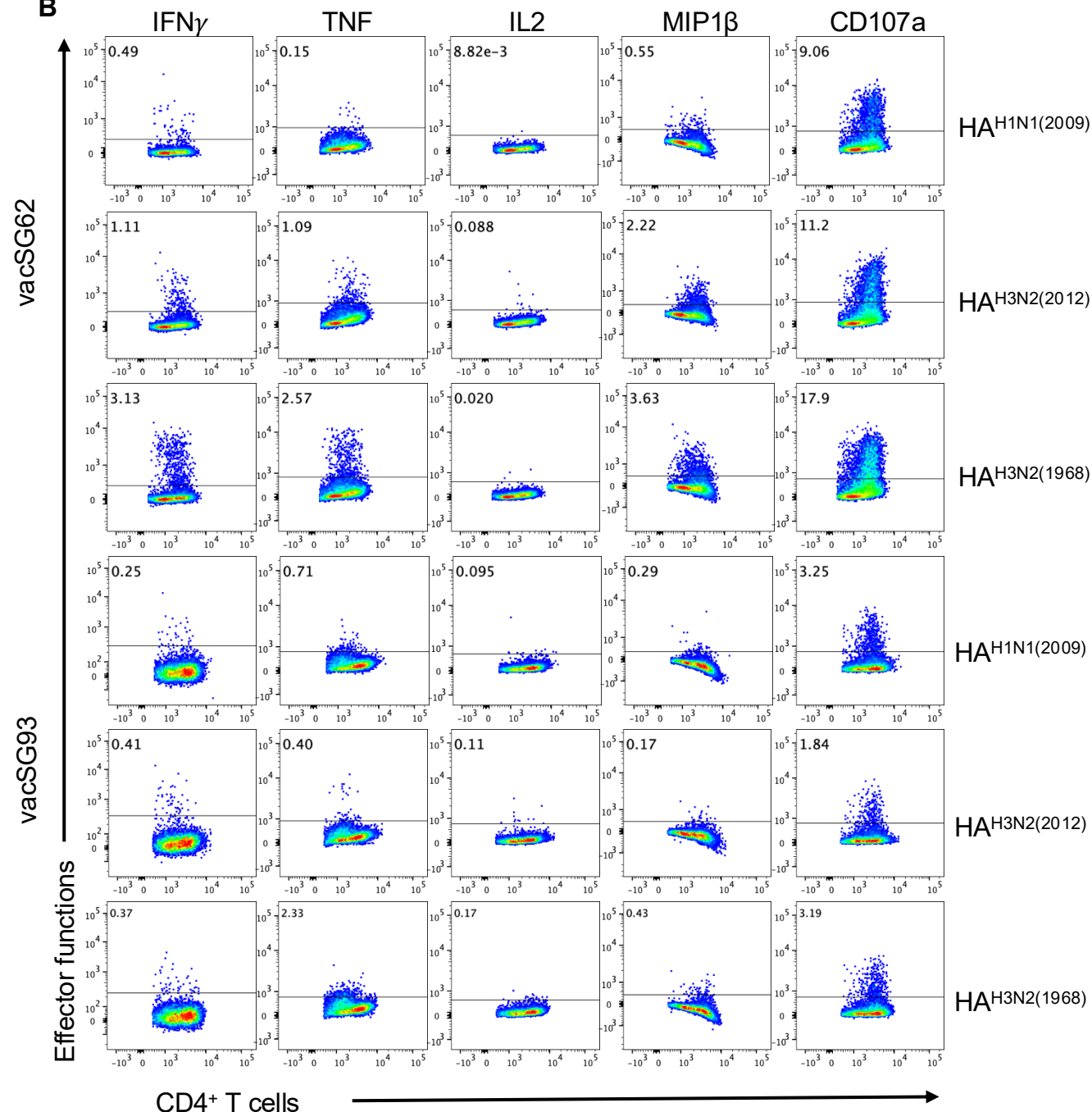
HLA-DRB1*07:01+ samples

HLA-DRB1*11:01+ samples

A



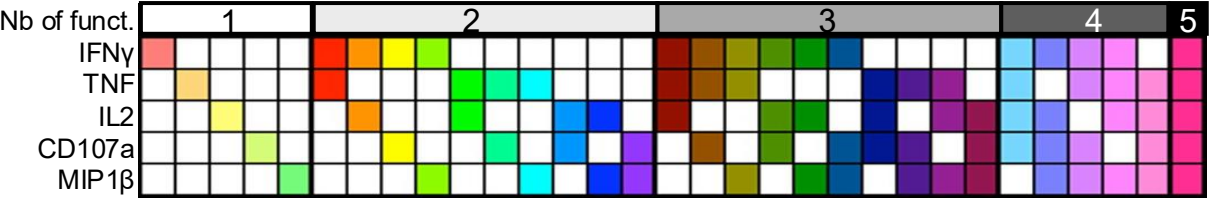
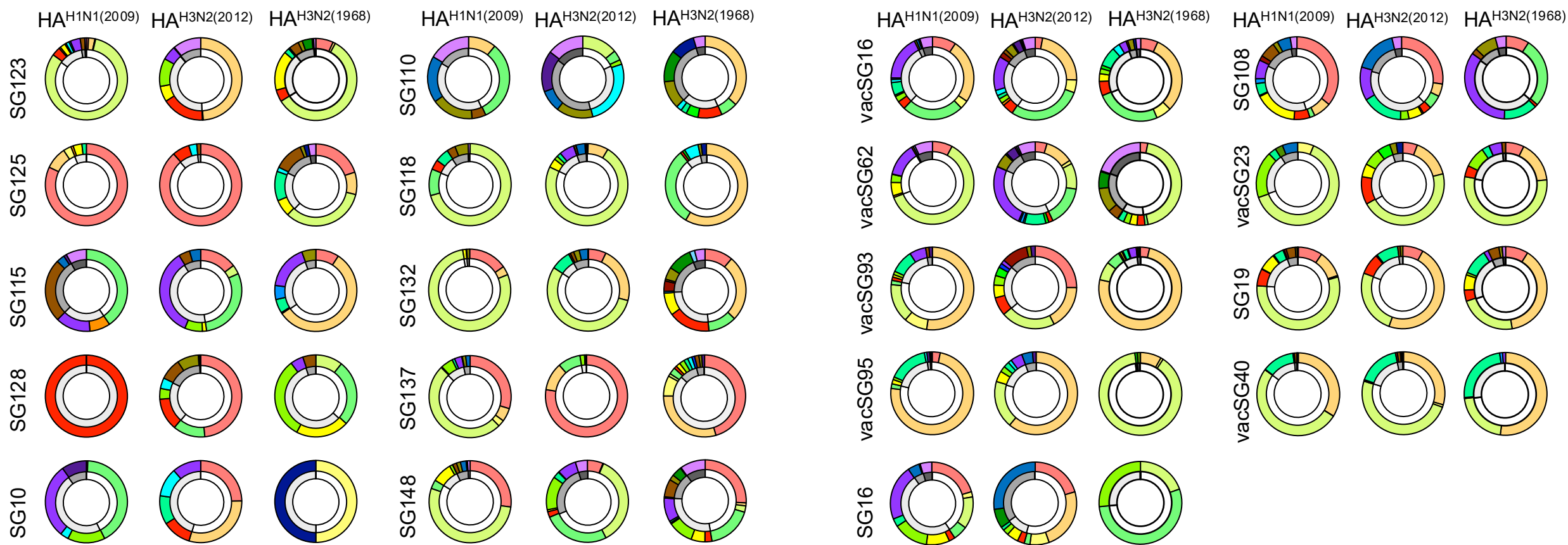
B



