



**Supplementary Fig. 1.** CHO-K1 cells express an endogenous proton-activated chloride channel.

**a**, Anion dependence of pH-induced response in a DMT1-expressing cell. Outward current usually appears later than the inward current. **b**, Currents generated in response to a voltage ramp. **c**, pH-induced outwardly rectifying current in a non-transfected CHO-K1 cell. A similar current was seen also in HEK293T and HEK-On cells, with properties similar to the cloned ClC-7 channel (Diewald et al. Activation by acidic pH of CLC-7 expressed in oocytes from *Xenopus laevis*. *Biochem Biophys Res Commun.* 2002;291(2):421-4.). This current exhibits the same anion dependence as in **a** (not shown). We attributed the outward currents shown in **a** and **b** to this endogenous Cl<sup>-</sup> current. Therefore, for our recordings on DMT1, SO<sub>4</sub><sup>2-</sup> was usually used to replace most of the Cl<sup>-</sup> ([Cl<sup>-</sup>]<sub>o</sub>=5 mM) for all low-pH bath solutions.