

Diamagnetically trapped arrays of living cells above micromagnets

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Video S1:

The video S1 shows the diamagnetic trapping of 10 μm red polystyrene beads suspended in water with 6.5 mM of contrast agent (Gd-BOPTA) above an array of 50x50 μm -wide square micromagnets. A polystyrene bead is a good magnetic model for a Jurkat cell since it has a density ($\rho=1.050\text{ g/mL}$), susceptibility ($\chi=-8\ 10^{-6}$) and dimension ($r=5\ \mu\text{m}$) close to those of the cell. The red beads were imaged in bright field microscopy so as to see both the beads and the magnets. The images of this film were successively focused on the beads, trapped 7 μm above the magnets in agreement with simulations on Fig. 5C in the main text, and on the bottom of the micro-magnets.