Supplementary Table 1. Compounds with antiSARS-CoV-2 activity

Pathway	Molecular name	Molecular Formula	Target
RTK (FLT3 EGFR Akt MEK) inhibitor			
	Sunitinib	C22H27FN4O2	VEGFR2(Flk-1), PDGFR β , FLT3, c-Kit
	Gilteritinib (ASP2215)	C29H44N8O3	FLT3, AXL
	Sorafenib	C21H16ClF3N4O3	Raf-1/B-Raf, VEGFR2/Flk1, B-Raf (V599E), PDGFRβ
	Crizotinib	C21H22Cl2FN5O	c-Met/ALK, ROS1
	(S)-crizotinib	C21H22Cl2FN5O	MTH1 (NUDT1)
	Ceritinib	C28H36ClN5O3S	ALK, Insulin Receptor, IGF-1R. STK22D, FLT3
	pazopanib	C21H23N7O2S	VEGFR1, VEGFR2, VEGFR3, PDGFR, c-Kit
	ponatinib	C29H27F3N6O	Abl, PDGFR α , VEGFR2, FGFR1, c-Src
	Osimertinib (AZD9291)	C28H33N7O2	L858R/T790M EGFR, Exon 19 deletion EGFR, WT EGFR
	Osimertinib mesylate	C29H37N7O5S	EGFR
	Dacomitinib	C24H25ClFN5O2	EGFR, ErbB2, ErbB4
	Afatinib (BIBW2992) Dimaleate	C24H25ClFN5O3.2C4H4O4	HER2, EGFR (L858R) , EGFR (wt) , EGFR (L858R/T790M)
	Olmutinib(HM61713)	C26H26N6O2S	mutant EGFR, BTK
	Bortezomib	C19H25BN4O4	20S proteasome, NF-κB
	Bosutinib	C26H29Cl2N5O3	Src/Abl, S6 kinase, ERK, STAT3
	Carfilzomib (PR-171)	C40H57N5O7	proteasome
	Perifosine(KRX-0401)	C25H52NO4P	Akt
	Fangchinoline	C37H40N2O6	Focal adhesion kinase (FAK)
	(+)-Fangchinoline	C37H40N2O6	Focal adhesion kinase (FAK)
	Nilotinb hydrochloride	C28H22F3N7O.HCl	Bcr-Abl
	Cobimetinbi(GDC-0973)	C21H21F3IN3O2	MEK1
	Berbamine	C37H40N2O6	Bcr-Abl, NF-κB, CaMKII
	Berbamine dihydrochloride	C37H40N2O6.2HCl	Bcr-Abl, NF-κB, CaMKII

Abemaciclib	C27H32F2N8	CDK4/ CDK6
Na/K-ATPase inhibitor		
Amiodarone HCl	C25H29I2NO3.HCl	Potassium channel
Ouabain	C29H44O12.8H2O	Na+/K+-ATPase, α3, α2
CB-5083	C24H23N5O2	p97 AAA ATPase
Lanatoside C	C49H76O20	
Digoxigenin	$C_{23}H_{34}O_5$	
phospholipase A2 inhibitor		
Quinacrine 2HCl	C23H30ClN3O.2HCl	phospholipase A2
Tanshinone I	C18H12O3	phospholipase A2
Histamine H1 receptor inhibitor		
Ebastine	C32H39NO2	H1-histamine receptor
Terfenadine	C32H41NO2	H1 histamine receptor、caspase2，4，9, Ca^{2+} homeostasis
5-HT inhibitor, Dopamine receptor inhibitor，adrenoceptor inhibitor		
Sertraline HCl	C17H17Cl2N.HCl	5-HT receptor
Perphenazine	C21H26ClN3OS	D1/D2 dopamine receptors
Vortioxetine	C18H22N2S	5-HT receptor
Vortioxetine (Lu AA21004)	C18H22N2S.HBr	SERT, 5-HT3A, 5-HT1A, 5-HT7, 5-HT1B
Chlorpromazine	C17H19ClN2S	5-HT(2A) receptor / dopamine D2
Pimavanserin	C50H68F2N6O4.C4H6O6	5-HT2A
Asenapine maleate	C17H16ClNO.C4H4O4	5-HT2C, 5-HT2A, 5-HT7, 5-HT2B, 5-HT6
Vilazodone HCl	C26H27N5O2.HCl	SSRI, 5-HT1A
Thioridazine hydrochloride	C21H26N2S2.HCl	5-HT, Dopamine D2 receptor
Trifluoperazine 2HCl	C21H24F3N3S.2HCl	Dopamine D2 receptor
Pimozide	$C_{28}H_{29}F_2N_3O$	STAT3, STAT5, Dopamine receptors, 5-HT1A

