1) m\_IC50\_ellipse\_landscape\_v2.mat:

This MATLAB file contains NAbs with distinct m and IC50 values sampled from the landscape in Fig. 2A.

2) Model\_final\_random\_IgG\_VK\_spectrum\_CI.m:

This code simulates the dynamics in 5 cohorts of 2000 infected individuals each and saves the predictions in V\_final\_CI.mat.

3) Predict\_NT50\_protection.m:

Using data from V\_final\_CI.mat, this code computes protection as a function of NT50 shown in Fig 4D.