Thermal biology of the fossorial rodent Ctenomys fulvus from the Atacama desert, northern Chile

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The Andean tuco-tuco, Ctenomys fulvus (Rodentia: Ctenomyidae) inhabits one of the most arid regions of the world, the Salar de Atacama, Northeast of Antofagasta, Chile (23°17'06''S, 68°05'43''W; 2.240 m.a.s.l). We found that a stable microclimate in burrows, a low evaporative water loss (EWL), and a diet of roots (59% water content) are the main factors that permit the survival of this fossorial species in harsh desert conditions. Large circadian variation in T(a) was observed above ground. Daily ?T(a) (T(a) max - T(a) min) = 37.9 ± 0.2°C in summer and in winter. In contrast, circadian variation of T(a) inside the burrows was only 5.8 ± 0.5°C in the same seasons. Relative humidity (RH) was 1.9-3.1% during the day, increasing to maximum values of 27% at night and early morning. Inside the burrows RH was higher and quite stable, ranging between 53.1 and 65%, independent of the time of day and season. EWL, measured between 10 and 25°C, was low (1.26 mg/g h), and a moderate increase of 13-