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Cover picture: Inositol 1,4,5-trisphosphate (IP₃)-mediated spiral Ca²⁺ waves in *Xenopus* oocytes overexpressing the ER Ca²⁺ ATPases SERCA2b (*left*) and SERCA2a (*right*). SERCA2b-expressing oocytes exhibit Ca²⁺ waves with lower Ca²⁺ wave frequencies and broader Ca²⁺ wave widths when compared with oocytes overexpressing SERCA2a. The functional differences between these alternatively spliced products of the SERCA2 gene can be attributed to differential modulation by calreticulin, a lectin chaperone residing in the ER. A lumenally facing N-glycosylated residue present in SERCA2b, but not in SERCA2a, is identified as the critical residue that is responsible for interaction of SERCA2b with calreticulin. The pseudocolored images of Ca²⁺ wave activity were obtained with a Bio-Rad MRC600 confocal microscope using the fluorescent Ca²⁺ indicator, Ca²⁺ Green (Molecular Probes), and were induced by injection of IP₃ (300 nM final). See related article in this issue by John et al., 963–973.

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