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| **Supplementary Table 2:** Accession numbers of the mammalian analysed sequences \* tagged low-quality, a genomes without annotation, (ᴪ) pseudogenised. |  |
| **#** |  | **Species** | **Order** |  **Accession number** |  |
| 1 | HSA | *Homo sapiens* | Primate-Hominoidae  | NM\_000798.4 |  |
| 2 | GGO | *Gorilla gorilla gorilla* | Primate-Hominoidae | XM\_004038436.2 |  |
| 3 | NLE | *Nomascus leucogenys* | Primate-Hominoidae | XM\_012499761.1 |  |
| 4 | PPA | *Pan paniscus* | Primate-Hominoidae | XM\_003826782.2 |  |
| 5 | PTR | *Pan troglodytes* | Primate-Hominoidae | XM\_528711.6 |  |
| 6 | PAB | *Pongo abelii* | Primate-Hominoidae | XM\_002814584.3 |  |
| 7 | MLE | *Mandrillus leucophaeus* | Primate-Cercopithecoidea | XM\_011987817.1 |  |
| 8 | MNE | *Macaca nemestrina* | Primate-Cercopithecoidea | XM\_011714502.2 |  |
| 9 | MMU | *Macaca mulatta* | Primate-Cercopithecoidea | XM\_001097117.3 |  |
| 10 | MFA | *Macaca fascicularis* | Primate-Cercopithecoidea | XM\_005554477.2 |  |
| 11 | RRO | *Rhinopithecus roxellana* | Primate-Cercopithecoidea | XM\_010357591.1 |  |
| 12 | RBI | *Rhinopithecus bieti* | Primate-Cercopithecoidea | XM\_017871844.1 |  |
| 13 | CAT | *Cercocebus atys* | Primate-Cercopithecoidea | XM\_012045471.1 |  |
| 14 | CSA | *Chlorocebus sabaeus* | Primate-Cercopithecoidea | XM\_008017903.1 |  |
| 15 | CAN | *Colobus angolensis palliatus* | Primate-Cercopithecoidea | XM\_011935438.1 |  |
| 16 | PAN | *Papio anubis* | Primate-Cercopithecoidea | XM\_003898477.2 |  |
| 17 | PTE | *Piliocolobus tephrosceles* | Primate-Cercopithecoidea | XM\_023206702.2 |  |
| 18 | THG | *Theropithecus gelada* | Primate-Cercopithecoidea | XM\_025385369.1 |  |
| 19 | ANA | *Aotus nancymaae* | Primate-Platyrrhini | XM\_012466993.2 |  |
| 20 | SBO | *Saimiri boliviensis boliviensis* | Primate-Platyrrhini | XM\_003934678.2 |  |
| 21 | CCA | *Cebus capucinus imitator* | Primate-Platyrrhini | XM\_017539167.1 |  |
| 22 | CJA | *Callithrix jacchus* | Primate-Platyrrhini | XM\_002745992.3 |  |
| 23 | OGA | *Otolemur garnettii* | Primate-Strepsirrhini | XM\_003800208.3 |  |
| 24 | MMU | *Microcebus murinus*  | Primate-Strepsirrhini | Gene not annotated. Unknown coding status. |  |
| 25 | CSY |  *Carlito syrichta* | Primate-Haplorrhini | XM\_008061093.2 |  |
| 26 | TCH | *Tupaia chinensis* | Scandentia | XM\_014581979.1 |  |
| 27 | GVA | *Galeopterus variegatus* | Dermoptera | XM\_008571486.1 |  |
| 28 | NGA | *Nannospalax galili* | Rodentia-Myomorpha | XM\_008833111.1 |  |
| 29 | CGR | *Cricetulus griseus* | Rodentia-Myomorpha | XM\_003496643.2 |  |
| 30 | PMA | *Peromyscus maniculatus bairdii* | Rodentia-Myomorpha | XM\_006985622.2 |  |
