**Supplementary files**

**Supplementary Table S1.** Sample details. Islands and localities where parasite infections were detected (l, locality numbers correspond to those shown in Fig. 1; coordinates in WGS84 decimal degrees), with the host species, number (n) of sampled and infected hosts, and 18S rRNA haplotypes (h) identified for each parasite group.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Island** | **l** | **Coordinates** | **Host** | |  | **Haemogregarines** | |  | **Sarcocystids** | |  | **Eimeriids** | |
| **Taxa** | **n** |  | **n** | **h** |  | **n** | **h** |  | **n** | **h** |
| Socotra | 1 | 12.68; 53.49 | *Trachylepis socotrana* | 2 |  | 2 | 6 |  |  |  |  |  |  |
| 2 | 12.66; 53.47 | *Hakaria simonyi* | 3 |  |  |  |  | 2 | 4 |  |  |  |
| 3 | 12.65; 53.44 | *Chamaeleo monachus* | 1 |  | 1 | 2 |  |  |  |  |  |  |
| 4 | 12.61; 53.45 | *Hemidactylus pumilio* | 1 |  | 1 | 5 |  |  |  |  |  |  |
| 5 | 12.54; 53.37 | *Haemodracon trachyrhinus* | 2 |  |  |  |  |  |  |  | 1 | 1 |
| 6 | 12.54; 53.33 | *Pristurus insignis* | 1 |  | 1 | 2 |  |  |  |  |  |  |
| 7 | 12.51; 53.44 | *Chamaeleo monachus* | 1 |  | 1 | 2 |  |  |  |  |  |  |
| 8 | 12.51; 53.44 | *Pristurus sokotranus* | 1 |  | 1 | 2 |  |  |  |  |  |  |
| 9 | 12.60; 53.78 | *Mesalina balfouri* | 1 |  | 1 | 2 |  |  |  |  |  |  |
| *Trachylepis socotrana* | 1 |  | 1 | 1 |  |  |  |  |  |  |
| 10 | 12.54; 53.71 | *Trachylepis socotrana* | 1 |  | 1 | 1 |  |  |  |  |  |  |
| 11 | 12.50; 53.65 | *Pristurus sokotranus* | 2 |  | 1 | 1 |  |  |  |  |  |  |
| 12 | 12.39; 53.63 | *Trachylepis socotrana* | 1 |  | 1 | 1 |  |  |  |  |  |  |
| 13 | 12.34; 53.63 | *Pristurus obsti* | 2 |  | 1 | 2 |  |  |  |  |  |  |
| 14 | 12.66; 54.04 | *Trachylepis socotrana* | 1 |  | 1 | 2 |  |  |  |  |  |  |
| 15 | 12.61; 53.98 | *Trachylepis socotrana* | 1 |  | 1 | 1 |  |  |  |  |  |  |
|  | 16 | 12.58; 54.02 | *Hakaria simonyi* | 2 |  |  |  |  | 2 | 1 |  |  |  |
| 17 | 12.52; 53.95 | *Ditypophis vivax* | 1 |  | 1 | 4 |  |  |  |  |  |  |
| 18 | 12.51; 54.02 | *Hakaria simonyi* | 1 |  | 1 | 1 |  |  |  |  |  |  |
| 19 | 12.50; 54.02 | *Hemidactylus pumilio* | 2 |  | 1 | 5 |  |  |  |  |  |  |
| 20 | 12.49; 53.99 | *Trachylepis socotrana* | 1 |  | 1 | 1 |  |  |  |  |  |  |
|  | 21 | 12.49; 54.01 | *Haemodracon riebeckii* | 1 |  |  |  |  | 1 | 3 |  |  |  |
|  | 22 | 12.48; 54.02 | *Hakaria simonyi* | 1 |  |  |  |  | 1 | 1 |  |  |  |
|  | 23 | 12.47; 54.01 | *Trachylepis socotrana* | 1 |  |  |  |  | 1 | 1 |  |  |  |
| 24 | 12.37; 53.93 | *Pristurus insignis* | 1 |  | 1 | 2 |  |  |  |  |  |  |
| 25 | 12.36; 53.95 | *Haemodracon trachyrhinus* | 8 |  | 1 | 2 |  |  |  |  |  |  |
|  | 26 | 12.69; 54.13 | *Trachylepis socotrana* | 1 |  |  |  |  | 1 | 1 |  |  |  |
| 27 | 12.66; 54.14 | *Trachylepis socotrana* | 1 |  | 1 | 1 |  |  |  |  |  |  |
| 28 | 12.58; 54.31 | *Trachylepis socotrana* | 1 |  | 1 | 1, 2 |  |  |  |  |  |  |
| 29 | 12.57; 54.39 | *Trachylepis socotrana* | 1 |  | 1 | 1 |  |  |  |  |  |  |
| 30 | 12.54; 54.38 | *Haemodracon trachyrhinus* | 1 |  | 1 | 1 |  |  |  |  |  |  |
| Abd al Kuri | 31 | 12.23; 52.07 | *Hemidactylus forbesi* | 1 |  | 1 | 3 |  |  |  |  |  |  |
| 32 | 12.19; 52.24 | *Mesalina kuri* | 2 |  | 1 | 1, 3 |  |  |  |  |  |  |
