

Supplemental Information

Methods

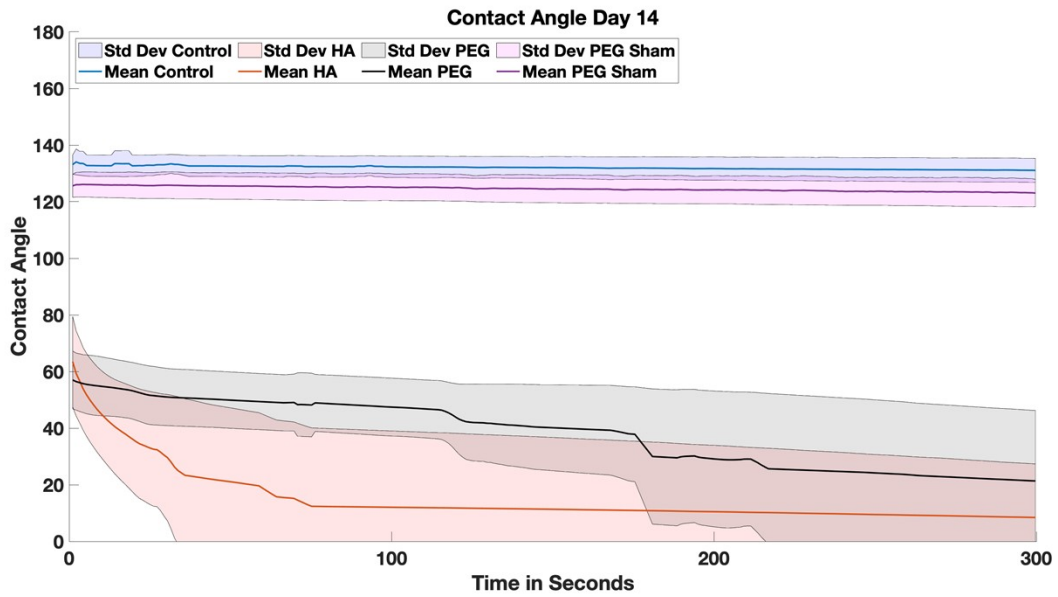
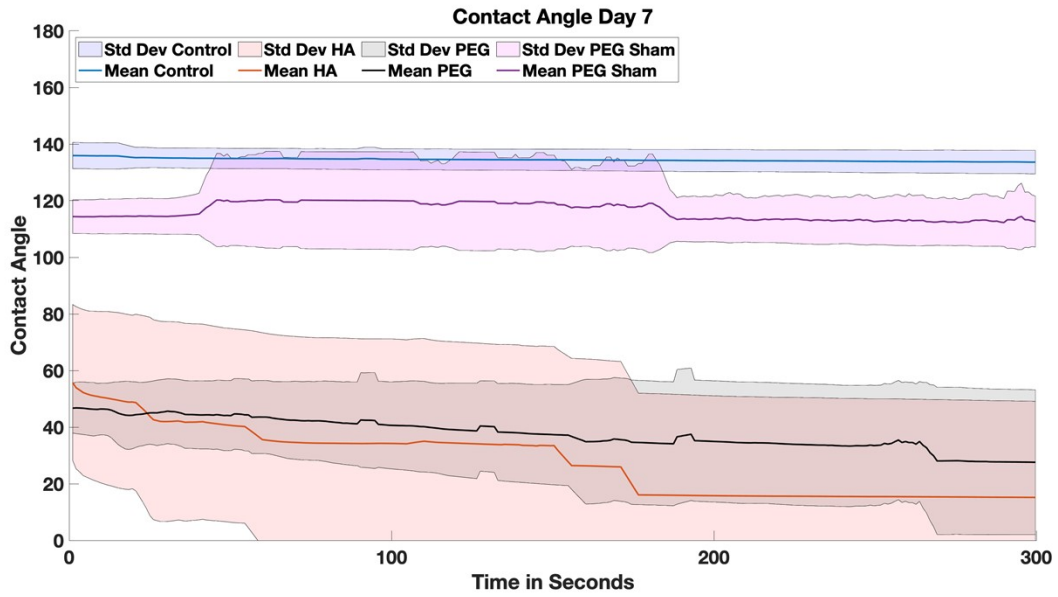
Spike Protein Elisa