Supplementary Figure 3

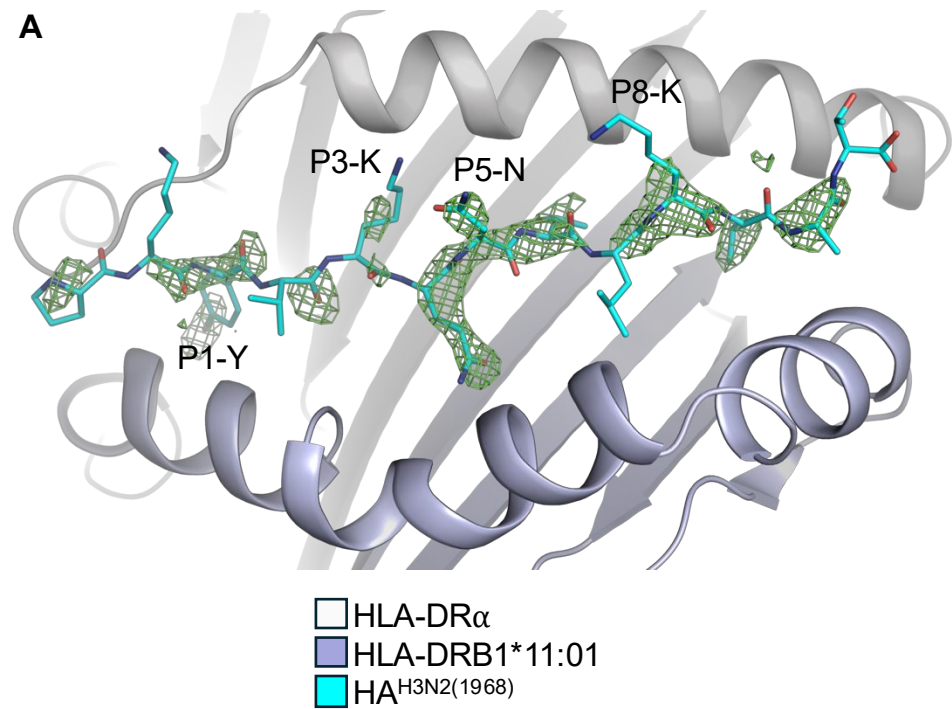
HLA-DRB1*07:01+ samples

HLA-DRB1*11:01+ samples

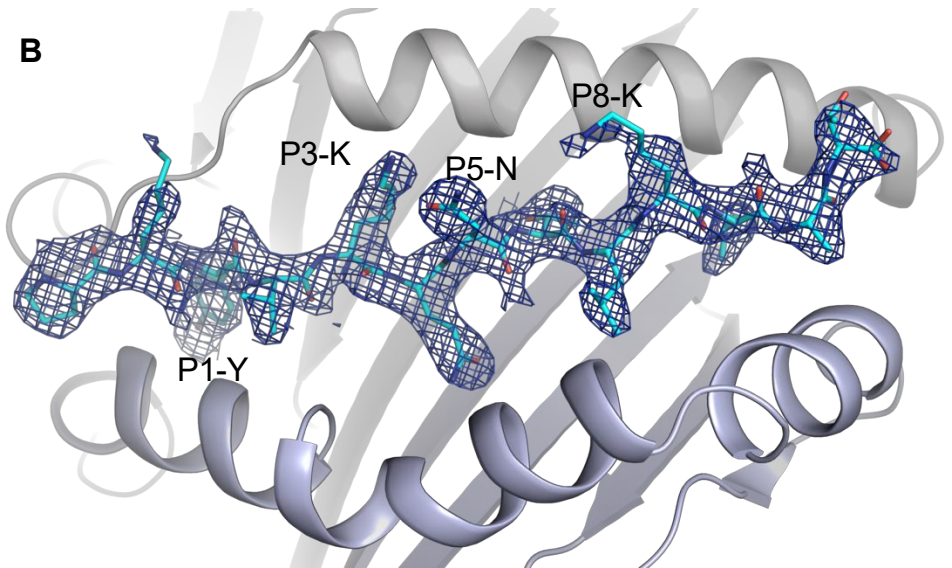


Supplementary Figure 4

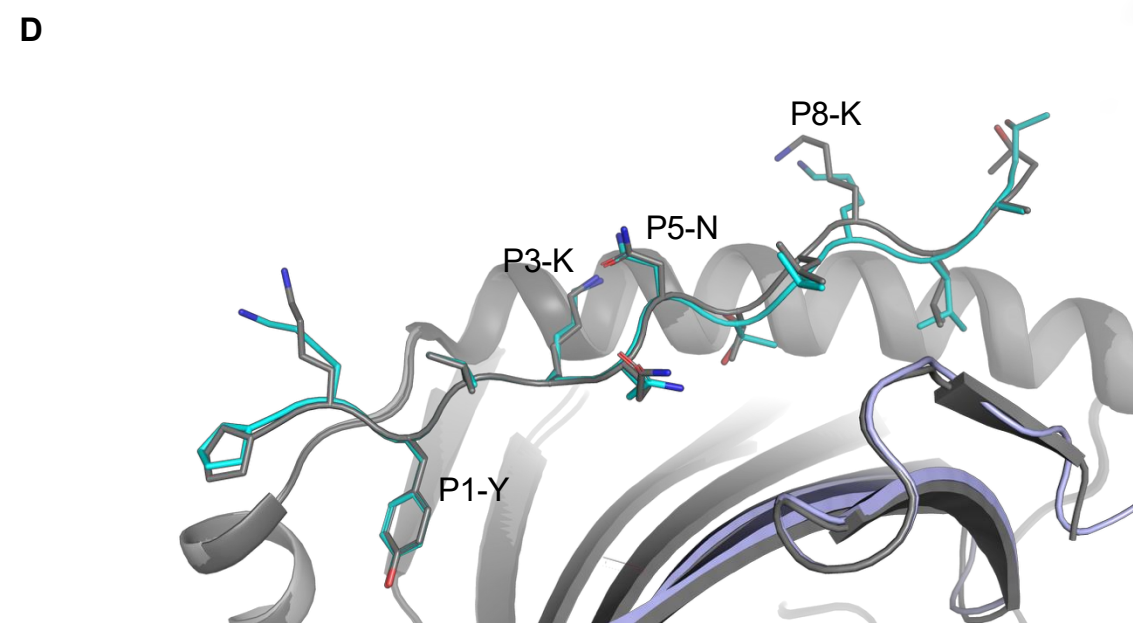
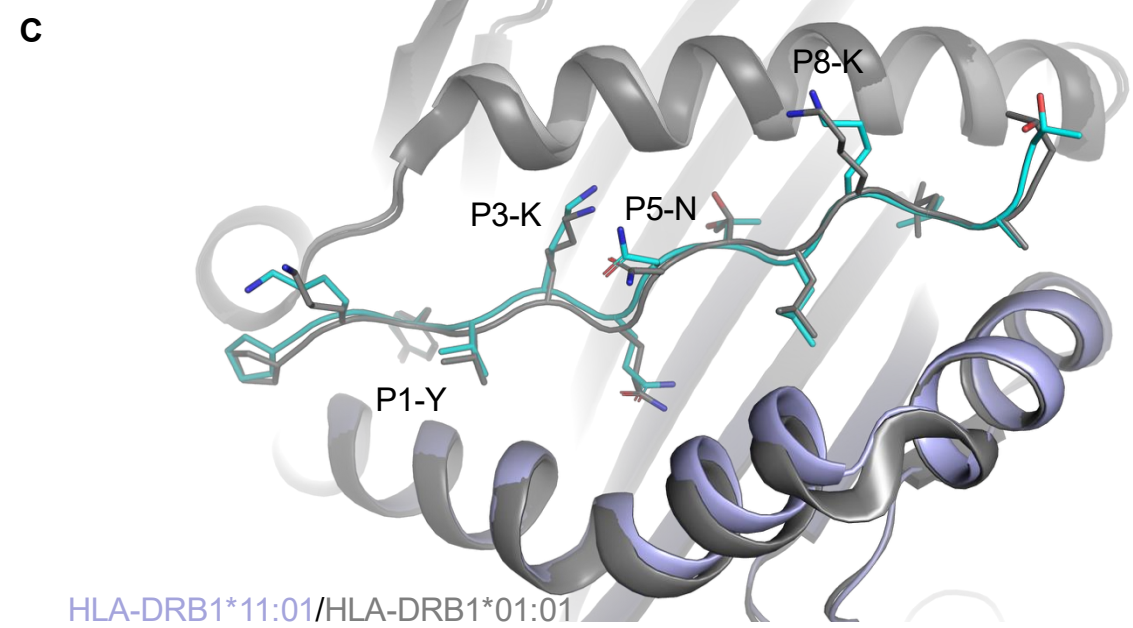
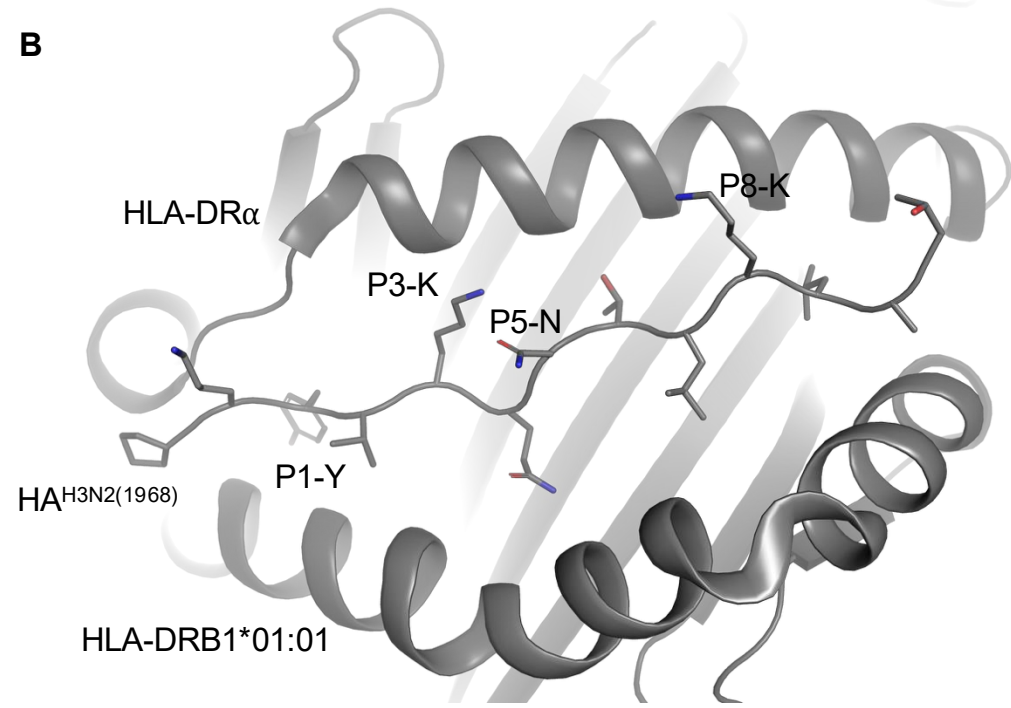
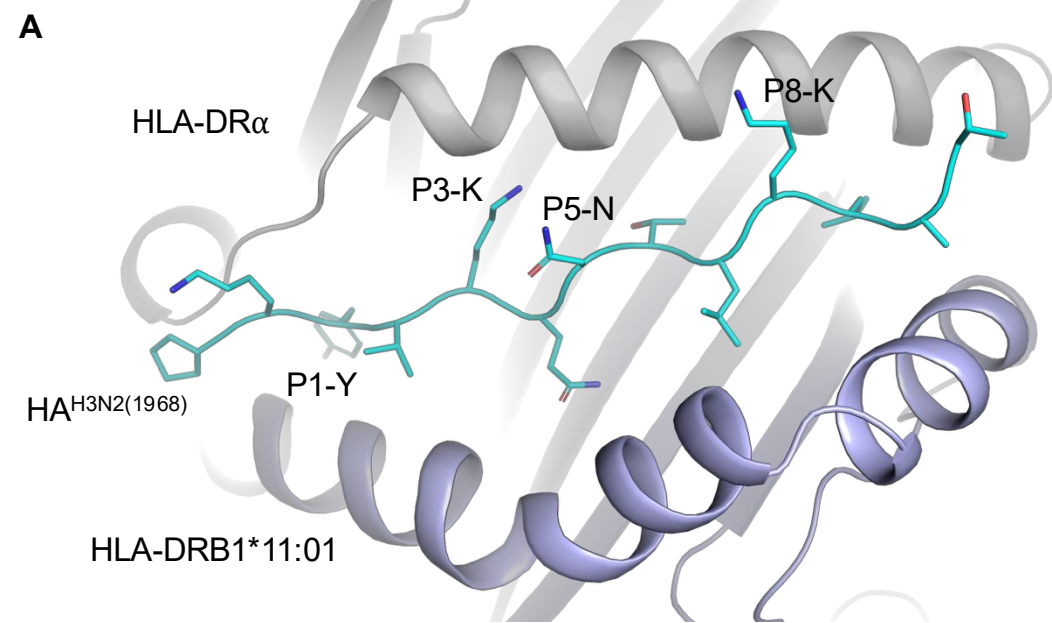
A



