**Fig. S1.** Spatial form $A/\lambda$ and wave efficiency $\eta$ do not vary with compaction (red circles, closely packed; blue triangles, loosely packed) or undulation number ($N=5$ animals, $n=51$ trials).
Fig. S2. Wave efficiency $\eta$ increases with spatial form $A/\lambda$ and is in accord with predictions from resistive force theory (RFT). Filled markers (triangles for loosely packed, circles for closely packed) are data taken in animals implanted with EMG wires ($N=5$ animals and $n=37$ runs) where different colors indicate different individuals. Open markers are data from Maladen et al., 2009. Brown points are data from animals tested without wires ($N=15$ runs, $n=4$ animals) and black points are data from the same animals tested with wires glued to their back ($N=11$, $n=2$ animals) in a loosely packed medium. The blue curve is a prediction of $\eta$ versus $A/\lambda$ from RFT with drag comparable to the sandfish without wires. The green and red curves are the RFT prediction with 20% and 40% increased drag on the head, respectively.