| 31 | MOC | *Microtus ochrogaster* | Rodentia-Myomorpha | XM\_005365966.2 |  |
| 32 | MMU | *Mus musculus* | Rodentia-Myomorpha | NM\_013503.3 |  |
| 33 | MPA | *Mus paharis* | Rodentia-Myomorpha | XM\_021211215.1 |  |
| 34 | MCA | *Mus caroli* | Rodentia-Myomorpha | XM\_021163858.1 |  |
| 35 | RNO | *Rattus norvegicus* | Rodentia-Myomorpha | NM\_012768.1 |  |
| 36 | MAU | *Mesocricetus auratus* | Rodentia-Myomorpha | XM\_005068824.3 |  |
| 37 | MEU | *Meriones unguiculatus* | Rodentia-Myomorpha | XM\_021649643.1 |  |
| 38 | JJA |  Jaculus jaculus | Rodentia-Myomorpha | Gene not annotated. Unknown coding status. |  |
| 39 | ITR | *Ictidomys tridecemlineatus* | Rodentia-Sciuromorpha | XM\_005319077.2 |  |
| 40 | MMA | *Marmota marmota marmota* | Rodentia-Sciuromorpha | XM\_015481961.1 |  |
| 41 | MFL |  *Marmota flaviventris* | Rodentia-Sciuromorpha | XM\_027939494.1 |  |
| 42 | UPA |  *Urocitellus parryii* | Rodentia-Sciuromorpha | XM\_026403213.1 |  |
| 43 | DOR | *Dipodomys ordii* | Rodentia-Castorimorpha | XM\_013023905.1 |  |
| 44 | CCAN | *Castor canadensis* | Rodentia-Castorimorpha |  XM\_020178366.1 |  |
| 45 | CPO | *Cavia porcellus* | Rodentia-Hystricomorpha | XM\_003464368.2 |  |
| 46 | HGL | *Heterocephalus glaber* | Rodentia-Hystricomorpha | XM\_004847511.2 |  |
| 47 | ODE | *Octodon degus* | Rodentia-Hystricomorpha | XM\_004624567.1 |  |
| 48 | FDA | *Fukomys damarensis* | Rodentia-Hystricomorpha | XM\_010641931.1 |  |
| 49 | CLA | *Chinchilla lanigera* | Rodentia-Hystricomorpha | XM\_005408842.1 |  |
| 50 | OCU | *Oryctolagus cuniculus* | Lagomorpha | XM\_008274145.2 |  |
| 51 | OPR | *Ochotona princeps\** | Lagomorpha | XM\_012931415.1 |  |
| 52 | SSC | *Sus scrofa* | Cetartiodactyla -Suina | XM\_013989284.2 |  |
| 53 | VPA | *Vicugna pacos* | Cetartiodactyla-Camelidae | XM\_006216382.2 |  |
| 54 | CFE | *Camelus ferus* | Cetartiodactyla-Camelidae | XM\_006189051.2 |  |
| 55 | CBA | *Camelus bactrianus* | Cetartiodactyla-Camelidae | XM\_010973032.1 |  |
| 56 | CDR | *Camelus dromedarius* | Cetartiodactyla-Camelidae | XM\_010975357.1 |  |
| 57 | BMU | *Bos mutus* | Cetartiodactyla-Bovinae | XM\_005893192.1 |  |
| 58 | BBI | *Bison bison bison\** | Cetartiodactyla-Bovinae | XM\_010847779.1 |  |
| 59 | BTA | *Bos taurus* | Cetartiodactyla-Bovinae |  NM\_001206629.3 |  |
| 60 | BBU | *Bubalus bubalis* | Cetartiodactyla-Bovinae | XM\_006043819.2 |  |
| 61 | OAR | *Ovis aries\** | Cetartiodactyla-Caprinae | XM\_015096298.1 |  |
| 62 | CHI | *Capra hircus* | Cetartiodactyla-Caprinae | XM\_005681898.2 |  |
| 63 | OVI | *Odocoileus virginianus texanus* | Cetartiodactyla-Cervidae | XM\_020908699.1 |  |
| 64 | PHO | *Pantholops hodgsonii* | Cetartiodactyla-Antilopinae | XM\_005962148.1 |  |