Azaperone	C19H22FN3O	Dopamine receptors
Flupenthixol dihydrochloride	C23H25F3N2OS.2HCl	Dopamine D1/D2 receptor
Chlorpromazine HCl	C17H19ClN2S.HCl	Dopamine receptor,Potassium channel
Prochlorperazine dimaleate salt	C20H24ClN3S.C8H8O8	Dopamine D2 receptor
Penfluridol	C28H27ClF5NO	Dopamine receptor
Dronedarone HCl	C31H44N2O5S.HCl	Potassium channel, Sodium channel, Calsium channel
Dronedarone	C31H44N2O5S	Potassium channel, Sodium channel, Calsium channel
Nebivolol HCl	C22H25F2NO4.HCl	β 1-adrenoceptor
Carvedilol Phosphate	C24H29N2O8P.1/2H2O	β / α -1 adrenoceptor
Reserpine	$C_{33}H_{40}N_2O_9$	vesicular monoamine transporter 2 (VMAT2)
Teryzoline		

Dihydrofolate reductase (DHFR) inhibitor

Methotrexate	C20H22N8O5	Dihydrofolate reductase (DHFR)
Pralatrexate	C23H23N7O5	Dihydrofolate reductase (DHFR)
Methotrexate disodium	C20H20N8O5.2Na	Dihydrofolate reductase (DHFR)

TLR inhibitor

Chloroquine phosphate	C18H26ClN3.2H3O4P	TLRs, ATM
Hydroxychloroquine Sulfate	C18H28ClN3O5S	autophagy TLR9

Selective estrogen receptor modulater

Bazedoxifene HCl	C30H34N2O3.HCl	Estrogen receptor
Clomifene citrate	C26H28ClNO.C6H8O7	Estrogen receptor
Bazedoxifene Acetate	C30H34N2O3.C2H4O2	Estrogen receptor
Raloxifene	C28H27NO4S	Estrogen receptor
Tamoxifen Citrate	C26H29NO.C6H8O7	Estrogen receptor

NF-κB inhibitor

Quinacrine Dihydrochloride	$C_{23}H_{32}Cl_3N_3O$	NF-κB
(-)-Parthenolide	C15H20O3	NF-κB, HDAC1,MDM2 ubiquitination, p53
Sanguinarine chloride	C20H14NO4.Cl	protein phosphatase (PP) 2C
Sanguinarine	C20H14NO4	NF-κB
Microsomal triglyceride transfer protein (MTP) inhibitor		
Lomitapide Mesylate	C40H41F6N3O5S	Microsomal triglyceride transfer protein (MTP)
Lomitapide	C39H37F6N3O2	Microsomal triglyceride transfer protein (MTP)
Sphingosine 1-phosphate (S1P) antagonist		
Fingolimod	C19H33NO2	S1P receptor
Fingolimod (FTY720)	C19H33NO2.HCl	S1P receptor
AChR alpha-2 blocking agent		
Cisatracurium Besylate	C53H72N2O12.2C6H5O3S	Adrenergic Receptor
Antibacterial, antiviral, and antimalarial drugs		
Trimethoprim	C14H18N4O3	
Sodium phytate hydrate	C6H18O24P6 xNa yH2O	
Thioguanine	C5H5N5S	DNMT1
Acetylspiramycin	C45H76N2O15	
Amodiaquine	C20H22ClN3O	
Amodiaquine hydrochloride	C20H22ClN3O.2HCl	
Tilorone dihydrochloride	C25H34N2O3.2HCl	
Selamectin	C43H63NO11	Glutamate-gated chloride channels
Proflavine	C13H11N3	
Salinomycin sodium salt	$C_{42}H_{69}NaO_{11}$	Wnt/β-catenin, CK2α, CK2α'
Homoharringtonine	C29H39NO9	
Harringtonine	$C_{28}H_{37}NO_9$	
Harringtonine	$C_{16}H_{17}BrClN_3O_3$	prolyl-tRNA synthetase，Smad3