B

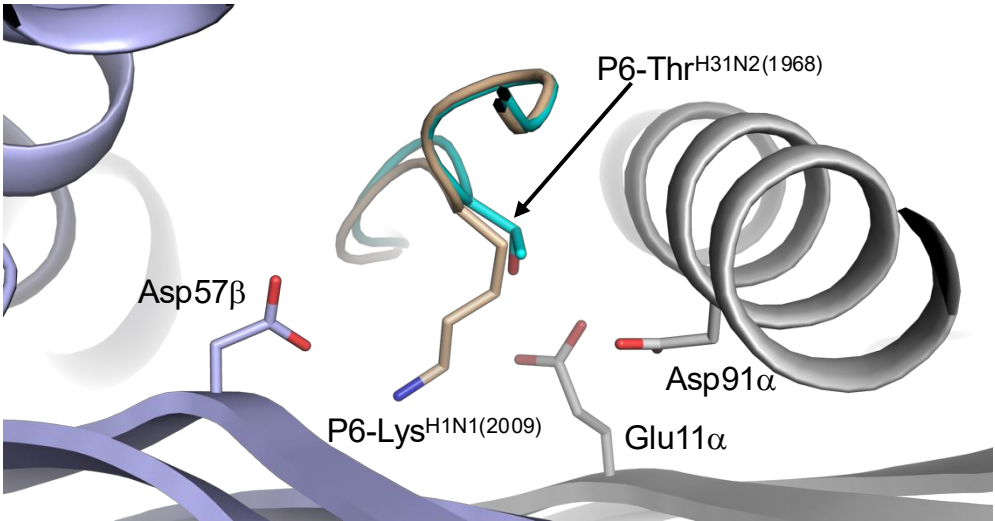


Supplementary Figure 5



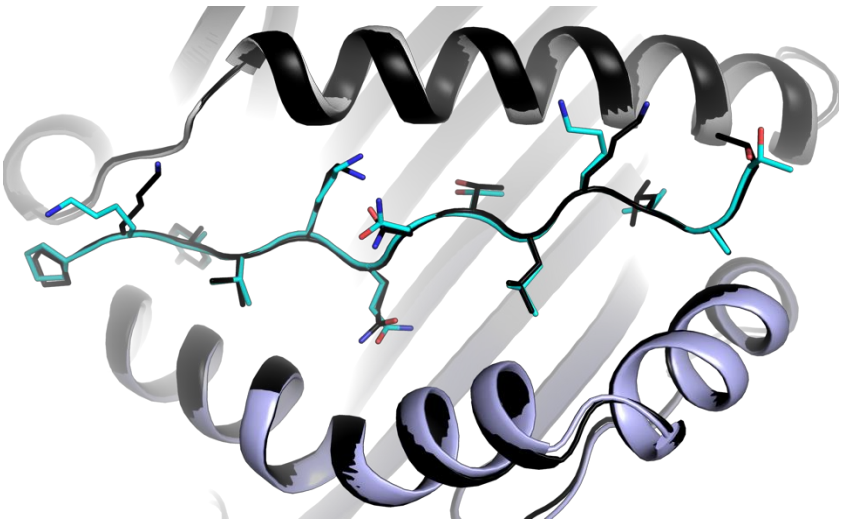
Supplementary Figure 6

A



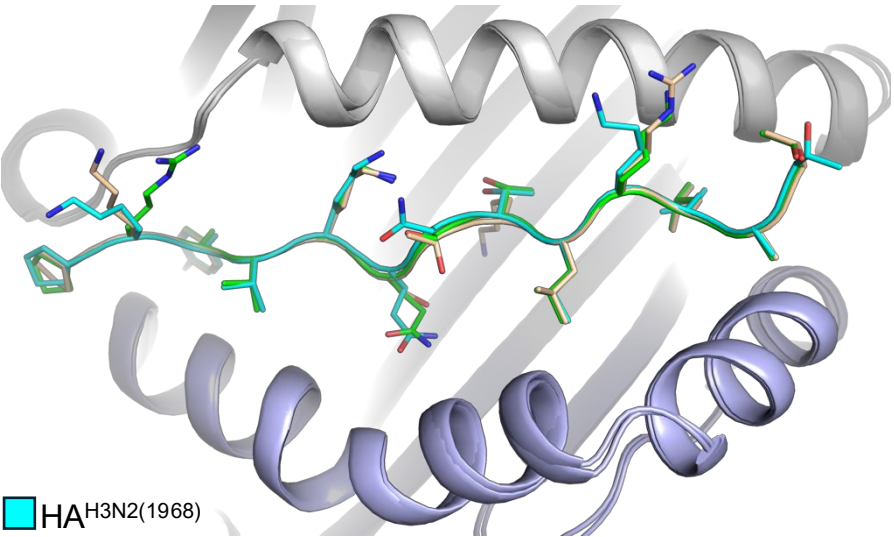
□ HLA-DR α
■ HLA-DRB1*11:01
■ HA^{H3N2}(1968)
■ HA^{H1N1}(2009)