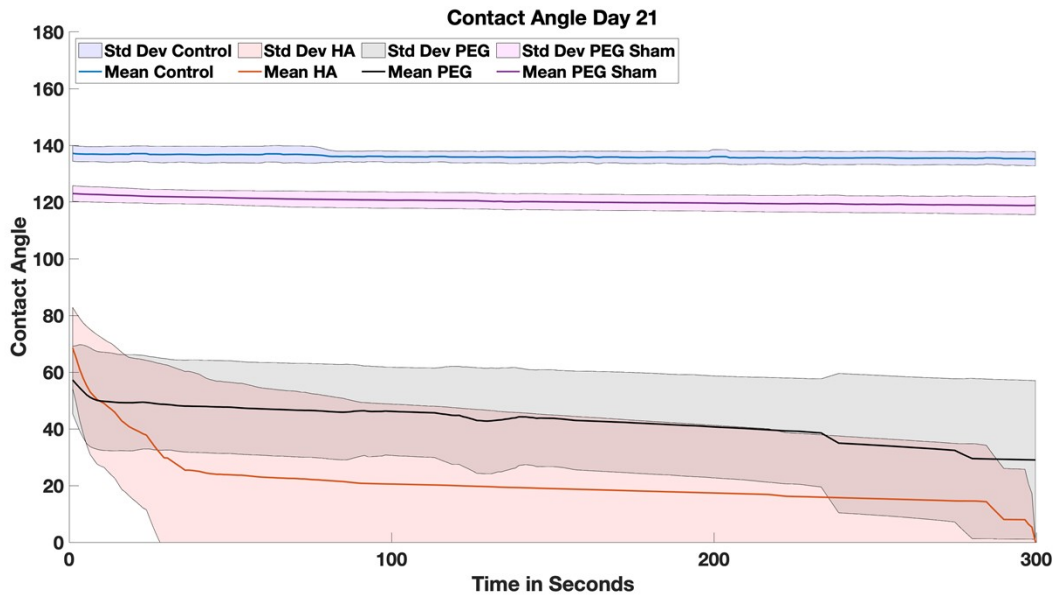
Samples were stored in ambient conditions for 14 days to simulate a brief period of storage before testing. Prior to ELISA studies, all samples were sterilized using sterile PBS and incubated in protein solution (1 µg/ml) for 2 h using a low attachment well plate. Protein solution was also incubated in empty wells as a positive control (the least adsorption possible). After this, the supernatants were collected and diluted 200-fold with assay buffer to obtain a protein solution in the standard curve range. The standard curve was obtained previously using the standards provided by the manufacturer (Sinobiological). The solutions' concentrations were then measured following the ELISA protocol. 100 µl of each diluted solution was added to the wells and incubated for 2 hrs. The wells were washed 4 times with Wash Buffer and 100 µl of Detection Antibody was added. After 1 hr of incubation, the antibody was aspirated and the wells were washed 4 times. 100 µl of TMB substrate solution was then added, followed by 20 mins incubation in dark environment. 100 µl of Stop Solution was then added and the optical density of each well was immediately measured at 450 nm. The concentrations were calculated using the standard curve and the values were subtracted from the positive control to obtain the amount of protein adsorbed on each surface.

We used the spike protein 40591-V08H SARS-CoV-2 (2019-nCoV) Spike S1-His Recombinant Protein (HPLC-verified) in the ELISA study. These were monomer proteins produced in HEK293 cells. The capture antibody employed was 40140-D003 against the RBD (Sinobiological Catalog# 40150-V08B2).

Results

Contact angle data for days 7, 14, and 21





XPS data for days 7, 14, and 21

Day 7 XPS data

Sample	Carbon	Oxygen	Nitrogen	Silicon	Others
PEG	77.21	22.06	0	0.73	0
SHAM	92.11	7.17	0	0.71	0
Control	93.92	3.71	0	2.37	0
HA	70.63	24.39	3.5	0	1.48 (Na)

Day 14 XPS data

Sample	Carbon	Oxygen	Nitrogen	Silicon	Others
PEG	92.38	7.62	0	0	0
SHAM	70.29	23.7	0	6.01	0
Control	90.09	6.43	0	3.49	0
HA	67.85	24.44	5.97	0	1.74(Na)

Day 21 XPS data

Sample	Carbon	Oxygen	Nitrogen	Silicon	Others
PEG	92.95	4.65	0	2.4	0
SHAM	72.97	25.65	0	1.38	0
Control	92.67	5.42	0	1.91	0
HA	63.41	26.95	0.67	8.97	0