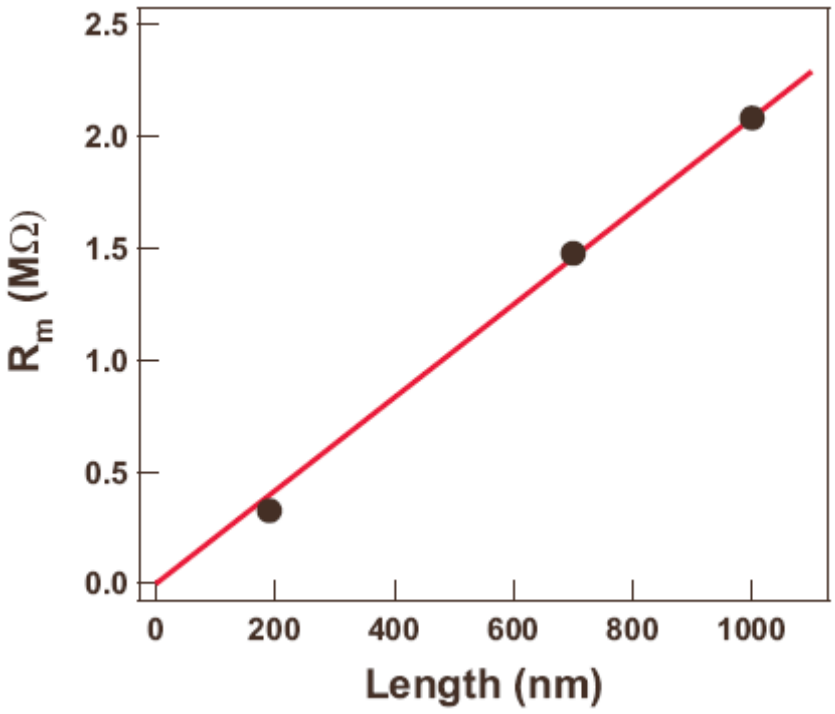

Figure S1. Length dependence of the nanowire inverse-transconductance. The inverse-transconductance, $R_m=1/g_m$, was calculated from the linear scale transconductance, g_m, at bias voltage of 10 mV and scales linearly with channel length from 190 nm to 1 μm. The linear increase is consistent with the charge control model at low bias, $\mu = \frac{g_m}{V_{ds}} \cdot \frac{L^2}{C}$, since the gate capacitances per unit length, C/L = 800 aF/μm, is a constant in these devices (i.e., the devices have the same dielectric thickness and top gate geometry). The average mobility determined from these data is 640 cm^2/V-s.