B



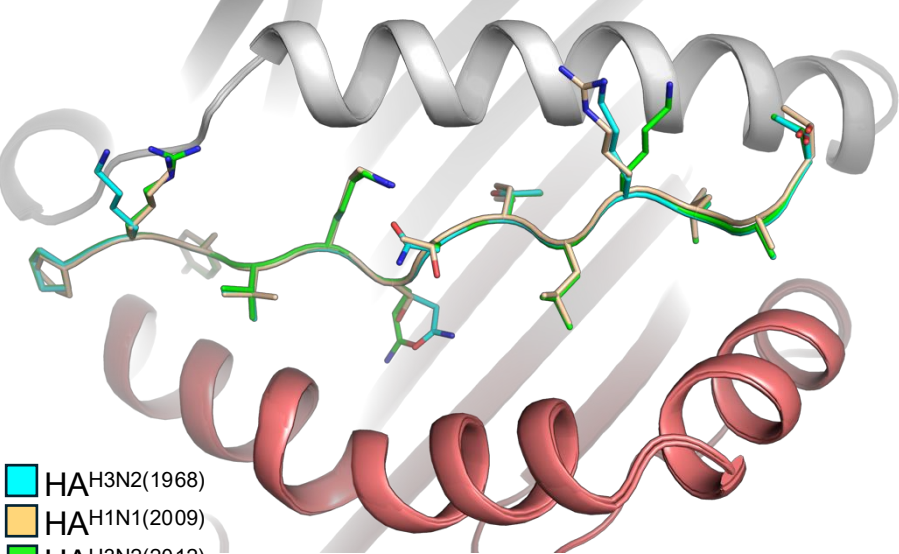
□ HLA-DR α
■ HLA-DRB1*11:01
■ HA^{H3N2}(1968)
■ HLA-DRB1*11:01-HA^{H3N2}(1968) AlphaFold model

C



■ HA^{H3N2}(1968)
■ HA^{H1N1}(2009)
■ HA^{H3N2}(2012)

D



■ HA^{H3N2}(1968)
■ HA^{H1N1}(2009)
■ HA^{H3N2}(2012)
■ HLA-DRB1*07:01

Supplementary Figure 7

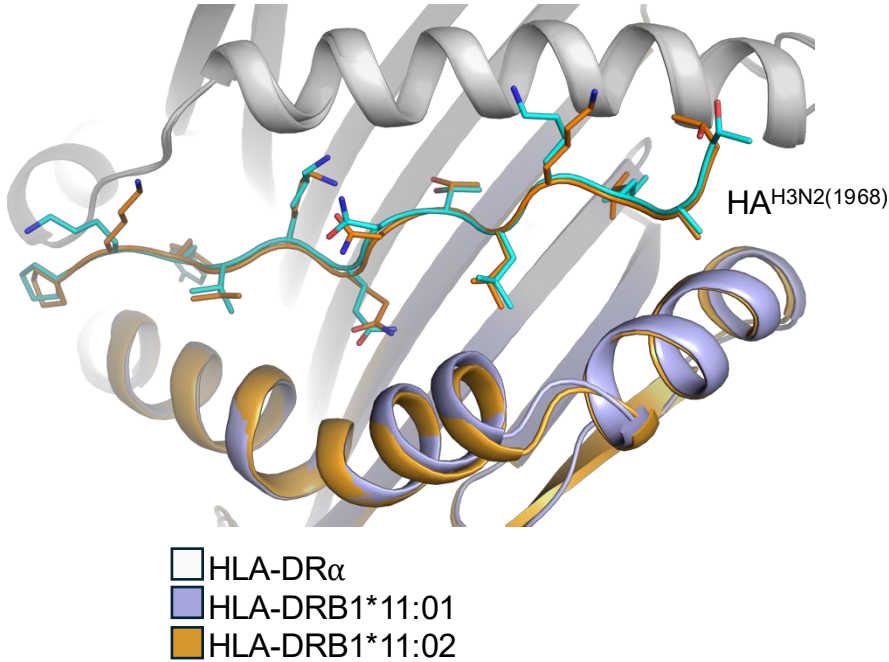
A

DRB1*11:01:01:01	MVCLRLPGGSCMAVLTVTLMLVSSPLALAGDTRPRFLEYSTSECHFFNGTERVRLDRYF
DRB1*11:02:01:01	MVCLRLPGGSCMAVLTVTLMLVSSPLALAGDTRPRFLEYSTSECHFFNGTERVRLDRYF

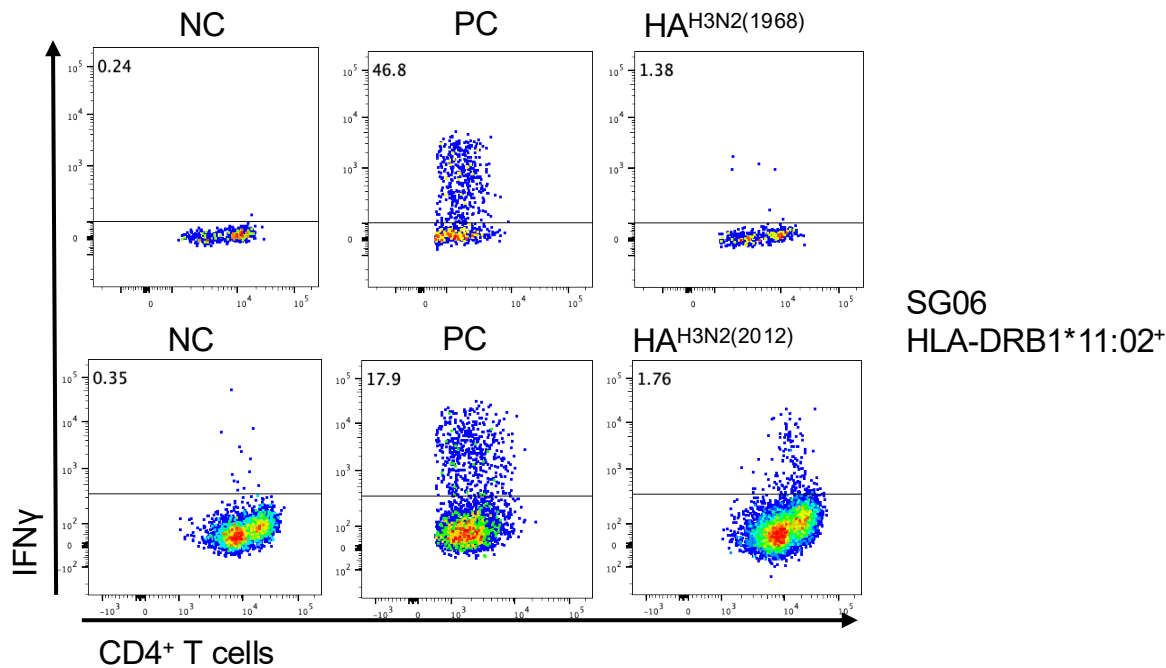
DRB1*11:01:01:01	YNQEEYVRFDSDVGFEFRAVTELGRPDEEYWNSQKDFLEDRAAVDTYCRHNYGVGESFTV
DRB1*11:02:01:01	YNQEEYVRFDSDVGFEFRAVTELGRPDEEYWNSQKDFLEDRAAVDTYCRHNYGVVESFTV
*****:***.*****	
DRB1*11:01:01:01	QRRVHPKVTVPYPSKTQPLQHHNLLVCSVSGFYPGSIEVRWFRNGQEKTGVVSTGLIHNG
DRB1*11:02:01:01	QRRVHPKVTVPYPSKTQPLQHHNLLVCSVSGFYPGSIEVRWFRNGQEKTGVVSTGLIHNG

