

Supplementary Materials

Table S1. Information of recombinant proteins and antibodies

Recombinant proteins	First antibody for WB	Secondary antibody for WB
SARS-CoV-2 (2019-nCoV) Spike S1-His Recombinant Protein [Catalog No. 40591-V08H]*	SARS-CoV-2/2019-nCoV Spike Antibody, Rabbit PAb [Catalog No. 40591]*	Mouse anti-rabbit IgG peroxidase conjugate [Catalog No. A1949]‡
Recombinant 2019-nCoV Spike Protein (RBD, mFc Tag) [Catalog No. PKSR030500]†	SARS-CoV-2 Spike RBD Polyclonal Antibody [Catalog No. E-AB-V1006]†	
SARS-CoV-2 (2019-nCoV) Spike Protein (S2 ECD, His tag) [Catalog No. 40590-V08B]*	SARS-CoV-2/2019-nCoV Spike/S2 Antibody, Rabbit PAb [Catalog No. 40590-T62]*	
SARS-CoV-2 (2019-nCoV) Nucleocapsid Protein (His tag) [Catalog No. 40588-V08B]*	SARS-CoV-2 (2019-nCoV) Nucleoprotein/NP Antibody, Rabbit Mab [Catalog No. 40143-R019]*	

*Purchased from Sino Biological Inc., Beijing, China

†Purchased from Elabscience Biotechnology Inc., TX, USA

‡Purchased from Sigma-Aldrich, Inc., Saint Louis, MO, USA

The data presented in this study

Figure 1A

		0.5 h				1 h			
		HIDROX				HIDROX			
		PBS	4.5 mg/ml	0.9 mg/ml	0.45 mg/ml	PBS	4.5 mg/ml	0.9 mg/ml	0.45 mg/ml
	tube 1	6.25	4.25	6.25	5.75	7.25	2.75	5.25	5.75
	tube 2	6.75	3.75	5.75	6.25	6.75	2.25	4.75	5.75
	tube 3	7.25	4.75	5.25	6.25	6.75	3.25	5.25	6.25
	mean	6.75	4.25	5.75	6.083333	6.916667	2.75	5.083333	5.916667
	stdev	0.5	0.5	0.5	0.288675	0.288675	0.5	0.288675	0.288675
	PBS group – test group		2.5	1	0.666667		4.166667	1.833333	1
	Virus inactivation rate		99.68377	90	78.45565		99.99319	98.5322	90
		3 h				6 h			
		HIDROX				HIDROX			
		PBS	4.5 mg/ml	0.9 mg/ml	0.45 mg/ml	PBS	4.5 mg/ml	0.9 mg/ml	0.45 mg/ml
	tube 1	6.25	2.25	3.75	5.25	6.25	2.25	3.25	4.25
	tube 2	6.25	2.25	3.25	5.25	5.75	2.25	3.25	4.75
	tube 3	6.75	2.25	3.75	5.75	6.25	2.25	3.25	5.25
	mean	6.416667	2.25	3.583333	5.416667	6.083333	2.25	3.25	4.75
	stdev	0.288675	0	0.288675	0.288675	0.288675	0	0	0.5
	PBS group – test group		4.166667	2.833333	1		3.833333	2.833333	1.333333
	Virus inactivation rate		99.99319	99.85322	90		99.98532	99.85322	95.35841
		24 h							
		HIDROX							
		PBS	4.5 mg/ml	0.9 mg/ml	0.45 mg/ml				
	tube 1	6.25	2.25	2.25	3.75				
	tube 2	5.75	2.25	2.25	4.25				
	tube 3	6.25	2.25	2.25	3.75				
	mean	6.083333	2.25	2.25	3.916667				
	stdev	0.288675	0	0	0.288675				
	PBS group – test group		3.833333	3.833333	2.166667				
	Virus inactivation rate		99.98532	99.98532	99.31871				

Figure 1B

			5 min			
				HIDROX		
			PBS	5.63 mg/m	11.25 mg/ml	
		tube 1	5.25	4.75	4.25	
		tube 2	5.75	4.25	4.25	
		tube 3	6.25	5.25	4.25	
		tube 4	5.25	4.75	4.25	
		mean	5.625	4.75	4.25	
		stdev	0.478714	0.408248	0	
		PBS group – test group		0.875	1.375	
		Virus inactivation rate		86.66479	95.78303	

