|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | λML |
|  |  | **Model terms** | **AIC** | **R2 / R2adj** |
| Phylogenetic correction(PGLS) | Model 1:All hibernators(82 species) | zhiber+zlogmass+zhiber:zlogmass+C\_W+bats+arboreality |  -50.51046 | 0.2653/ 0.2065 |
| zhiber+zlogmass+C\_W+bats+arboreality | -52.49145 | 0.2637/0.2152 |
| zhiber+zlogmass+bats+arboreality | -52.01818 | 0.2242/0.1839 |
| Model 2:Hibernators without bats(55 species) | zhiber+zlogmass+zhiber:zlogmass+C\_W+arboreality | -42.84827 | 0.4048/0.3441 |
| zhiber+zlogmass+C\_W+arboreality | -44.84158 | 0.4038/0.3561 |
| zhiber+zlogmass+arboreality | -44.92069 | 0.3744/0.3376 |
| Model 3:Deep hibernators without bats (46 species) | zhiber+zlogmass+zhiber:zlogmass+C\_W+arborealityzhiber+zlogmass+C\_W+arborealityzhiber+zlogmass+arborealityzhiber+zlogmass+ | -37.18019-39.17963-38.92486-40.34324 | 0.2105/0.11180.2104/0.13340.1718/0.11260.1592/0.1201 |
| Model 4:Small hibernators (<1,5 kg) without bats (44 species) | zhiber+zlogmass+zhiber:zlogmass+C\_W+arboreality | -48.57117 | 0.3206/0.2312 |
| zhiber+zlogmass+C\_W+arboreality | -49.04655 | 0.3038/0.2324 |
| zhiber+zlogmass+arboreality | -48.3023  | 0.2662/0.2112 |
| No phylogenetic correction(linear model) | Model 5:Bats only (27 species) | zhiber+zlogmass+zhiber:zlogmass | -7.308115 | 0.193/0.0877 |
| zhiber+zlogmass | -8.912492 | 0.1811/0.1128 |

Table S3: Model selection for the effects of hibernation season duration (zhiber), body mass (zlogmass), the interaction zhiber x zlogmass, bats and arboreality lifestyle and the effect of captivity (C\_W; captive vs. wild) on longevity in hibernating mammals.