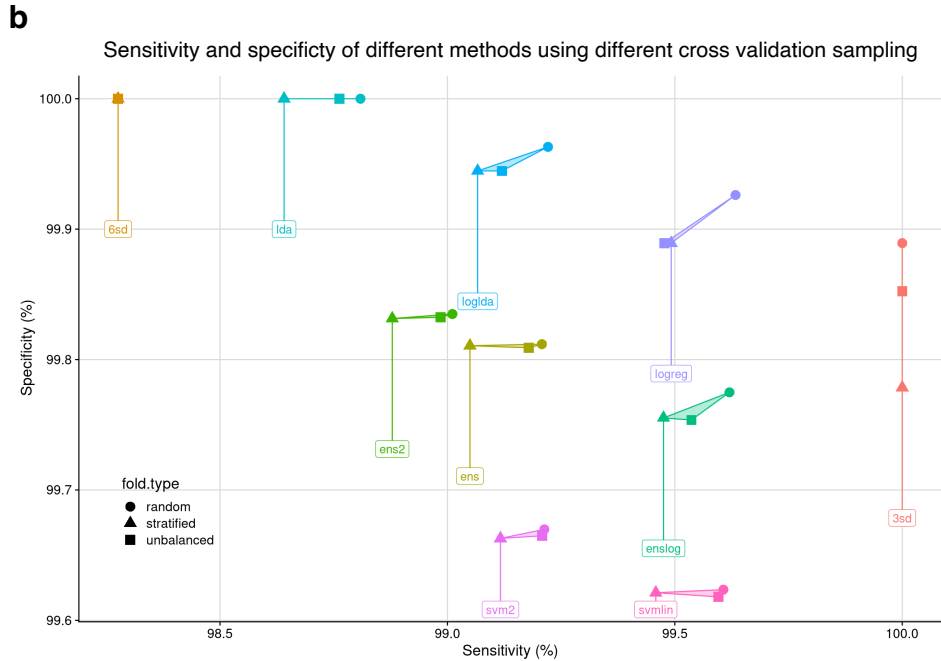
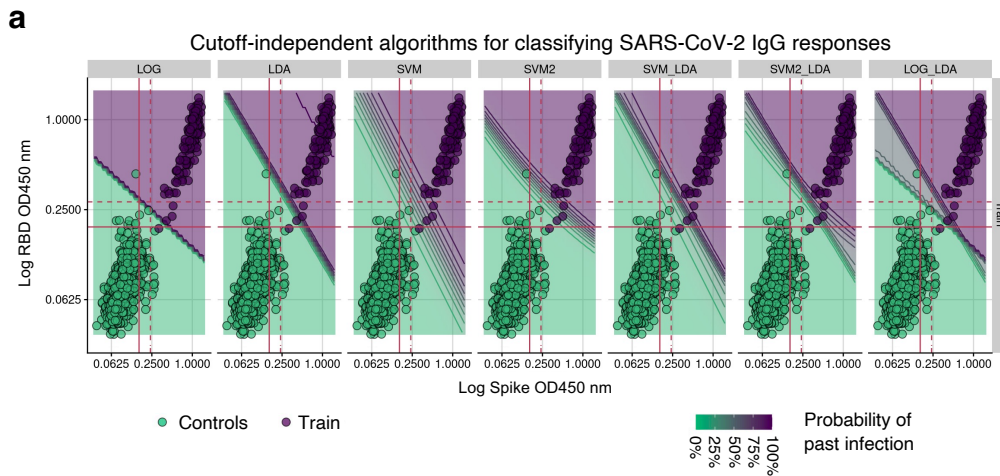


Supplementary Figure 1: Assay development and COVID-19 antibody phenotypes.

(a) Serial dilution of IgG responses so S, RBD and N in a random subset of RT-PCR+ samples used for assay development. Individuals PCR+ for endemic coronaviruses are shown by red dots and lines for each assay. Anti-S Ab responses were frequently detected at 1:20,000 serum dilution using this assay. All samples for the study were run at 1:100 dilution. (b) Serum IL-6 levels in a random subset of RT-PCR+ samples across the clinical spectrum. IL-6 levels were measured using a cytometric bead array. (c) *In vitro* virus neutralizing responses in a random subset of RT-PCR+ samples across the clinical spectrum. Error bars represent the geometric mean with 95% CIs.



Supplementary Figure 2: Comparison of probabilistic and SD-based methods for determining seropositivity.

(a) Comparison of logistic regression (LOG), linear discriminant analysis (LDA), support vector machines (SVM) and quadratic SVM (SVM2) to 3 and 6 SD cutoffs in the training data. Ensemble learners that provide equal-weighted outputs from their parent methods were also created: ens: SVM-LDA; ens2: SVM2-LDA. (b) Sensitivity and specificity behaviors of each method.