Figure 2

		3 h			
		PBS	0.9 mg/ml HIDROX	0.9 mg/ml HT	0.05 mg/ml HT
	tube 1	5.75	3.25	5.75	5.25
	tube 2	5.75	3.25	4.25	5.25
	tube 3	5.25	3.25	4.75	5.25
	tube 4	5.75	3.75	5.25	5.25
	mean	5.625	3.375	5	5.25
	stdev	0.25	0.25	0.645497224	0
PBS group – test group			2.25	0.625	0.375
Virus inactivation rate			99.43765867	76.28626294	57.83034966
		24 h			
		PBS	0.9 mg/ml HIDROX	0.9 mg/ml HT	0.05 mg/ml HT
	tube 1	5.75	≤2.25	≤2.25	4.75
	tube 2	5.75	≤2.25	≤2.25	5.25
	tube 3	6.25	≤2.25	≤2.25	5.25
	tube 4	5.75	≤2.25	≤2.25	5.75
	mean	5.875	≤2.25	≤2.25	5.25
	stdev	0.25	0	0	0.40824829
PBS group – test group			≥3.625	≥3.625	0.625
Virus inactivation rate			≥99.976	≥99.976	76.28626294

Figure 3A

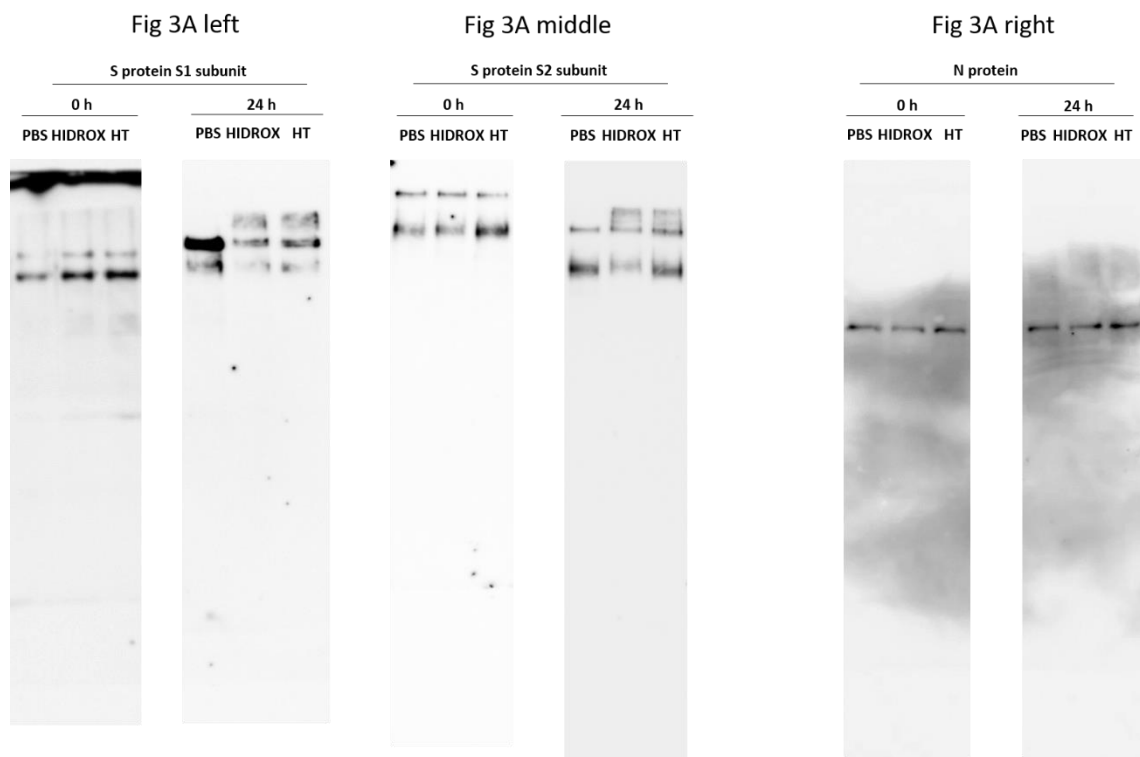


Figure 3B

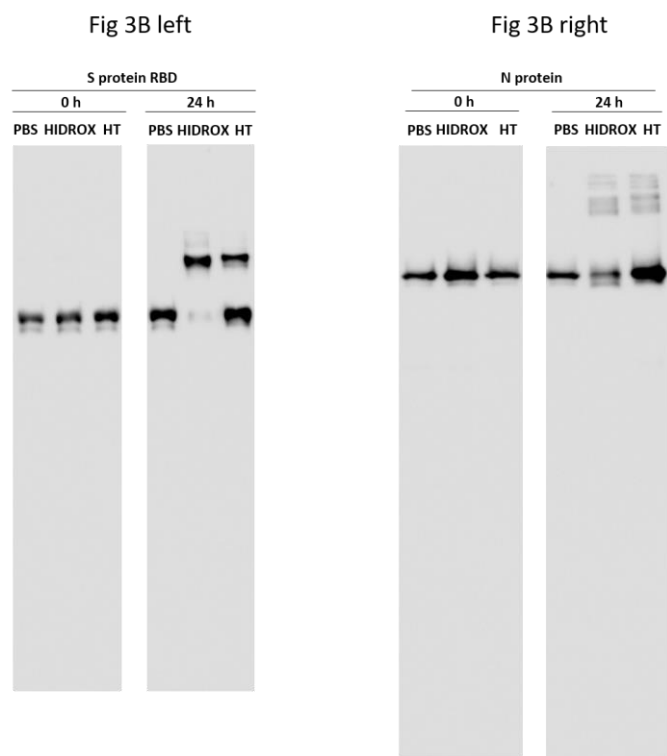


Figure 4

Fig 4 left

S protein S1 subunit			
Glycosylated		Deglycosylated	
PBS	HIDROX HT	PBS	HIDROX HT

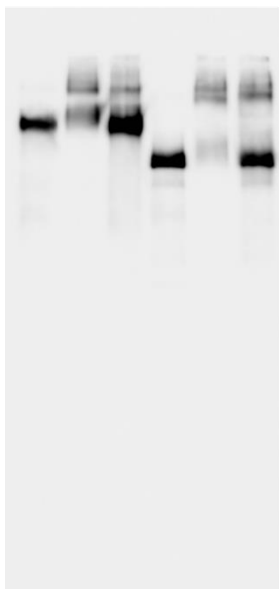


Fig 4 middle

RBD			
Glycosylated		Deglycosylated	
PBS	HIDROX HT	PBS	HIDROX HT

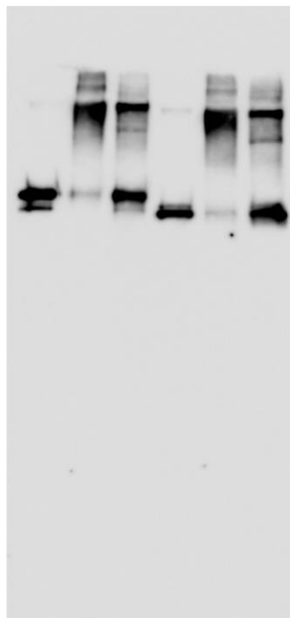


Fig 4 right

S protein S2 subunit			
Glycosylated		Deglycosylated	
PBS	HIDROX HT	PBS	HIDROX HT