| *Trachylepis cristinae* | 1 |  | 1 | 1, 7 |  |  |  |  |  |  |
| 33 | 12.20; 52.27 | *Mesalina kuri* | 4 |  | 1 | 2 |  |  |  |  |  |  |
|  | 34 | 12.19; 52.32 | *Hemidactylus oxyrhinus* | 2 |  |  |  |  | 1 | 2 |  |  |  |
| *Mesalina kuri* | 2 |  | 1 | 2 |  |  |  |  |  |  |
| Samha | 35 | 12.17; 53.01 | *Trachylepis socotrana* | 1 |  | 1 | 1 |  |  |  |  |  |  |
| 36 | 12.17; 53;02 | *Haemodracon riebeckii* | 3 |  | 2 | 1 |  |  |  |  |  |  |
| Darsa | 37 | 12.12; 53.27 | *Mesalina balfouri* | 3 |  | 1 | 1 |  |  |  |  | 2 | 2 |
| *Trachylepis socotrana* | 1 |  | 1 | 1 |  |  |  |  |  |  |

**Supplementary Table S2.** Haplotype correspondence between the 18S rRNA, 28 rRNA and COI genes for the nine samples infected by sarcocystid parasites. Each sample is identified by the specimen code, and information on host species and locality number (l, the same as in Supplementary Table 1 and Fig. 1) is provided.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sarcocystid haplotype** | | | **Specimen code** | **Host species** | **Island** | **l** |
| **18S** | **28S** | **COI** |
| 1 | - | - | S5640 | *Hakaria simonyi* | Socotra | 16 |
| 1 | 1 | - | S5642 | *Hakaria simonyi* | Socotra | 16 |
| 1 | 1 | A | CN1434 | *Hakaria simonyi* | Socotra | 22 |
| 1 | 1 | A | S5613 | *Trachylepis socotrana* | Socotra | 23 |
| 1 | 1 | - | CN1002 | *Trachylepis socotrana* | Socotra | 26 |
| 2 | 2 | B | ES2624 | *Hemidactylus oxyrhinus* | Abd Al Kuri | 34 |
| 3 | 3 | B | S3394 | *Haemodracon riebeckii* | Socotra | 21 |
| 4 | 4 | - | S5049 | *Hakaria simonyi* | Socotra | 2 |
| 4 | 4 | - | S5289 | *Hakaria simonyi* | Socotra | 2 |

**Supplementary Table S3.** GenBank codes and additional information on the genetic sequences used for the phylogenetic analyses of haemogregarine parasites and their hosts.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **GenBank** | **Parasite** | **Host** | | | | **Country** |
| **code** | **species** | **species** | **family** | **order** | **class** | **of origin** |
| XXXXX | *Haemogregarina* sp. | *Chamaeleo monachus* | Chamaeleonidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Chamaeleo monachus* | Chamaeleonidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Ditypophis vivax* | Lamprophiidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Haemodracon riebeckii* | Phyllodactylidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Haemodracon riebeckii* | Phyllodactylidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Haemodracon trachyrhinus* | Phyllodactylidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Haemodracon trachyrhinus* | Phyllodactylidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Hakaria simonyi* | Scincidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Hemidactylus forbesi* | Gekkonidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Hemidactylus pumilio* | Gekkonidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Hemidactylus pumilio* | Gekkonidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Mesalina balfouri* | Gekkonidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Mesalina balfouri* | Lacertidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Mesalina