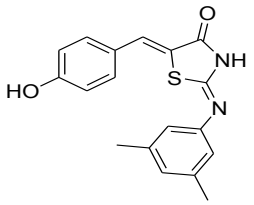
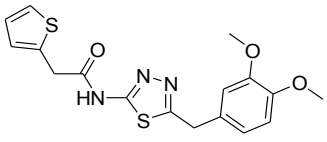
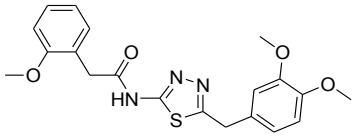
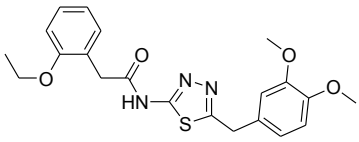
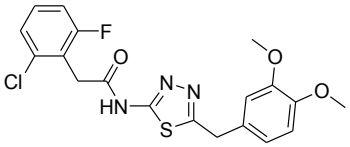
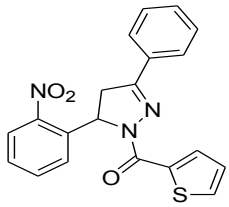
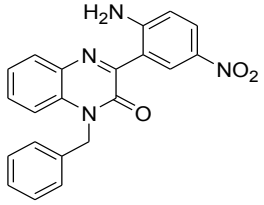
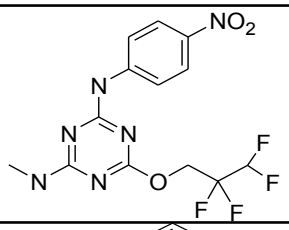
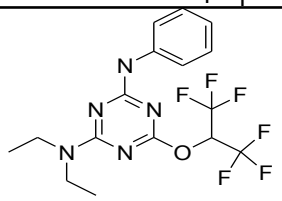
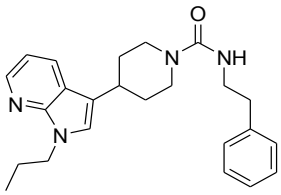
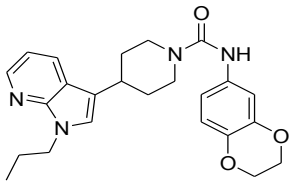
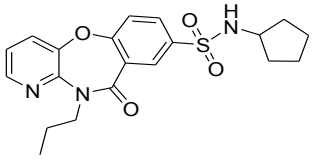
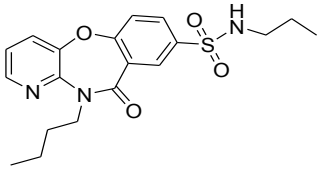
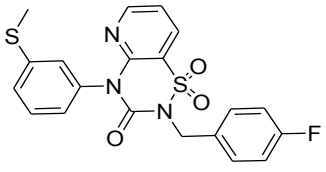
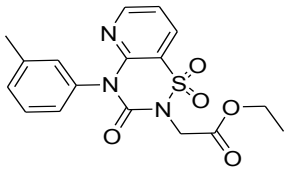
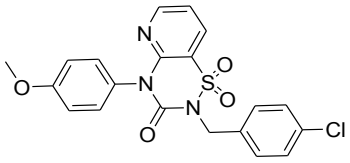
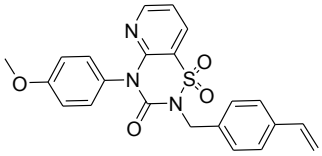
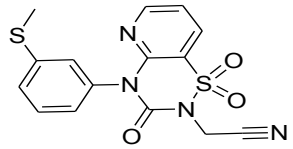
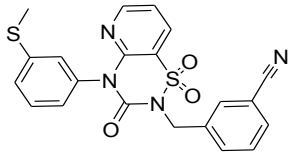
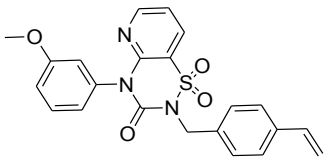
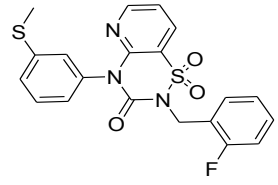
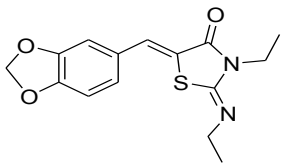
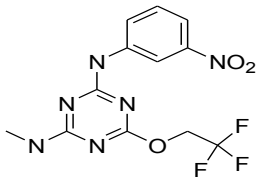
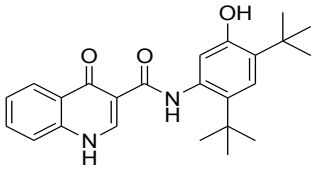
Supplementary Table 1. Chemical structures and data for CFTR activators.

Class	Compound	Structure	EC50 (nM)	Vmax	ΔPD (mV)
A	$CFTR_{act}$-A043		332	89%	-8.6 ± 0.49
B	$CFTR_{act}$-B018		685	86%	-2.5 ± 0.43
B	$CFTR_{act}$-B074		340	93%	-9.9 ± 0.99
B	$CFTR_{act}$-B089		377	91%	-3.4 ± 0.53
B	$CFTR_{act}$-B156		571	93%	-3.1 ± 1.1
E	$CFTR_{act}$-E053		385	94%	-4.1 ± 1.0
J	$CFTR_{act}$-J027		138	90%	-9.1 ± 0.39

K	$CFTR_{act}$-K032		70	97%	-10 ± 1.1
K	$CFTR_{act}$-K089		251	93%	-8.5 ± 0.81
O	$CFTR_{act}$-O018		752	93%	-5.7 ± 1.8
O	$CFTR_{act}$-O037		513	82%	
Q	$CFTR_{act}$-Q022		802	90%	
Q	$CFTR_{act}$-Q86		640	93%	
R	$CFTR_{act}$-R014		21	100%	-14 ± 0.42

R	$CFTR_{act}$-R053		399	98%	
R	$CFTR_{act}$-R088		379	95%	
R	$CFTR_{act}$-R101		174	94%	
R	$CFTR_{act}$-R103		126	100%	
R	$CFTR_{act}$-R142		31	100%	
R	$CFTR_{act}$-R176		36	100%	
R	$CFTR_{act}$-R185		35	94%	

	ref. 27		2000	65%	-2.5 ± 0.38
	ref. 27		400	49%	-7.4 ± 0.90
	VX-770		Variable	39%	-1.8 ± 0.29

Compounds identified in primary and analog screening were grouped into 8 chemical classes. EC_{50} and Vmax against human CFTR were determined from Isc measurement on FRT-CFTR cells. 100% CFTR activation was defined as that produced by 20 mM forskolin. Measurements of ocular surface PD were performed in wild-type CD1 mice. Summary of ΔPD produced by 1mM test compound (low Cl- perfusate containing amiloride; mean ± SE, n≥3 independent experiments per activator).