A)

B)

WT-CFTR   Q1291F-CFTR   Q1291H-CFTR

ATP

Mg^{2+}

Q1291

G551

ATP

Mg^{2+}

B

G551

F1291

H1291

ATP

B

Mg^{2+}

G551

Q1291 CA to Mg^{2+} (Å)
simulation 1
simulation 2
simulation 3
WT
simulation time (ns)

F1291 CA to Mg^{2+} (Å)
simulation 1
simulation 2
simulation 3
Q1291F
simulation time (ns)

H1291 CA to Mg^{2+} (Å)
simulation 1
simulation 2
simulation 3
Q1291H
B
simulation time (ns)

C)

System Free Energy ΔG

Resting Closed State

Barrier due to G551D Mutation

Barrier due to Q1291H Mutation

Potentiator Binding

Fully Open State

ATP Binding

Gating Coordinate λ