DRB1*11:01:01:01	DWTFQTLVMLETVPRSGEVYTCQVEHPSVTSPLTVEWRARSESAQSKMLSGVGGFVLGLL
DRB1*11:02:01:01	DWTFQTLVMLETVPRSGEVYTCQVEHPSVTSPLTVEWRARSESAQSKMLSGVGGFVLGLL

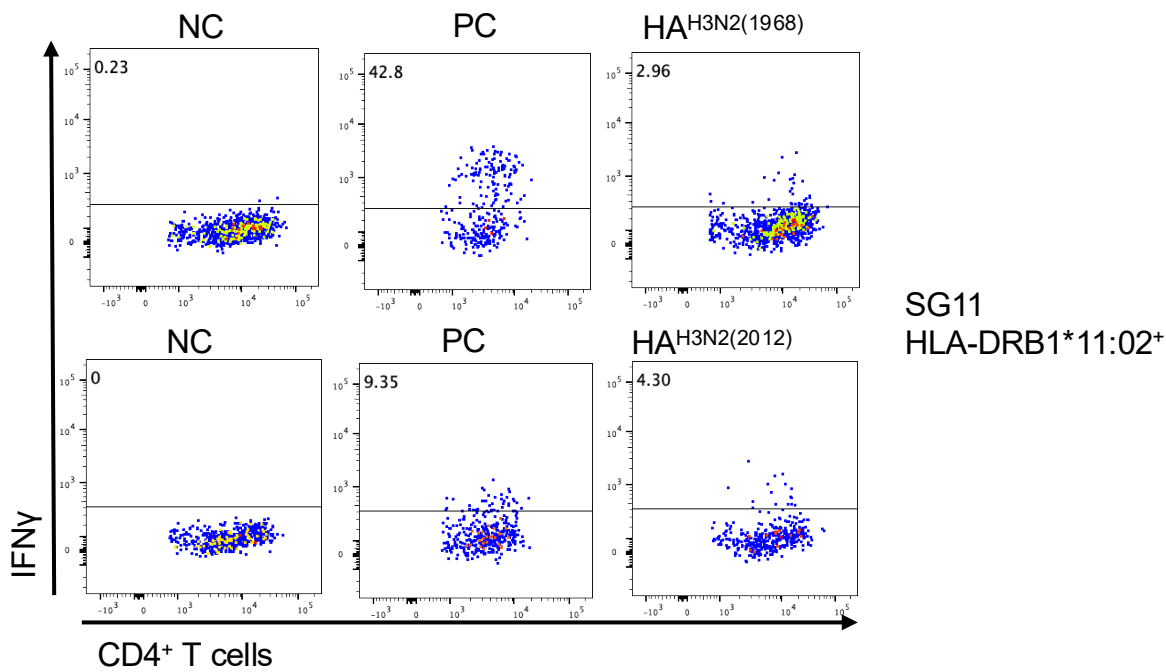
B



C

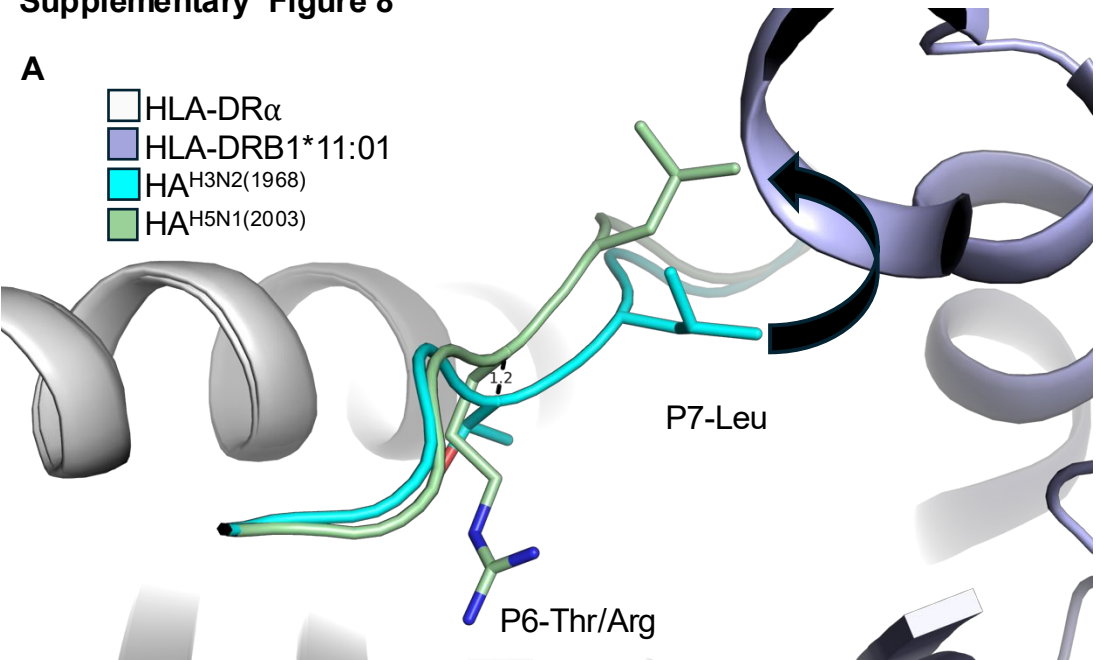


D

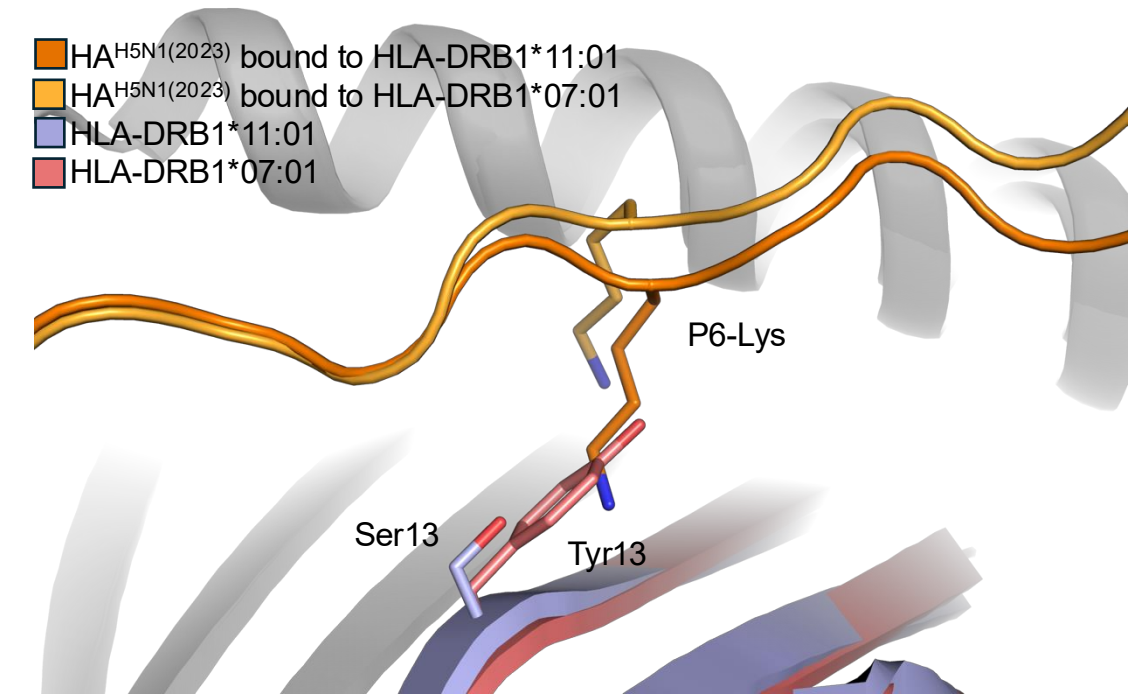


Supplementary Figure 8

A



B



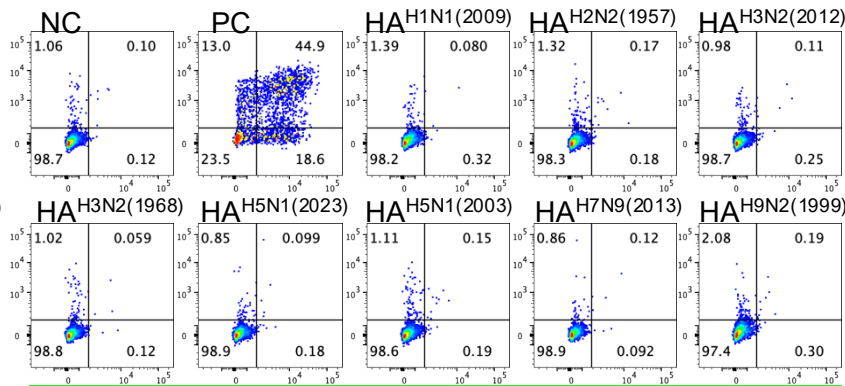
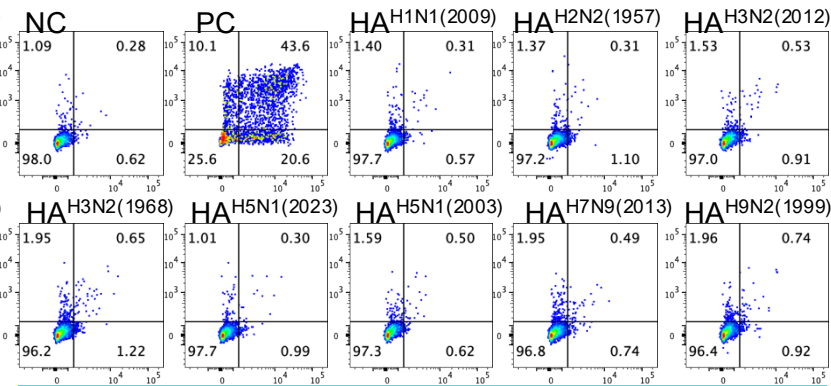
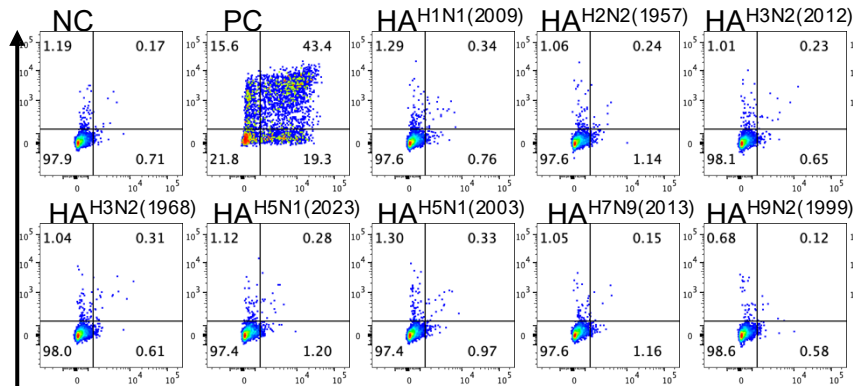
Supplementary Figure 9

HLA-DRB1*07:01+ samples

