**Table S1: List of complete mitochondrial sequences acquired from GenBank database used in the current comparative analysis.**

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| --- | --- | --- | --- | --- |
| **Sl. No.** | **Family** | **Species Name** | **NCBI Accession No.** | **References** |
| 1 | Geoemydidae | *Pangshura tentoria* | MH795989 | This Study |
| 2 | Geoemydidae | *Batagur trivittata* | KX817298 | Feng et al. 2016 |
| 3 | Geoemydidae | *Cuora amboinensis* | FJ763736 | Nie and Jing 2016 |
| 4 | Geoemydidae | *Cuora aurocapitata* | AY874540 | Nie et al. 2016 |
| 5 | Geoemydidae | *Cuora bourreti* | JN020145 | Nie and Wu 2016 |
| 6 | Geoemydidae | *Cuora flavomarginata* | EU708434 | Nie and Zhang 2016 |
| 7 | Geoemydidae | *Cuora galbinifrons* | EU809939 | Nie and Zhang 2016 |
| 8 | Geoemydidae | *Cuora mouhotii* | DQ659152 | Zhang et al. 2008 |
| 9 | Geoemydidae | *Cuora pani* | GQ889364 | Nie et al. 2016 |
| 10 | Geoemydidae | *Cuora picturata* | JF712890 | Nie and Wu 2016 |
| 11 | Geoemydidae | *Cuora trifasciata* | KF574821 | Li et al. 2015 |
| 12 | Geoemydidae | *Cyclemys atripons* | EF067858 | Nie and Zhang 2016 |
| 13 | Geoemydidae | *Cyclemys dentata* | JX455823 | Huang et al. 2015 |
| 14 | Geoemydidae | *Cyclemys oldhami* | JN582335 | Nie and Lu 2016 |
| 15 | Geoemydidae | *Cyclemys pulchristriata* | JQ266015 | Nie and Lu 2014 |
| 16 | Geoemydidae | *Cyclemys tcheponensis* | JQ277464 | Nie and Lu 2013 |
| 17 | Geoemydidae | *Heosemys annandalii* | JF742646 | Nie and Dai 2016 |
| 18 | Geoemydidae | *Heosemys depressa*  | JQ266017 | Nie and Dai 2014 |
| 19 | Geoemydidae | *Heosemys grandis* | KX816868 | Li et al. 2016 |
| 20 | Geoemydidae | *Mauremys annamensis* | HM131942 | Nie and Dai 2016 |
| 21 | Geoemydidae | *Mauremys caspica* | KC692465 | Nie and Zhou 2015 |
| 22 | Geoemydidae | *Mauremys japonica* | GU938833 | Nie and Jiang 2012 |
| 23 | Geoemydidae | *Mauremys leprosa* | KP100055 | Nie and Zhou 2016 |
| 24 | Geoemydidae | *Mauremys megalocephala* | HM132059 | Nie and Huang 2016 |
| 25 | Geoemydidae | *Mauremys mutica* | DQ453753 | Nie and Song 2016 |
| 26 | Geoemydidae | *Mauremys nigricans* | KT951839 | Zhao et al. 2016 |
| 27 | Geoemydidae | *Mauremys reevesii* | AY676201 | Nie et al. 2016 |
| 28 | Geoemydidae | *Mauremys rivulata* | KP100054 | Nie and Zhou 2016 |
| 29 | Geoemydidae | *Mauremys sinensis* | FJ871126 | Nie and Jiang 2016 |
| 30 | Geoemydidae | *Notochelys platynota* | HQ853256 | Nie and Dai 2016 |
| 31 | Geoemydidae | *Sacalia bealei* | GU183364 | Nie and Jiang 2016 |
| 32 | Geoemydidae | *Sacalia quadriocellata* | EF088646 | Nie and Song 2016 |
| 33 | Testudinidae | *Indotestudo elongata* | DQ080043 | Parham et al. 2005 |
| 34 | Emydidae | *Chrysemys picta bellii* | KF874616 | Jiang et al. 2016 |
| 35 | Platysternidae | *Platysternon megacephalum* | DQ256377 | Parham et al. 2006 |
| 36 | Cheloniidae | *Caretta caretta* | FR694649 | Drosopoulou et al. 2012 |
| 37 | Trionychidae | *Dogania subplana* | AF366350 | Farajallah et al. 2016 |
| 38 | Chelidae | *Chelus fimbriata* | HQ172156 | Wang et al. 2012 |