Water balance in two South American *Phyllotis* desert rodents, *P. xanthopygus rupestris* and *P. darwini darwini*

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Abstract

We compared the efficiency of water regulation of two rodent species—Phyllotis xanthopygus *rupestris* and *Phyllotis darwini*, inhabiting contrasting habitats in South America. We evaluated water requirements *ad libitum*, resistance index to water deprivation (water deprivation test), evaporative water loss, and renal morphology. Water consumption of *P. x. rupestris* was significantly higher than in *P. darwini*, *P. x. rupestris* and *P. darwini* subjected to water deprivation, showed a negative relationship between body mass loss and water deprivation time. Minimal evaporative water loss values were not significantly different between species. Although *P. x. rupestris* and *P. darwini*were not able to maintain their body mass under water deprivation tests, they have different water economies. This suggests that due to their distinct inhabitats with contrasting water availability, they have different adaptative strategies in their respective environments.