SG123 - HA^{H1N1}(2009) T cell lines

SG123 – HA^{H3N2}(1968) T cell lines

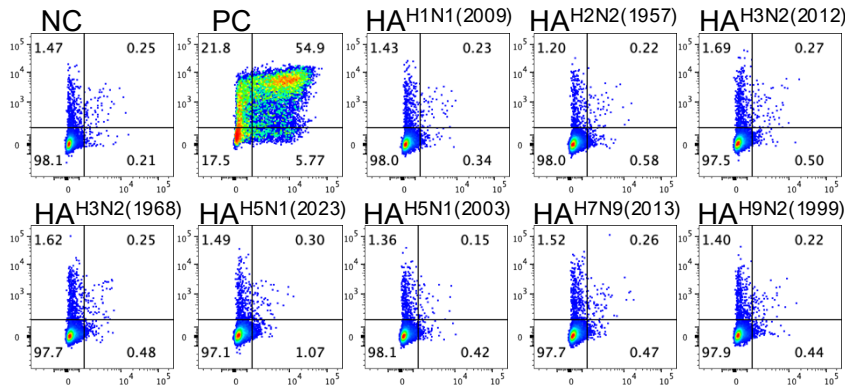
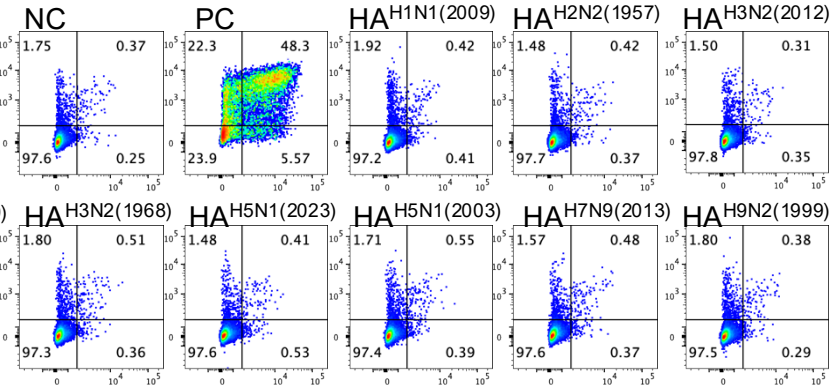
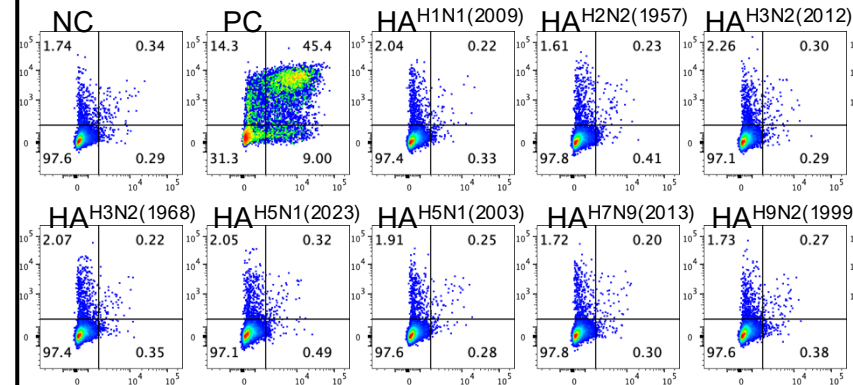
SG123 – HA^{H3N2}(2012) T cell lines



SG125 - HA^{H1N1}(2009) T cell lines

SG125 – HA^{H3N2}(1968) T cell lines

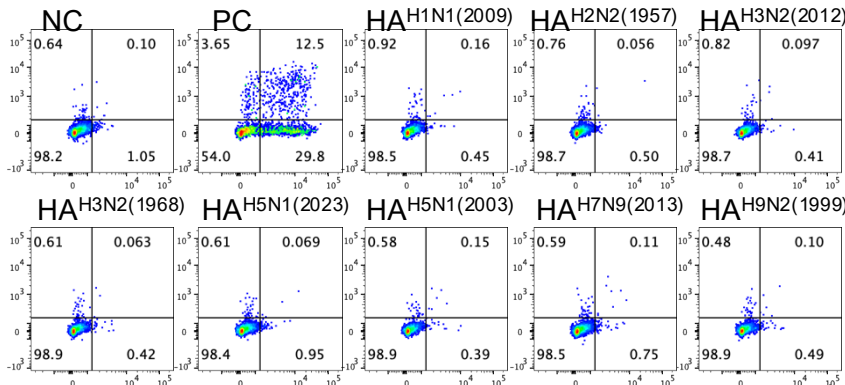
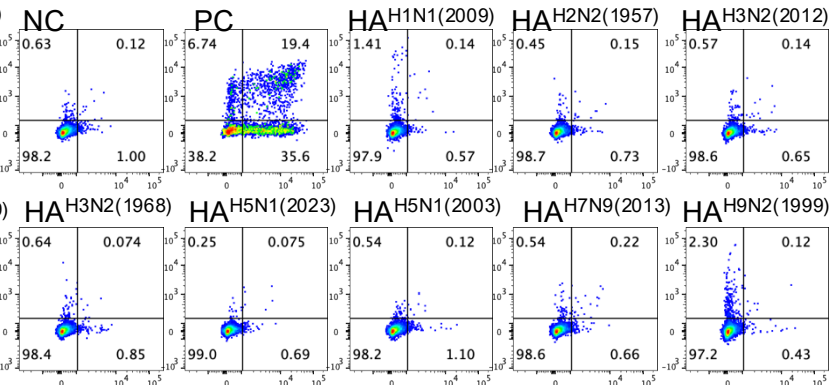
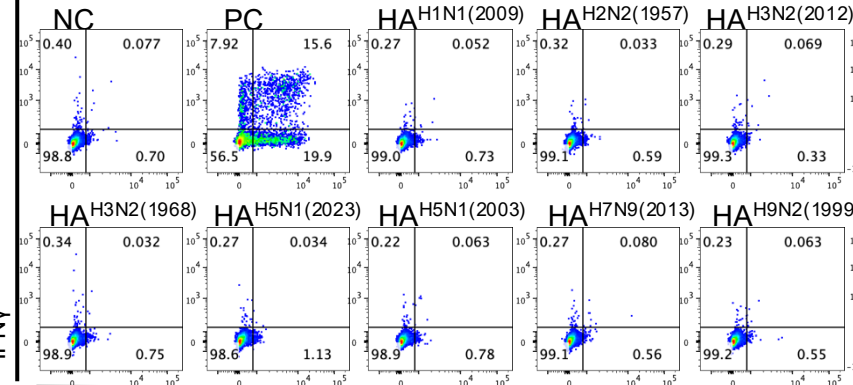
SG125 – HA^{H3N2}(2012) T cell lines



