



Fig. S1. Activity and CO₂ release in an unacclimated *Rhodnius* over time at a low (25 °C) and high (35 °C) temperature. Overall activity patterns did not differ across the two temperatures. (A) Periods of activity detected by an infrared activity detector result in a disruption of the discontinuous gas exchange pattern and an elevated rate of CO₂ release at both temperatures. One disruption of the pattern was not associated with activity. (B) Periods of intense movement observed visually from video recordings (e.g. escape behavior, indicated with asterisks) resulted in a disruption of the discontinuous pattern in one case, but the pattern was maintained during another. Other periods of minimal movement (grooming, adjusting body position) had similar effects in that they only occasionally disrupted the discontinuous pattern. After the 24 h acclimation period utilized in our study, lengthy periods of discontinuous gas exchange were observed with no apparent effects of locomotion.