

Video S1: Holographic video footage of *E. coli* cell motion in an aqueous medium. The video is generated using HeNe laser with wavelength of 632.8 nm and power of 50 mW. The video is captured under 60x magnification at the frame rate of 24 frames per second.

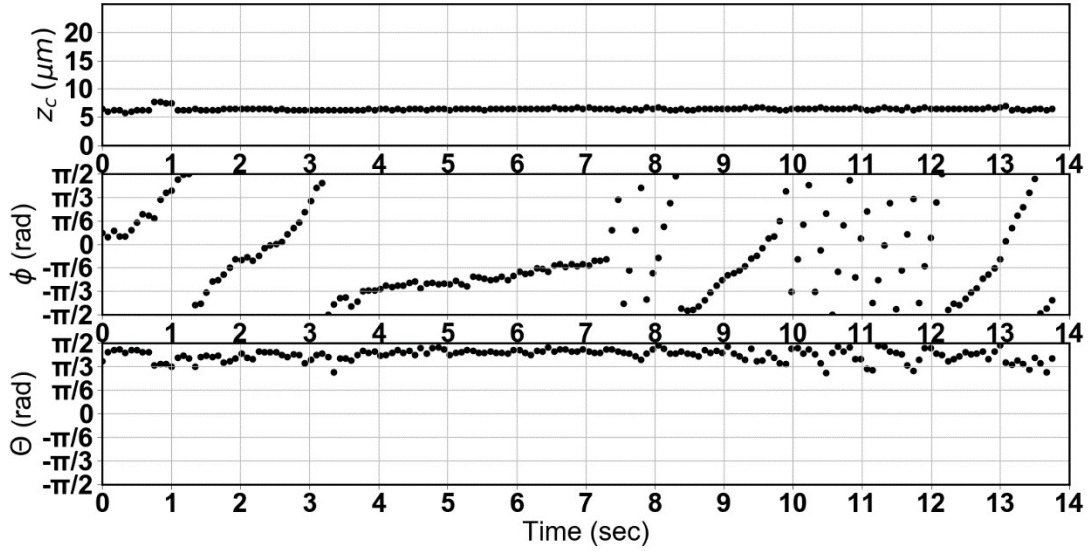


Figure S1: The z_c , θ and ϕ trajectory of cell number 2 with respect to the video time.

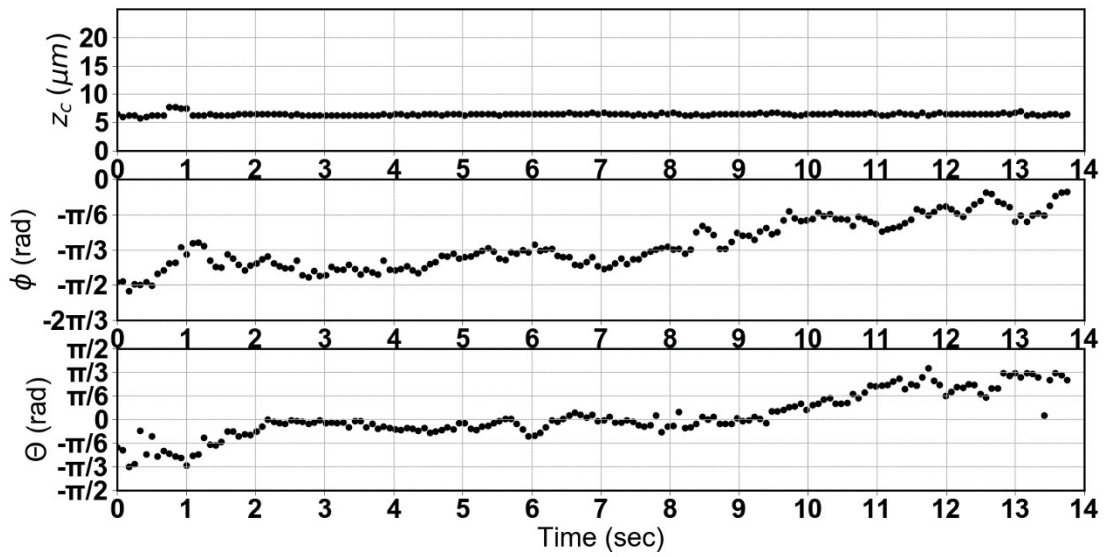


Figure S2: The z_c , θ and ϕ trajectory of cell number 3 with respect to the video time.

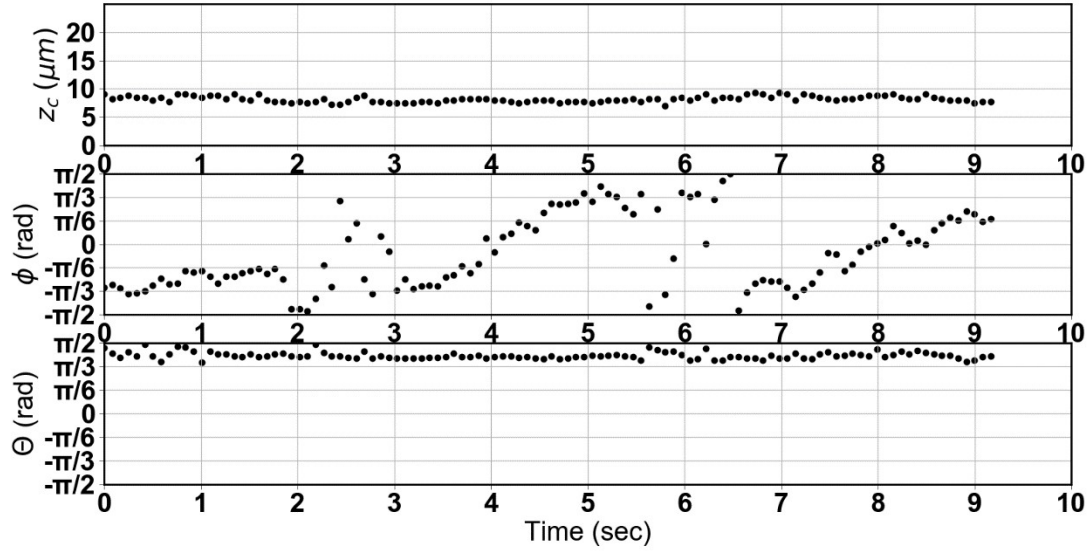


Figure S3: The z_c , θ and ϕ trajectory of cell number 4 with respect to the video time.