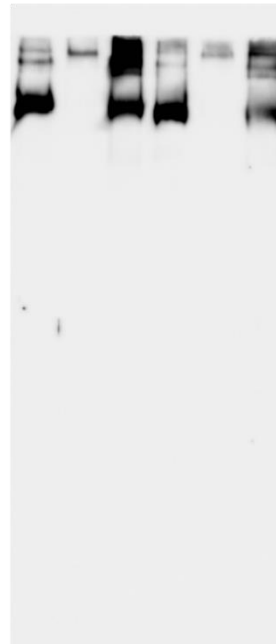


Figure 5

		0 h		
		PBS	HIDROX (0.9 mg/ml)	HT (0.9 mg/ml)
	Tube 1	24.798	24.566	24.092
	Tube 2	26.531	23.468	23.949
	Tube 3	23.487	24.589	25.082
	Tube 4	24.495	24.384	23.903
	mean	24.82775	24.25175	24.2565
	STDEV	1.266265	0.530485548	0.55618612
PBS group – test group			0.576	0.57125
		24 h		
		PBS	HIDROX (0.9 mg/ml)	HT (0.9 mg/ml)
	Tube 1	23.868	26.611	26.921
	Tube 2	23.505	27.218	27.24
	Tube 3	23.457	26.844	26.154
	Tube 4	25.002	27.922	26.021
	mean	23.958	27.14875	26.584
	STDEV	0.719779	0.572933606	0.590416237
PBS group – test group			-3.19075	-2.626

Figure 6

10 min					30 min					1 h				
HIDROX					HIDROX					HIDROX				
	0%	2%	5%	10%		0%	2%	5%	10%		0%	2%	5%	10%
tube 1	5.25	4.75	4.75	4.25	tube 1	5.25	3.75	2.75	≤1.25	tube 1	5.25	3.25	3.25	≤1.25
tube 2	4.25	4.75	4.25	3.75	tube 2	4.75	3.75	2.25	2.75	tube 2	5.25	2.75	≤1.75	≤1.25
tube 3	5.25	4.75	4.75	3.75	tube 3	5.75	3.75	2.75	2.75	tube 3	4.75	3.25	2.25	≤1.25
tube 4	4.75	4.75	4.25	3.25	tube 4	5.25	4.25	3.75	≤1.75	tube 4	6.25	2.75	≤1.25	≤1.75
tube 5	6.25	4.25	4.25	3.75	tube 5	4.25	4.75	4.25	3.25	tube 5	5.25	4.25	2.75	2.25
tube 6	5.25	4.25	4.25	3.75	tube 6	5.25	3.75	3.75	3.25	tube 6	5.25	4.25	2.25	≤1.75
tube 7	4.75	5.25	4.75	3.75	tube 7	6.25	3.75	3.75	3.25	tube 7	4.75	3.75	2.75	2.75
tube 8	4.75	4.25	3.75	4.25	tube 8	5.25	4.25	3.75	3.75	tube 8	5.25	3.75	2.25	2.25
mean	5.0625	4.625	4.375	3.8125		5.25	4	3.375	≤2.75		5.25	3.5	≤2.3125	≤1.8125
stdev	0.593867	0.353553	0.353553	0.320435		0.597614	0.377964	0.694365	0.3763863		0.46291	0.597614	0.408248	0.288675
0% HIDROX group - test group		0.4375	0.6875	1.25			1.25	1.875	≥2.5			1.75	≥2.9375	≥3.4375
Virus inactivation rate		63.48259	79.46475	94.37659			94.37659	98.66648	≥99.684			98.22172	≥99.885	≥99.964
3 h					6 h									
HIDROX					HIDROX									
	0%	2%	5%	10%		0%	2%	5%	10%					
tube 1	5.75	≤1.25	≤1.25	≤1.25	tube 1	4.75	≤1.25	≤1.25	≤1.25					
tube 2	5.25	≤1.25	≤1.25	≤1.25	tube 2	5.25	≤1.25	≤1.25	≤1.25					
tube 3	5.25	≤1.25	≤1.25	≤1.25	tube 3	5.25	≤1.25	≤1.25	≤1.25					
tube 4	5.75	≤1.25	≤1.25	≤1.25	tube 4	4.25	≤1.25	≤1.25	≤1.25					
tube 5	4.75	2.25	≤1.25	≤1.25	tube 5									
tube 6	4.75	2.25	≤1.25	≤1.25	tube 6									
tube 7					tube 7									
tube 8					tube 8									
mean	5.25	≤1.5833	≤1.25	≤1.25		4.875	≤1.25	≤1.25	≤1.25					
stdev	0.447214	0.516398	0	0		0.478714	0	0	0					
0% HIDROX group - test group		≥3.667	≥4	≥4			≥3.625	≥3.625	≥3.625					
Virus inactivation rate		≥99.979	≥99.99	≥99.99			≥99.976	≥99.976	≥99.976					