

Supplementary figure for:

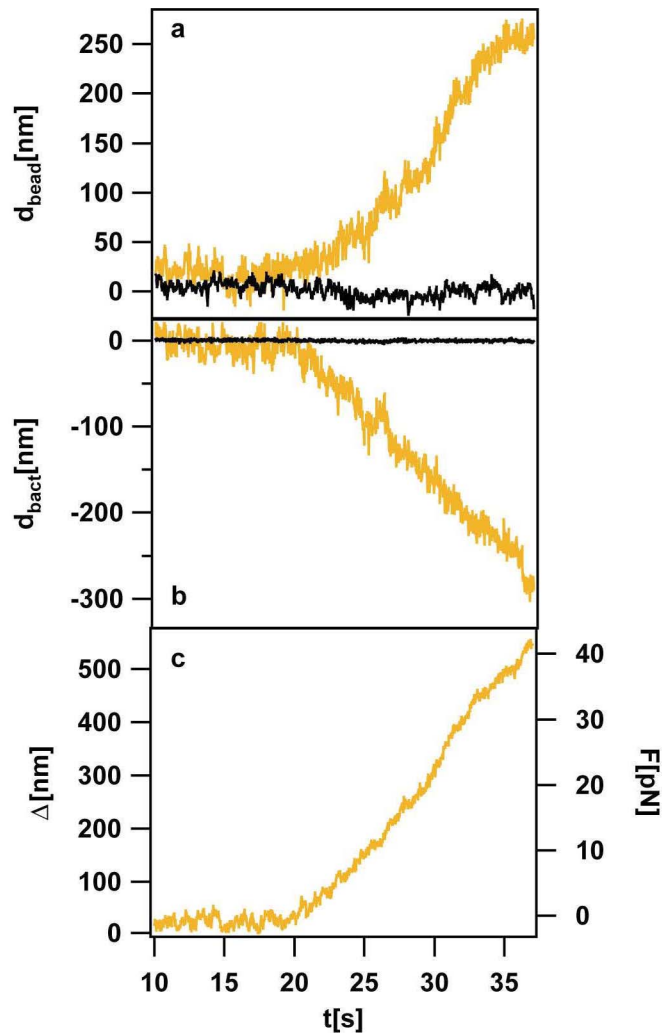
## DNA transport into *Bacillus subtilis* requires proton motive force to generate large molecular forces

Berenike Maier<sup>1,2</sup>, Ines Chen<sup>3</sup>, David Dubnau<sup>3</sup>, Michael P. Sheetz<sup>1</sup>

<sup>1</sup>Department of Biological Sciences, Columbia University, 1212 Amsterdam Ave., New York, NY 10027

<sup>2</sup>Present address: Institut für Experimentalphysik, Ludwig-Maximilians-Universität, Geschwister-Scholl Platz 1, 80539 München, Germany

<sup>3</sup>Public Health Research Institute, 225 Warren Street, Newark, NJ 07103



**Supplementary Figure 1.** Example for the distance between the bead in the optical trap and the bacterium attached to the glass coverslide during DNA uptake. **(a)** — Horizontal and — vertical deflection of the bead from the center of the laser trap as a function of time. **(b)** — Horizontal and — vertical deflection of the bacterium. **(c)** The change in distance between the bacterium and the bead (change in tether length) was obtained by  $\Delta = ((x_{\text{bead}} - x_{\text{bact}})^2 + (y_{\text{bead}} - y_{\text{bact}})^2)^{0.5}$ . The force acting on the bead was determined from the deflection data in a) with  $k_{\text{trap}} = 0.16 \text{ pN nm}^{-1}$ .