kuri* | Lacertidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Mesalina kuri* | Lacertidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Mesalina kuri* | Lacertidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Pristurus insignis* | Sphaerodactylidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Pristurus insignis* | Sphaerodactylidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Pristurus obsti* | Sphaerodactylidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Pristurus sokotranus* | Sphaerodactylidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Pristurus sokotranus* | Sphaerodactylidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Trachylepis cristinae* | Scincidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Trachylepis socotrana* | Scincidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Trachylepis socotrana* | Scincidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Trachylepis socotrana* | Scincidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Trachylepis socotrana* | Scincidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Trachylepis socotrana* | Scincidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Trachylepis socotrana* | Scincidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Trachylepis socotrana* | Scincidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Trachylepis socotrana* | Scincidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Trachylepis socotrana* | Scincidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Trachylepis socotrana* | Scincidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Trachylepis socotrana* | Scincidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Trachylepis socotrana* | Scincidae | Squamata | Reptilia | Yemen |
| XXXXX | *Haemogregarina* sp. | *Trachylepis socotrana* | Scincidae | Squamata | Reptilia | Yemen |
| AB181504 | *Hepatozoon* sp. | *Bandicota indica* | Muridae | Rodentia | Mammalia | Thailand |
| AF176837 | *Hepatozoon catesbianae* | bullfrog | - | Anura | Amphibia | - |
| AF297085 | *Hepatozoon* sp. | *Boiga irregularis* | Colubridae | Squamata | Reptilia | Australia |
| AY252103 | *Hepatozoon* sp. | *Boiga irregularis* | Colubridae | Squamata | Reptilia | Australia |
| AY252108 | *Hepatozoon* sp. | *Varanus scalaris* | Varanidae | Squamata | Reptilia | Australia |
| AY252111 | *Hepatozoon* sp. | *Stegonotus cucullatus* | Colubridae | Squamata | Reptilia | Australia |
| AY461375 | *Hepatozoon canis* | *Dusicyon thous* | Canidae | Carnivora | Mammalia | Brazil |
| AY600625 | *Hepatozoon* sp. | *Clethrionomys glareolus* | Cricetidae | Rodentia | Mammalia | Spain |
| AY628681 | *Hepatozoon felis* | *Felis catus* | Felidae | Carnivora | Mammalia | Spain |
| AY731062 | *Hepatozoon canis* | *Vulpes vulpes* | Canidae | Carnivora | Mammalia | Spain |
| DQ111754 | *Hepatozoon canis* | *Canis lupus* | Canidae | Carnivora | Mammalia | Sudan |
| EF157822 | *Hepatozoon ayorgbor* | *Python regius* | Pythonidae | Squamata | Reptilia | Ghana |
| EF222259 | *Hepatozoon* sp. | *Sciurus vulgaris* | Sciuridae | Rodentia | Mammalia | Spain |
| EU430231 | *Hepatozoon* sp. | *Amblyomma fimbriatum* | Ixodidae | Ixodida | Arachnida | Australia |