Mefloquine HCl	C17H17ClF6N2O	
Amsacrine hydrochloride	C21H20ClN3O3S	topo II
Orlistat	C29H53NO5	Lipase, Fatty acid synthesis
Methylene Blue	C16H18ClN3S	Guanylate cyclase, Tau aggregation
Ciclesonide	C32H44O7	

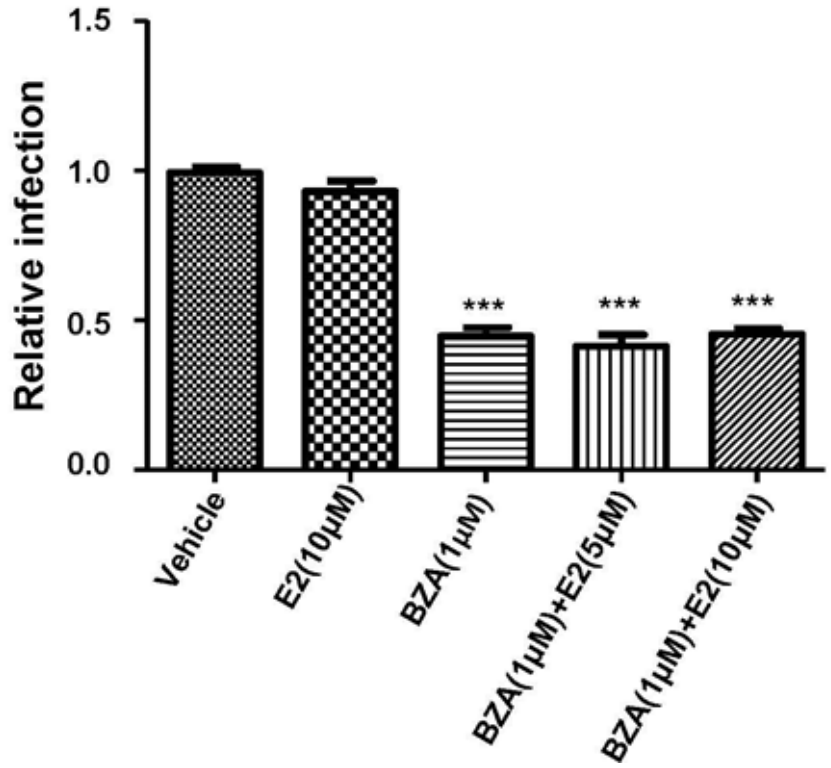
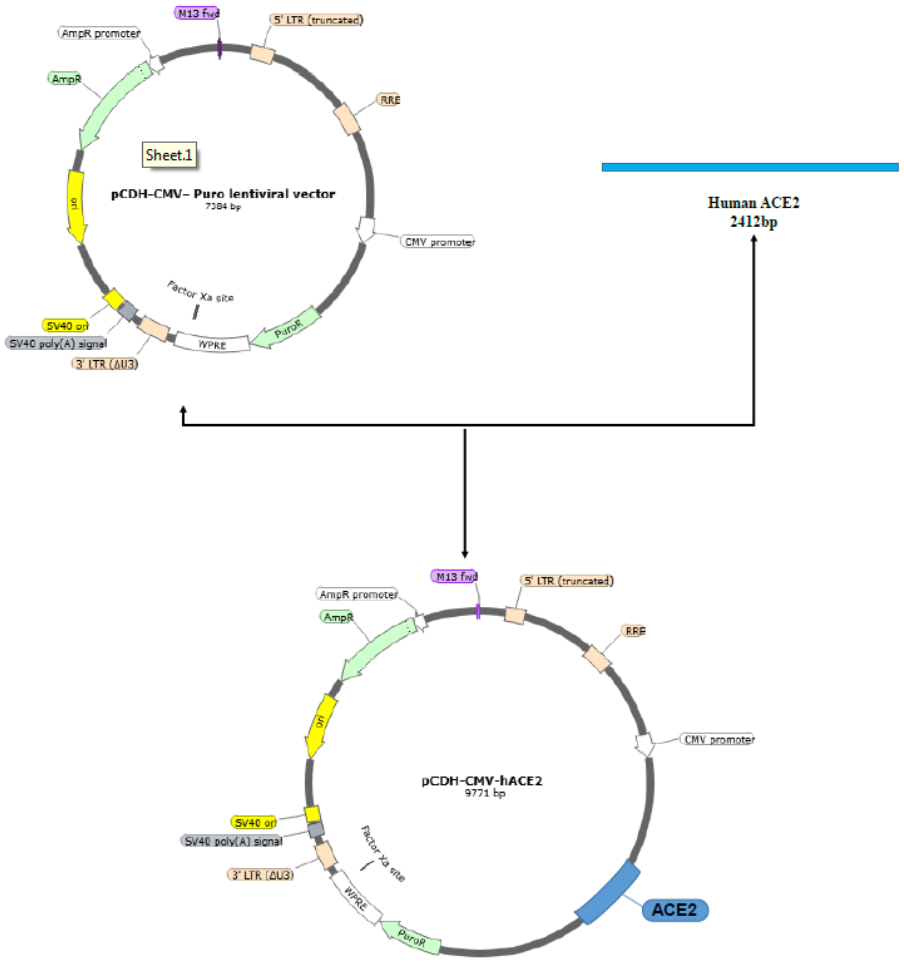