SG115 - HA^{H1N1}(2009) T cell lines

SG115 – HA^{H3N2}(1968) T cell lines

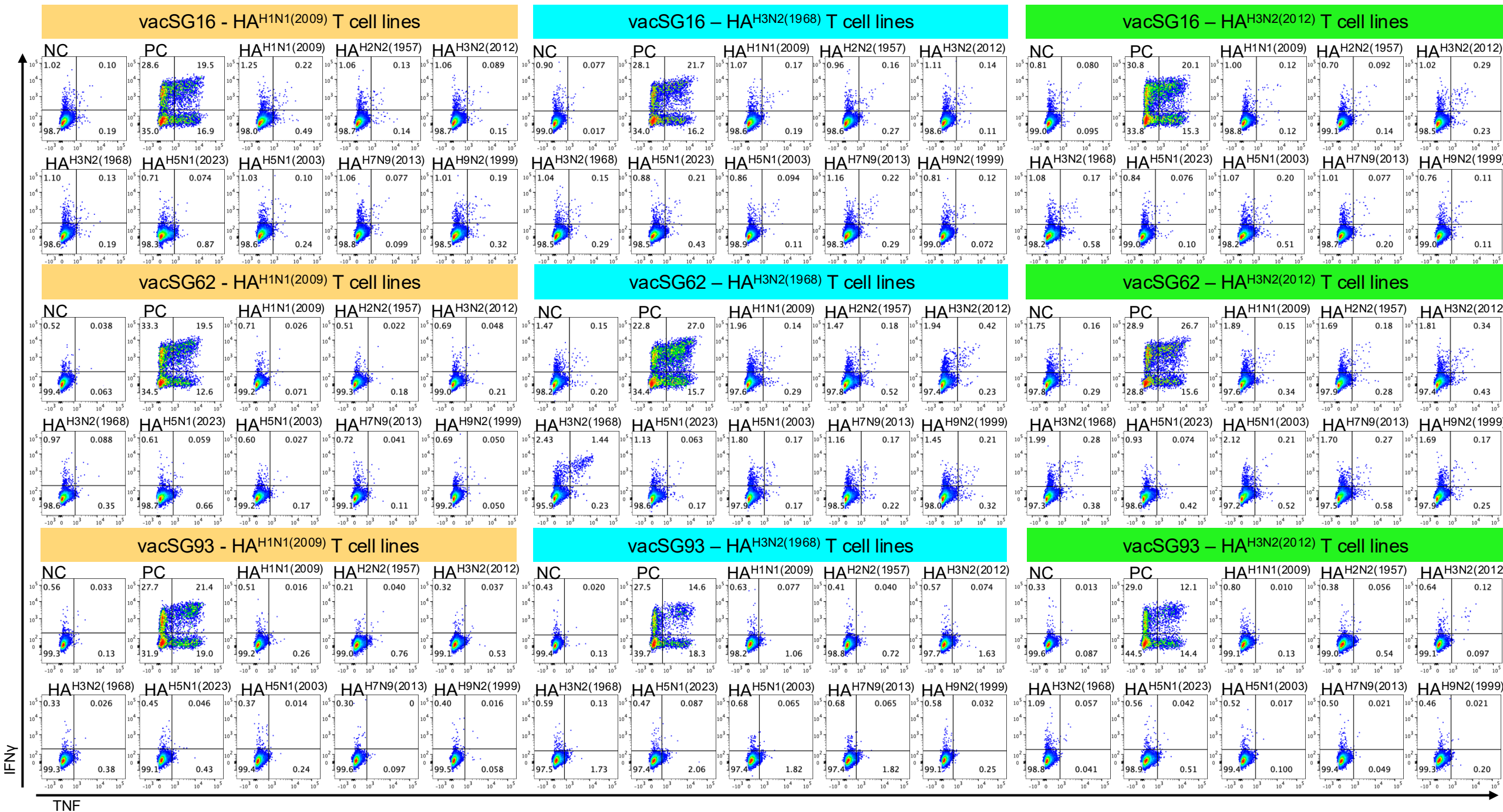
SG115 – HA^{H3N2}(2012) T cell lines



TNF

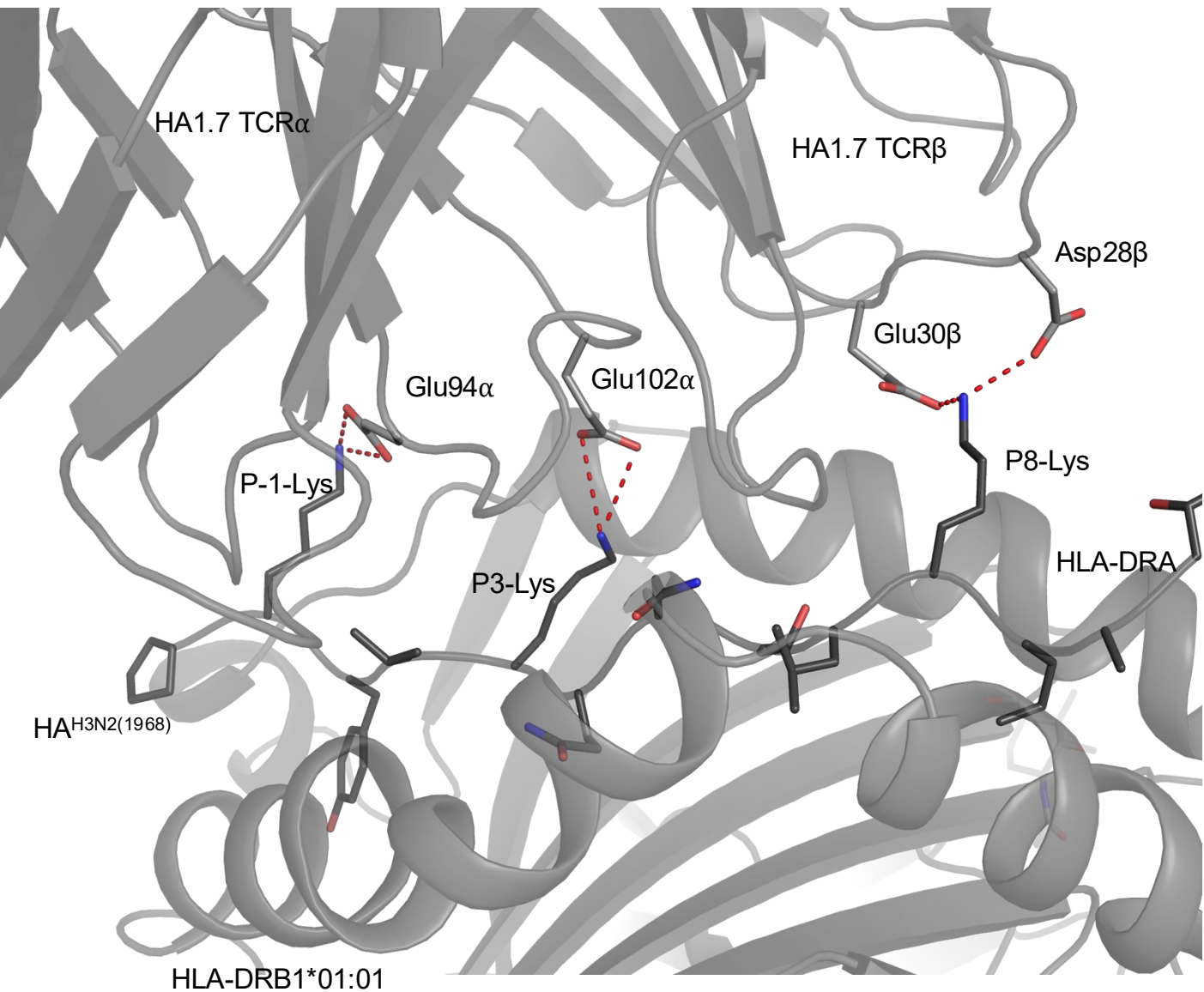
Supplementary Figure 10

HLA-DRB1*11:01+ samples

