

Supplemental Figure 1. **Characterization of GODZ-mediated Ca^{2+} transport.** *A*, summary of Ca^{2+} -induced currents in oocytes expressing GODZ cRNA at a holding voltage-clamp of -60 mV. CaCl_2 was added at the concentrations indicated. *B*, GODZ mediates the transport of a number of other cations but not Mg^{2+} . Where indicated SrCl_2 , 0.2 mM; BaCl_2 , 0.2 mM; or MgCl_2 ; 0.2 mM was added in place of 0.2 mM CaCl_2 . Values are means \pm S.E.M. for 6 individual oocytes. * indicates significance, $p < 0.01$, from calcium alone. *C*, GODZ does not mediate Mg^{2+} transport. *Upper panel*, current-voltage (I-V) relationships obtained from linear voltage steps in the presence of 2.0 mM MgCl_2 in control and GODZ-expressing oocytes. Oocytes were clamped at a holding potential of -15 mV and then stepped from -150 to +25 mV in 25 mV increments for 2 s at each of the concentrations indicated. Values are means \pm S.E.M. of observations measured at the end of each voltage sweep. *Lower panel*, absence Mg^{2+} flux into GODZ-expressing oocytes. Mg^{2+} fluxes were determined with fluorescence using the Mg^{2+} -sensitive dye, mag-fura-2. Results are presented as the 340/385 excitation ratio, which reflects changes in ionized divalent cation concentration. Mag-fura-2 fluorescence ratios were measured in control and GODZ-expressing oocytes, at resting potentials, in solutions consisting of nominally magnesium-free solutions and then with 2.0 mM MgCl_2 with interruption and subsequently voltage-clamped at a holding potential of -70 mV, where indicated. *D*, GODZ-mediated $^{45}\text{Ca}^{2+}$ uptake is inhibited by Mn^{2+} , La^{3+} , Ba^{2+} , and Sr^{2+} but not Mg^{2+} . The indicated divalent cations were present at 0.2 mM as the chloride salt in the presence of 0.2 mM CaCl_2 . GODZ-mediated $^{45}\text{Ca}^{2+}$ uptake is not influenced by external Na^+ . Where indicated NaCl was replaced by choline chloride (*indicated by -Na⁺*). Values are means \pm S.E.M. for 6-25 oocytes. * indicates significance, $p < 0.01$, from calcium. *E*, H^+ dependence of GODZ-mediated Ca^{2+} uptake. $^{45}\text{Ca}^{2+}$ uptakes performed at the given external pH values. Values are means \pm S.E.M. for five individual experiments. * indicates significance, $p < 0.01$, from pH 7.5. *F*, GODZ-mediated Ca^{2+} currents were not inhibited by the calcium channel blocker, nifedipine. Nifedipine, 100 nM, (*indicated by +Nifed*) was added 30 min prior to voltage-clamp. Current measurements were determined as in Fig 1A and data are mean values of the largest observed currents \pm S.E.M for 3-5 oocytes. * indicates significance, $p < 0.01$, from calcium alone.

Fig.S1