Figure S1. Estradiol (E2) does not reverse or promote the antiviral activity of bazedoxifene (BZA). 1×10^4 Vero E6 cells were seeded in 96-well plates. 12 h later, E2 (10 μM), BZA (1 μM), BZA (1 μM) + E2 (5 μM) or BZA (1 μM) + E2 (10 μM) was added to the cell culture and then incubated with SARS-CoV-2 with an MOI of 0.1. The rate of SARS-CoV-2 infection was detected by immunofluorescence using an antibody against the nucleoprotein (NP) of SARS-CoV-2 at 24 h pos-tinfection. Data are normalized to the average of DMSO-treated wells and represent the mean±SEM for n = 3 independent experiments.

A


M13 fwd
5' LTR (truncated)
RRE
CMV promoter
Factor Xa site
PuroR
WPRE
3' LTR (ΔU3)
SV40 poly(A) signal
SV40 ori
ori
AmpR
AmpR promoter
Sheet.1
pCDH-CMV- Puro lentiviral vector
7384 bp
Human ACE2
2412bp
pCDH-CMV-hACE2
9771 bp
ACE2

B

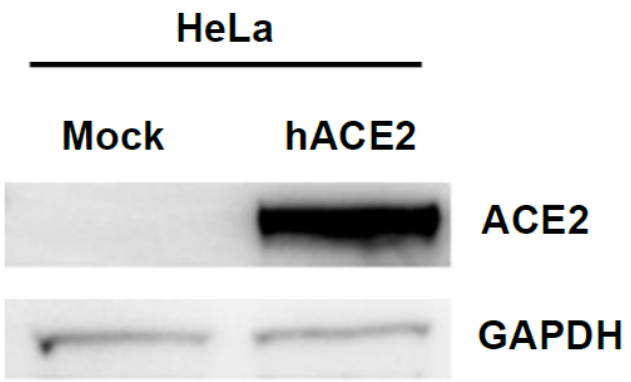

HeLa
Mock
hACE2
ACE2
GAPDH

Figure S2. The construct of a human cervical carcinoma cell line stably expressing human ACE2 (HeLa-ACE2). A, A schematic of the constructing lentivirion carrying the humanACE2 gene. B, The expression of human ACE2 was confirmed by western blotting using rabbit anti-human ACE2 monoclonal antibody.