Electronic Supplementary Material (ESI) for Metallomics.

Supplementory Information

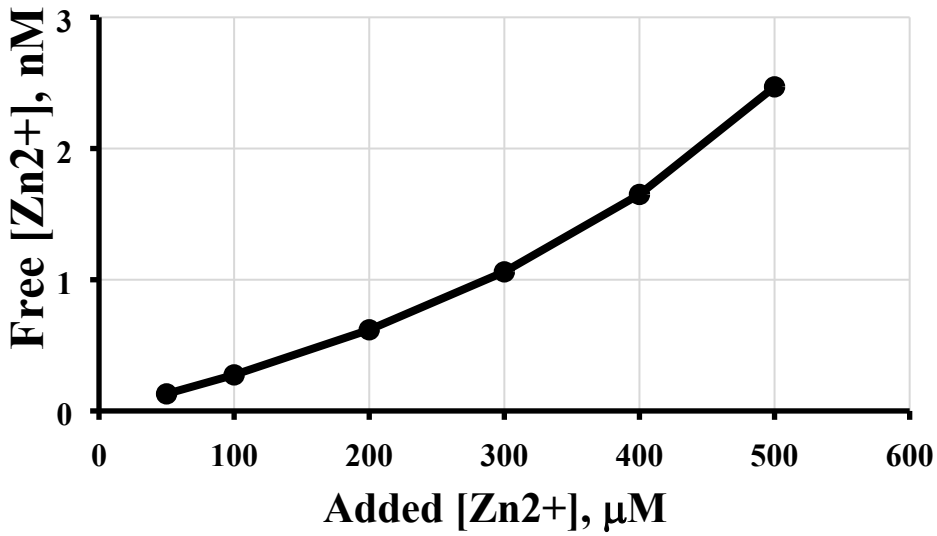

Fig.S1 The relationship between added Zn^{2+} concentrations and free Zn^{2+} concentrations in the EGTA-buffered bath solution. The calculations were based on an online program WEBMAXC STANDARD by taking pH7.3, an ionic strength of 0.16, ATP (1.5 mM), Mg^{2+}(3 mM), EGTA (1 mM) and 20 °C into account.[21]

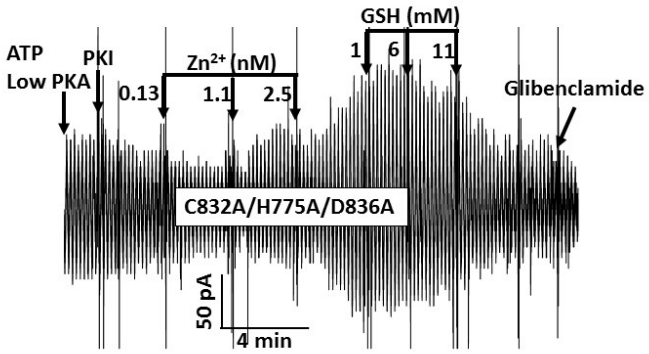

Fig. S2 Effects of internal Zn^{2+} and GSH on inside-out macroscopic currents of Fe^{3+}-insensitive C832A/H775A/D836A hCFTR across an excised *HEK*-293T patch. The control currents were evoked with 1.5 mM $MgATP^{2-}$ and 12 units/ml PKA (low PKA) and then blocked by PKI before the addition of Zn^{2+}. The final free [Zn^{2+}]=2.5 nM until GSH was used to reverse the Zn^{2+} effect. The voltage-dependent blocker glibenclamide (100 μM) was applied to evaluate the total currents of hCFTR. The arrows indicate the final concentrations.