| FJ719813 | *Hepatozoon* sp. | *Dromiciops gliroides* | Microbiotheriidae | Microbiotheria | Mammalia | Chile |
| FJ719814 | *Hepatozoon* sp. | *Dromiciops gliroides* | Microbiotheriidae | Microbiotheria | Mammalia | Chile |
| FJ719816 | *Hepatozoon* sp. | *Abrothrix sanborni* | Cricetidae | Rodentia | Mammalia | Chile |
| FJ719817 | *Hepatozoon* sp. | *Abrothrix olivaceus* | Cricetidae | Rodentia | Mammalia | Chile |
| HQ224958 | *Dactylosoma ranarum* | *Rana esculenta* | Ranidae | Anura | Amphibia | France |
| HQ224959 | *Haemogregarina balli* | *Chelydra serpentina* | Chelydridae | Testudines | Reptilia | Canada |
| HQ224960 | *Hepatozoon* sp. | *Rana esculenta* | Ranidae | Anura | Amphibia | France |
| HQ292771 | *Hepatozoon* sp. | *Mabuya wrightii* | Scincidae | Squamata | Reptilia | Seychelles |
| HQ292774 | *Hepatozoon* sp. | *Lycognathophis seychellensis* | Colubridae | Squamata | Reptilia | Seychelles |
| HQ734787 | *Hepatozoon* sp. | *Tarentola mauritanica* | Phyllodactylidae | Squamata | Reptilia | Algeria |
| HQ734790 | *Hepatozoon* sp. | *Ptyodactylus oudrii* | Phyllodactylidae | Squamata | Reptilia | Algeria |
| HQ734791 | *Hepatozoon* sp. | *Scelarcis perspicillata* | Lacertidae | Squamata | Reptilia | Morocco |
| HQ734792 | *Hepatozoon* sp. | *Podarcis vaucheri* | Lacertidae | Squamata | Reptilia | Morocco |
| HQ734793 | *Hepatozoon* sp. | *Podarcis vaucheri* | Lacertidae | Squamata | Reptilia | Morocco |
| HQ734795 | *Hepatozoon* sp. | *Podarcis vaucheri* | Lacertidae | Squamata | Reptilia | Morocco |
| HQ734796 | *Hepatozoon* sp. | *Eumeces algeriensis* | Scincidae | Squamata | Reptilia | Morocco |
| HQ734798 | *Hepatozoon* sp. | *Atlantolacerta andreanskyi* | Lacertidae | Squamata | Reptilia | Morocco |
| HQ734799 | *Hepatozoon* sp. | *Timon pater* | Lacertidae | Squamata | Reptilia | Morocco |
| HQ734806 | *Hepatozoon* sp. | *Tarentola mauritanica* | Phyllodactylidae | Squamata | Reptilia | Morocco |
| HQ734807 | *Hepatozoon* sp. | *Timon pater* | Lacertidae | Squamata | Reptilia | Morocco |
| HQ829446 | *Hepatozoon felis* | *Panthera tigris* | Felidae | Carnivora | Mammalia | India |
| JQ080303 | *Hepatozoon* sp. | *Aedes taeniorhynchus* | Culicidae | Diptera | Insecta | Ecuador |
| JQ670908 | *Hepatozoon* sp. | *Aponomma varanense* | Ixodidae | Ixodida | Arachnida | Thailand |
| JX244267 | *Hepatozoon* sp. | *Hemorrhois hippocrepis* | Colubridae | Squamata | Reptilia | Spain |
| JX244268 | *Hepatozoon* sp. | *Hemorrhois hippocrepis* | Colubridae | Squamata | Reptilia | Morocco |
| JX531910 | *Hepatozoon* sp. | *Podarcis hispanica* | Lacertidae | Squamata | Reptilia | Spain |
| JX531917 | *Hepatozoon* sp. | *Podarcis hispanica* | Lacertidae | Squamata | Reptilia | Spain |
| JX531920 | *Hepatozoon* sp. | *Podarcis lilfordi* | Lacertidae | Squamata | Reptilia | Spain |
| JX531941 | *Hepatozoon* sp. | *Algyroides marchi* | Lacertidae | Squamata | Reptilia | Spain |
| KC342524 | *Hepatozoon* sp. | *Crotalus durissus* | Viperidae | Squamata | Reptilia | Brazil |
| KC342525 | *Hepatozoon* sp. | *Crotalus durissus* | Viperidae | Squamata | Reptilia | Brazil |
| KC342526 | *Hepatozoon* sp. | *Crotalus durissus* | Viperidae | Squamata | Reptilia | Brazil |
| KC342527 | *Hepatozoon* sp. | *Crotalus durissus* | Viperidae | Squamata | Reptilia | Brazil |