| 65 | OOR | *Orcinus orca\** | Cetartiodactyla-Cetacea | XM\_004286766.2 (ᴪ) |  |
| 66 | TTR | *Tursiops truncatus* | Cetartiodactyla-Cetacea | XM\_019928014.1QUXD02011962.1 – Genomic Contig used in the manual prediction. (ᴪ) |  |
| 67 | LVE | *Lipotes vexillifer* | Cetartiodactyla-Cetacea | Gene not annotated, manual prediction. (ᴪ) |  |
| 68 | SCHa | *Sousa chinensis* | Cetartiodactyla-Cetacea | QWLN01021157.1 (ᴪ) |  |
| 69 | LOB | *Lagenorhynchus obliquidens\** | Cetartiodactyla-Cetacea | XM\_027102813.1 (ᴪ) |  |
| 70 | DLE | *Delphinapterus leucas\** | Cetartiodactyla-Cetacea | XM\_022567155.1 (ᴪ) |  |
| 71 | NAS | *Neophocaena asiaeorientalis asiaeorientalis\** | Cetartiodactyla-Cetacea | XM\_024741783.1 (ᴪ) |  |
| 72 | PMA | *Physeter macrocephalus\** | Cetartiodactyla-Cetacea | XM\_024119537.1 (ᴪ) |  |
| 73 | BAC | *Balaenoptera acutorostrata scammoni* | Cetartiodactyla-Cetacea | Gene not annotated, manual prediction. Unknown coding status. |  |
| 74 | BBOa | *Balaenoptera bonaerensis* | Cetartiodactyla-Cetacea | DF554641.1 (ᴪ) |  |
| 75 | EROa | *Eschrichtius robustus* | Cetartiodactyla-Cetacea | NIPP01013563.1 (ᴪ) |  |
| 76 | BMYa | *Balaena mysticetus* | Cetartiodactyla-Cetacea | gnl|BL\_ORD\_ID|3417 (ᴪ) (downloaded from bowhead-whale.org) |  |
| 77 | HAMa | *Hippopotamus amphibius* | Cetartiodactyla-Hippopotamidae | NKPW01000739.1 |  |
| 78 | PCI | *Phascolarctos cinereus\** | Diprotodontia-[Phascolarctidae](https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?mode=Undef&id=38624&lvl=3&keep=1&srchmode=1&unlock) | XM\_020992084.1 |  |
| 79 | VOU | *Vombatus ursinus* | Diprotodontia-Vombatidae | XM\_027836427.1 |  |
| 80 | CSI | *Ceratotherium simum simum* | Perissodactyla-Rhinoceratidae | XM\_004432348.2 |  |
| 81 | ECA | *Equus caballus* | Perissodactyla-Equidea | XM\_005614781.3 |  |
| 82 | EPR | *Equus przewalskii* | Perissodactyla-Equidea | XM\_008543661.1 |  |
| 83 | EAS | *Equus asinus* | Perissodactyla-Equidea | XM\_014864319.1 |  |
| 84 | NSC | *Neomonachus* *schauinslandi* | Carnivora-Caniformia | XM\_021677594.1 |  |
| 85 | ORO | *Odobenus rosmarus divergens* | Carnivora-Caniformia | XM\_004415889.2 |  |
| 86 | LWE | *Leptonychotes weddellii* | Carnivora-Caniformia | XM\_006747176.1 |  |
| 87 | AME | *Ailuropoda melanoleuca* | Carnivora-Caniformia | XM\_011229965.2 |  |
| 88 | UMA | *Ursus maritimus* | Carnivora-Caniformia | XM\_008685829.1 |  |
| 89 | UAR | *Ursus arctos horribilis* | Carnivora-Caniformia | XM\_026514401.1 |  |
| 90 | MFU | *Mustela putorius furo* | Carnivora-Caniformia | XM\_004770551.1 |  |
| 91 | CFA | *Canis lupus familiaris* | Carnivora-Caniformia | XM\_005618578.1 |  |