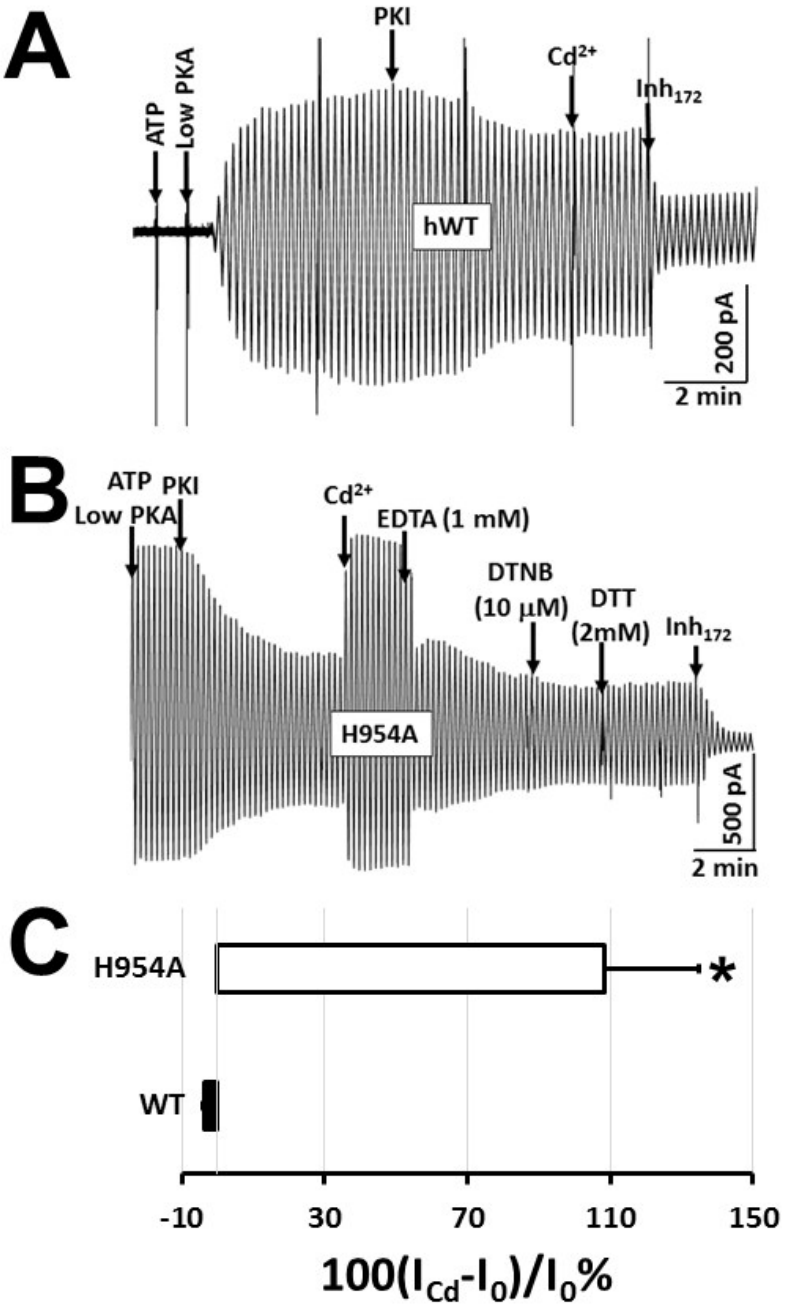

Fig. S3 Effects of internal Cd^{2+} on inside-out macroscopic currents of (A) Fe^{3+}-sensitive WT or (B) Fe^{3+}-insensitive H954A hCFTR across an excised *HEK*-293T patch. The control currents were activated with 1.5 mM $MgATP^{2-}$ and 24 units/ml PKA and then blocked by PKI before the addition of 500 μM Cd^{2+} to the EGTA-buffered bath solution. Because the stability constant *logK* of EGTA for Cd^{2+} is 16.5 at 25 °C,[20] the free $[Cd^{2+}]=2.3\times10^{-13}$ M until EDTA reversed the Cd^{2+}-induced potentiation.[21] 5,5'-dithiobis-(2-nitrobenzoic acid) (DTNB) was used to modify thiol groups of endogenous cysteines and DTT was employed to reverse the DTNB effect. Inh_{172} was applied to evaluate the total currents of CFTR. The arrows indicate the final concentrations. (C*)* Effects of 0.23 pM Cd^{2+} on the currents of WT and H954A hCFTR at the low level of PKA (n=3-4), *, $p<0.05$, versus WT hCFTR, from unpaired Student's *t* test).