| KC512766 | *Hemolivia* sp. | *Hyalomma aegyptium* | Ixodidae | Ixodida | Arachnida | Algeria |
| KC696564 | *Hepatozoon* sp. | *Psammophis schokari* | Lamprophiidae | Squamata | Reptilia | Morocco |
| KC696566 | *Hepatozoon* sp. | *Psammophis aegyptius* | Lamprophiidae | Squamata | Reptilia | Niger |
| KF022102 | *Hepatozoon peircei* | *Oceanodroma melania* | Hydrobatidae | Procellariiformes | Aves | Mexico |
| KF246565 | *Hepatozoon seychellensis* | *Grandisonia alternans* | Indotyphlidae | Gymnophiona | Amphibia | Seychelles |
| KF246566 | *Hepatozoon seychellensis* | *Grandisonia alternans* | Indotyphlidae | Gymnophiona | Amphibia | Seychelles |
| KF257926 | *Haemogregarina stepanowi* | *Mauremys caspica* | Geoemydidae | Testudines | Reptilia | Iran |
| KF318170 | *Hepatozoon* sp. | *Dermacentor auratus* | Ixodidae | Ixodida | Arachnida | Thailand |
| KF733812 | *Hepatozoon* sp. | *Pelophylax perezi* | Ranidae | Anura | Amphibia | Portugal |
| KF939620 | *Hepatozoon* sp. | *Elaphe carinata* | Colubridae | Squamata | Reptilia | China |
| KF939621 | *Hepatozoon* sp. | *Elaphe carinata* | Colubridae | Squamata | Reptilia | China |
| KF992698 | *Hemolivia mauritanica* | *Testudo graeca* | Testudinidae | Testudines | Reptilia | Turkey |
| KF992701 | *Hemolivia mauritanica* | *Testudo graeca* | Testudinidae | Testudines | Reptilia | Syria |
| KF992702 | *Hemolivia mauritanica* | *Testudo graeca* | Testudinidae | Testudines | Reptilia | Syria |
| KF992703 | *Hemolivia mauritanica* | *Testudo graeca* | Testudinidae | Testudines | Reptilia | Syria |
| KF992704 | *Hemolivia mauritanica* | *Testudo graeca* | Testudinidae | Testudines | Reptilia | Syria |
| KF992705 | *Hemolivia mauritanica* | *Testudo graeca* | Testudinidae | Testudines | Reptilia | Syria |
| KF992706 | *Hemolivia mauritanica* | *Testudo graeca* | Testudinidae | Testudines | Reptilia | Syria |
| KF992707 | *Hemolivia mauritanica* | *Testudo graeca* | Testudinidae | Testudines | Reptilia | Syria |
| KF992708 | *Hemolivia mauritanica* | *Testudo graeca* | Testudinidae | Testudines | Reptilia | Syria |
| KF992709 | *Hemolivia mauritanica* | *Testudo graeca* | Testudinidae | Testudines | Reptilia | Syria |
| KF992710 | *Hemolivia mauritanica* | *Testudo marginata* | Testudinidae | Testudines | Reptilia | Greece |
| KF992711 | *Hemolivia mariae* | *Egernia stokesii* | Scincidae | Squamata | Reptilia | Australia |
| KF992712 | *Hemolivia mariae* | *Egernia stokesii* | Scincidae | Squamata | Reptilia | Australia |
| KF992713 | *Hemolivia* sp. | *Rhinoclemmys pulcherrima* | Geoemydidae | Testudines | Reptilia | Nicaragua |
| KF992714 | *Hemolivia* sp. | *Rhinoclemmys pulcherrima* | Geoemydidae | Testudines | Reptilia | Nicaragua |
| KJ189397 | *Hepatozoon* sp. | *Podarcis bocagei* | Lacertidae | Squamata | Reptilia | Portugal |
| KJ189404 | *Hepatozoon* sp. | *Podarcis hispanica* | Lacertidae | Squamata | Reptilia | Portugal |
| KJ189425 | *Hepatozoon* sp. | *Podarcis hispanica* | Lacertidae | Squamata | Reptilia | Portugal |
| KJ408511 | *Hepatozoon* sp. | *Cerastes cerastes* | Viperidae | Squamata | Reptilia | Mauritania |