| 92 | CLU | *Canis lupus dingo* | Carnivora-Caniformia | XM\_025438279.1 |  |
| 93 | VUV | *Vulpes vulpes* | Carnivora-Caniformia | XM\_026002149.1 |  |
| 94 | CAU | *Callorhinus ursinus* | Carnivora-Caniformia | XM\_025887601.1 |  |
| 95 | ELU | *Enhydra lutris kenyoni* | Carnivora-Caniformia | XM\_022506347.1 |  |
| 96 | PALT | *Panthera tigris altaica* | Carnivora- Feliformia | XM\_015534698.1 |  |
| 97 | FCA | *Felis catus* | Carnivora- Feliformia | XM\_003985519.5 |  |
| 98 | AJU | *Acinonyx jubatus* | Carnivora- Feliformia | XM\_015072964.2 |  |
| 99 | PPAR | *Panthera pardus* | Carnivora- Feliformia | XM\_019453704.1 |  |
| 100 | PCO | *Puma concolor* | Carnivora- Feliformia | XM\_025922066.1 |  |
| 101 | ZCA | *Zalophus californianus* | Carnivora-[Otariidae](https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?mode=Undef&id=9702&lvl=3&keep=1&srchmode=1&unlock) | XM\_027599538.1 |  |
| 102 | PVA | *Pteropus vampyrus* | Chiroptera | XM\_011374674.1 |  |
| 103 | EFU | *Eptesicus fuscus* | Chiroptera | XM\_008150879.1 |  |
| 104 | PALE | *Pteropus alecto* | Chiroptera | XM\_015594847.1 |  |
| 105 | MDA | *Myotis davidii\** | Chiroptera | XM\_006779351.2 |  |
| 106 | MBR | *Myotis brandtii* | Chiroptera | XM\_005866153.2 |  |
| 107 | MNA | *Miniopterus natalensis* | Chiroptera | XM\_016203704.1 |  |
| 108 | MLU | *Myotis lucifugus* | Chiroptera | XM\_006106071.3 |  |
| 109 | DRO | *Desmodus rotundus* | Chiroptera | XM\_024573892.1 |  |
| 110 | RSI | *Rhinolophus sinicus* | Chiroptera | XM\_019716569.1 |  |
| 111 | HAR | *Hipposideros armiger* | Chiroptera | XM\_019661154.1 |  |
| 112 | LAF | *Loxodonta africana* | Afrotheria-Proboscidea | XM\_003411269.3 |  |
| 113 | TMA | *Trichechus manatus latirostris* | Afrotheria-Sirenia | XM\_004385912.3 |  |
| 114 | ETE | *Echinops telfairi* | Afrotheria-Tenrecidae | XM\_004715080.1 |  |
| 115 | OAF | *Orycteropus afer afer* | Afrotheria-Tubulidentata | XM\_007948779.1 |  |
| 116 | CAS | *Chrysochloris asiatica* | Afrotheria-Chrysochloridae | Gene not annotated, manual prediction. (ᴪ)  |  |
| 117 | EED | *Elephantulus edwardii* | Afrotheria-Macroscelidea | Gene not annotated, manual prediction. |  |
| 118 | MJA | *Manis javanica* | Pholidota | XM\_017640904.1 |  |
| 119 | SAR | *Sorex araneus* | Eulipotyphla | XM\_004617490.1 |  |
| 120 | EEU | *Erinaceus europaeus* | Eulipotyphla | Gene not annotated. Unknown coding status. |  |
| 121 | CCR | Condylura cristata  | Eulipotyphla | Gene not annotated. Unknown coding status. |  |
| 122 | DNO | *Dasypus novemcinctus* | Cingulata | XM\_004468905.2 |  |
| 123 | SHA | *Sarcophilus harrisii* | Dasyuromorphia | XM\_012552332.2 |  |
| 124 | MDO | *Monodelphis domestica* | Didelphidae | XM\_001371240.2 |  |