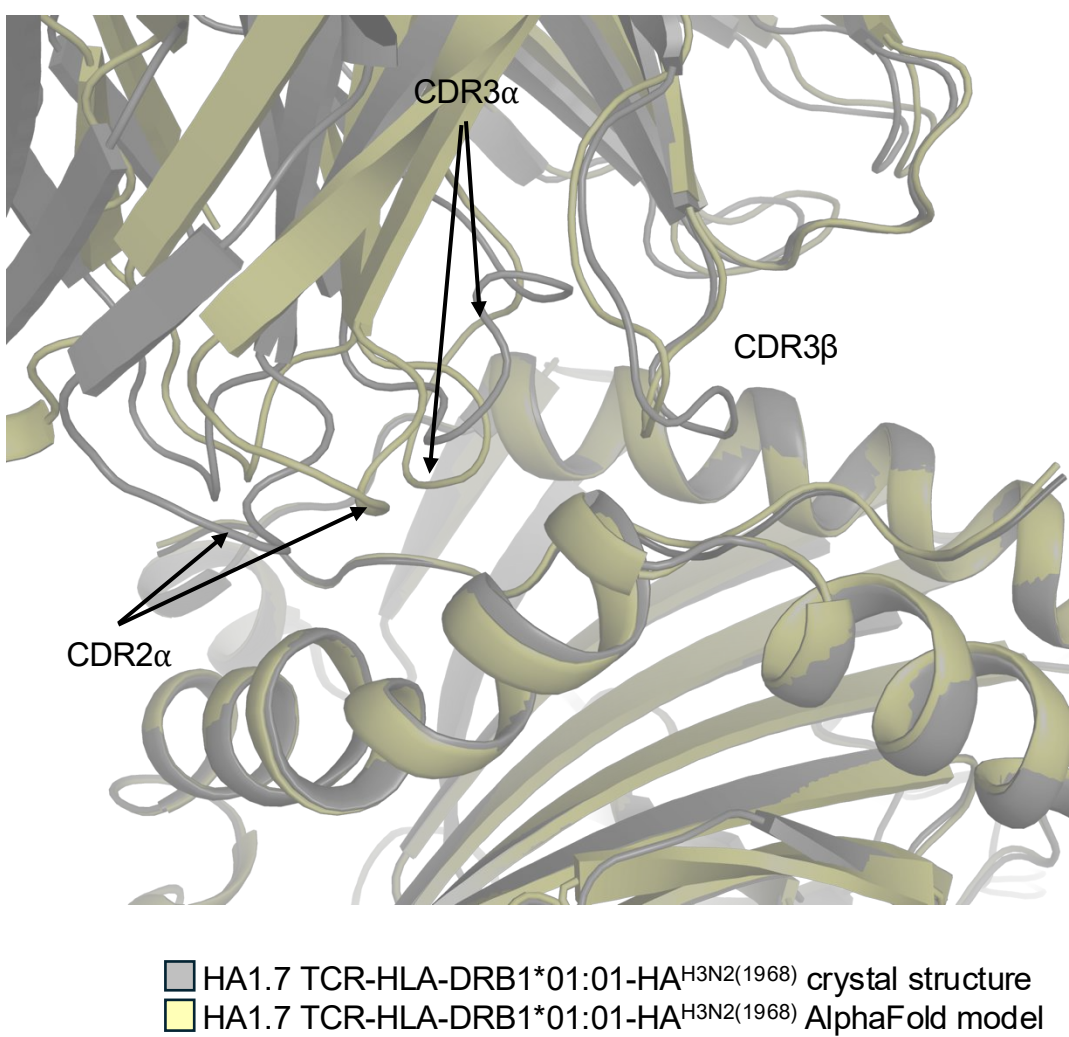


Supplementary Figure 11

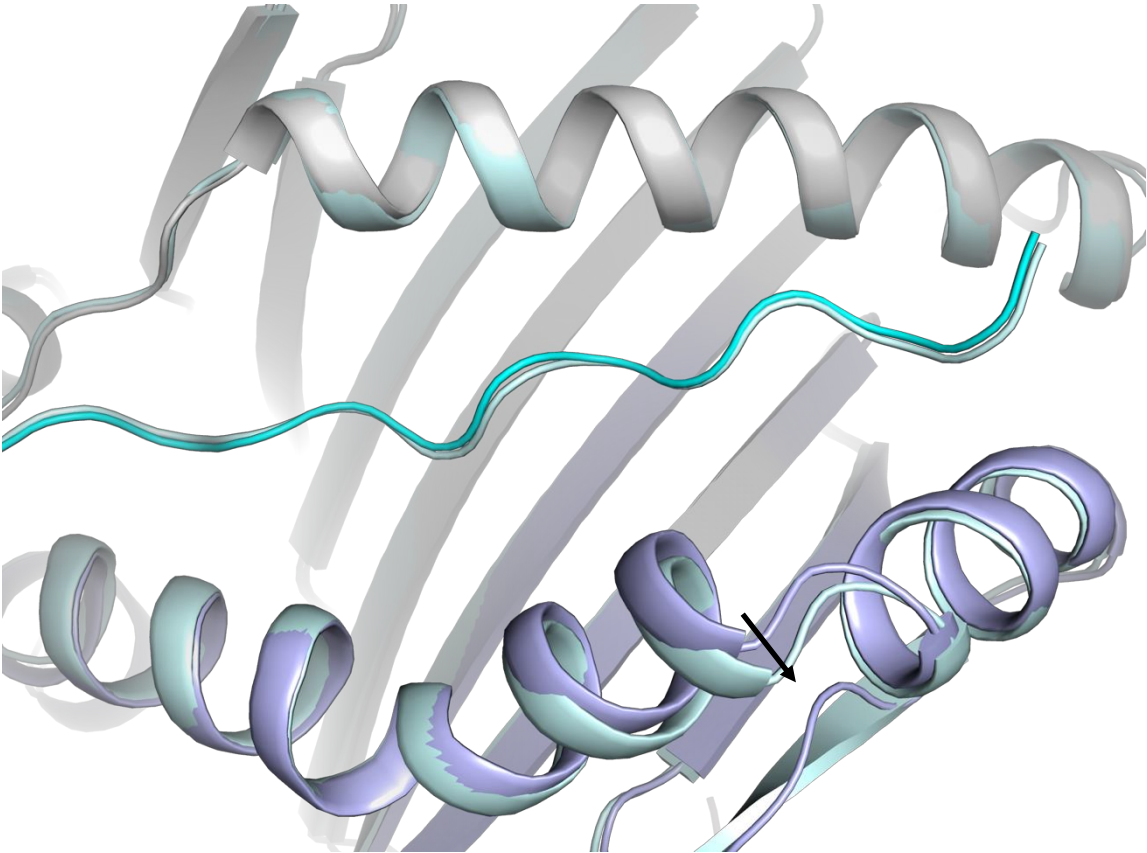
A



B



Supplementary Figure 12



- HLA-DR α
- HLA-DRB1*11:01
- HA^{H3N2(1968)}
- AlphaFold model of HLA-DRB1*11:01-HA^{H3N2(1968)} in complex with HA1.7 TCR