Supplementary material for:

**Morphology captures diet and locomotor types in rodents**

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**Data definition**

The following files can be downloaded from:

http://doi.org/10.5281/zenodo.201147

**Ecological data (DietLocomotion.csv).** Diet type and locomotion categories and the data sources used to assign them, following the numbered reference lists below (Reference Lists 3 and 4).

**Body size data (bodySizes.csv).** Body size data for all 208 species with data sources, following the numbered reference list below (Reference List 2).

**Specimens examined (measurementsFinal.csv).** Original measurements taken by LDVA. The *mus* field identifies the collections that house the specimens. QM = Queensland Museum (Brisbane, Australia), AusMus = Australian Museum (Sydney, Australia), MZFC = ‘‘Alfonso L. Herrera’’ Zoology Museum (UNAM, Mexico City, Mexico). See main text for measurement methods and definitions.

**Species means (meansMasses.csv).** Mean values for all 14 measurements with their data source. Values derived from specimens measured by LDVA are identified with in the *dataProv* field as “LD”. Other values were collated from the sources in Reference List 1 and updated from amended tables and correspondence with the lead author (identified in the table as “AM”). Sources for body mass data are detailed separately. See main text for measurement methods and definitions.

All other tables are produced as intermediate or final outputs of the analysis scripts provided. The R scripts are named in the order in which they can be used. “phylo.fda.v0.2noPlotting” needs to be sourced for several of the analyses.
**Table S1.** Taxonomic context of species examined in this study.

| Family           | Total species | Species examined |
|------------------|---------------|------------------|
| MURIDAE          | 719           | 54               |
| CRICETIDAE       | 710           | 84               |
| SCIURIDAE        | 279           | 7                |
| ECHIMYIDAE       | 90            | 0                |
| HETEROMYIDAE     | 62            | 14               |
| NESOMYIDAE       | 61            | 15               |
| CTENOMYIDAE      | 60            | 0                |
| DIPODIDAE        | 50            | 28               |
| GEOMYIDAE        | 39            | 1                |
| GLIRIDAE         | 29            | 3                |
| CAPROMYIDAE      | 27            | 0                |
| SPALACIDAE       | 21            | 0                |
| CAVIIDAE         | 19            | 0                |
| ERETHIZONTIDAE   | 18            | 1                |
| BATHYERGIDAE     | 15            | 0                |
| DASYPROCTIDAE    | 13            | 0                |
| HYSTRICIDAE      | 13            | 0                |
| OCTODONTIDAE     | 13            | 0                |
| ABROCOMIDAE      | 10            | 0                |
| CALOMYSCIDAE     | 8             | 0                |
| ANOMALURIDAE     | 7             | 0                |
| CHINCHILLIDAE    | 7             | 0                |
| CTENODACTYLIDAE  | 5             | 0                |
| CASTORIDAE       | 3             | 1                |
| CUNICULIDAE      | 2             | 0                |
| PEDETIDAE        | 2             | 0                |
| PLATACANTHOMYIDAE| 2             | 0                |
| THRYONOMYIDAE    | 2             | 0                |
| APLODONTIIDAE    | 1             | 0                |
| DIATOMYIDAE      | 1             | 0                |
| DINOMYIDAE       | 1             | 0                |
| MYOCASTORIDAE    | 1             | 0                |
| PETROMURIDAE     | 1             | 0                |
Table S2. Parameter estimates from PGLS size correction (mean and 95% CI for 100 phylogenetic trees)

| Character | intercept | intercept 95% CI | slope | slope 95% CI |
|-----------|-----------|-----------------|-------|--------------|
| LR        | 1.129     | 0.007           | 0.252 | 0.001        |
| ZB        | 1.916     | 0.007           | 0.25  | 0.001        |
| BIT       | -0.564    | 0.004           | 0.307 | 0.001        |
| LMT       | 0.475     | 0.007           | 0.299 | 0.001        |
| HMC       | 0.432     | 0.006           | 0.3   | 0.001        |
| T         | 3.495     | 0.01            | 0.292 | 0.002        |
| E         | 1.985     | 0.01            | 0.188 | 0.002        |
| Vib       | 2.699     | 0.016           | 0.237 | 0.003        |
| HF        | 2.232     | 0.011           | 0.29  | 0.002        |
| FF        | 1.315     | 0.009           | 0.291 | 0.002        |
| UM        | -0.701    | 0.011           | 0.323 | 0.002        |
**Figure S1.** Distribution of diet types and locomotor modes on a randomly-selected phylogenetic tree (from the set of 100) from the mammalian phylogeny of Faurby and Svenning (2015). Abbreviations for diet types - C: carnivore, G: generalized herbivore, I: insectivore, S: specialized herbivore. Abbreviations for locomotion modes - T: terrestrial, Sa: semiaquatic A: arboreal, Sf: semifossorial, F: fossorial, R: ricochetal, G: gliding.
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