

**Supplementary Figure S1.**  $\text{Ca}^{2+}$  accumulation in inside-out plasma membrane vesicles in the presence (a) or absence (b) of protonophores.  $\text{Cd}^{2+}$  accumulation in inside-out plasma membrane vesicles in the presence (c) or absence (d) of protonophores. Ion accumulations in the vesicles correspond to ion effluxes from the cells. The electrochemical proton gradient across the plasma membrane is established and maintained by plasma membrane  $\text{H}^+$ -ATPases (Panel b). In this case,  $\text{Ca}^{2+}$  accumulation in the vesicles is mediated by ATP-dependent ( $\text{Ca}^{2+}$ -ATPases) and  $\text{H}^+$ -dependent (CAX?)  $\text{Ca}^{2+}$  transporters. Protonophores dissipate the  $\text{H}^+$  gradient, stalling the activity of  $\text{H}^+$ -dependent  $\text{Ca}^{2+}$  transporters (Panel a, crossed and dotted arrow line) allowing  $\text{Ca}^{2+}$  movement only through  $\text{Ca}^{2+}$ -ATPases. When cadmium is in the external medium, (Panels c and d),  $\text{Ca}^{2+}$  transporters are unable to move  $\text{Cd}^{2+}$  across the membrane, with or without protonophores.

