Perhaps the magnetic responses are unrelated to the specific linkage between ferritin and a channel protein. Instead one could imagine that a large number of ferritins exert a collective tug on the cell membrane, deforming it and opening some stress-activated channels in the process. The membrane stress required to gate mechanoreceptors has been measured directly by producing a laminar water flow over the surface of a cell: For TRPV4 channels it amounts to ~20 dyne/cm^2 (***Soffe et al., 2015***); for Piezo1 channels ~50 dyne/cm^2 (***Ranade et al., 2014***). Suppose now that the membrane is decorated with ferritins attached by some linkage, and instead of viscous flow tugging on the surface one applies a magnetic field gradient to pull on those ferritins with force F_1 (***Equation 10***). The density of ferritins one would need to generate the required membrane stress is

$$\frac{20\,\mathrm{dyn/cm^2}}{7\times10^{-23}\,\mathrm{N}} = 3\times10^{10}\,\frac{\mathrm{ferritins}}{\mu\mathrm{m}^2} \tag{16}$$

Unfortunately, even if the membrane is close-packed with ferritin spheres, one could fit at most 10^4 on a square micron. So this hypothetical mechanism produces membrane stress at least 6 log units too weak to open any channels.