| KJ408512 | *Hepatozoon* sp. | *Crotaphopeltis hotamboeia* | Colubridae | Squamata | Reptilia | Niger |
| KJ408521 | *Hepatozoon* sp. | *Macroprotodon cucullatus* | Colubridae | Squamata | Reptilia | Morocco |
| KJ408522 | *Hepatozoon* sp. | *Macroprotodon cucullatus* | Colubridae | Squamata | Reptilia | Morocco |
| KJ408523 | *Hepatozoon* sp. | *Macroprotodon cucullatus* | Colubridae | Squamata | Reptilia | Morocco |
| KJ408524 | *Hepatozoon* sp. | *Malpolon moilensis* | Lamprophiidae | Squamata | Reptilia | Morocco |
| KJ408529 | *Hepatozoon* sp. | *Spalerosophis dolichospilus* | Colubridae | Squamata | Reptilia | Morocco |
| KJ413113 | *Hepatozoon* sp. | *Caiman crocodilus* | Alligatoridae | Crocodylia | Reptilia | Brazil |
| KJ413132 | *Hepatozoon* sp. | *Caiman crocodilus* | Alligatoridae | Crocodylia | Reptilia | Brazil |
| KJ413133 | *Hepatozoon* sp. | *Caiman crocodilus* | Alligatoridae | Crocodylia | Reptilia | Brazil |
| KJ461939 | *Karyolysus* sp. | *Podarcis muralis* | Lacertidae | Squamata | Reptilia | Slovakia |
| KJ461940 | *Karyolysus* sp. | *Lacerta agilis* | Lacertidae | Squamata | Reptilia | Poland |
| KJ461941 | *Karyolysus* sp. | *Ixodes ricinus* | Ixodidae | Ixodida | Arachnida | Hungary |
| KJ461944 | *Karyolysus* sp. | *Ophionyssus* sp. | Macronyssidae | Mesostigmata | Arachnida | Hungary |
| KM234613 | *Hepatozoon* sp. | *Phyllopezus pollicaris* | Phyllodactylidae | Squamata | Reptilia | Brazil |
| KM234614 | *Hepatozoon* sp. | *Phyllopezus periosus* | Phyllodactylidae | Squamata | Reptilia | Brazil |
| KM234615 | *Hepatozoon* sp. | *Hemidactylus mabouia* | Gekkonidae | Squamata | Reptilia | Brazil |
| KM234616 | *Hepatozoon* sp. | *Hemidactylus mabouia* | Gekkonidae | Squamata | Reptilia | Brazil |
| KM234617 | *Hepatozoon* sp. | *Hemidactylus mabouia* | Gekkonidae | Squamata | Reptilia | Brazil |
| KM234618 | *Hepatozoon* sp. | *Hemidactylus mabouia* | Gekkonidae | Squamata | Reptilia | Brazil |
| KM234646 | *Hepatozoon domerguei* | *Madagascarophis colubrinus* | Lamprophiidae | Squamata | Reptilia | Madagascar |
| KM234647 | *Hepatozoon* sp. | *Madagascarophis colubrinus* | Lamprophiidae | Squamata | Reptilia | Madagascar |
| KM234650 | *Hepatozoon* sp. | *Oplurus* sp. | Iguanidae | Squamata | Reptilia | Madagascar |
| KP881349 | *Hemolivia stellata* | *Amblyomma rotundatum* | Ixodidae | Ixodida | Arachnida | Brazil |
| KR069082 | *Hemolivia parvula* | *Kinixys zombensis* | Testudinidae | Testudines | Reptilia | South Africa |
| KR069083 | *Hemolivia parvula* | *Kinixys zombensis* | Testudinidae | Testudines | Reptilia | South Africa |
| KR069084 | *Hepatozoon fitzsimonsi* | *Kinixys zombensis* | Testudinidae | Testudines | Reptilia | South Africa |
| KR262504 | *Hepatozoon* sp. | - | - | Ixodida | Arachnida | USA |
| KR653313 | *Hepatozoon* sp. | *Python sebae* | Pythonidae | Squamata | Reptilia | Mauritania |
| KU667308 | *Hepatozoon* sp. | *Akodon* sp. | Cricetidae | Rodentia | Mammalia | Brazil |
| KU667309 | *Hepatozoon* sp. | *Oligoryzomys flavescens* | Cricetidae | Rodentia | Mammalia | Brazil |
| KU680430 | *Hepatozoon* sp. | *Tarentola boehmei* | Phyllodactylidae | Squamata | Reptilia | Morocco |
| KU680434 | *Hepatozoon* sp. | *Tarentola ephippiata* | Phyllodactylidae | Squamata | Reptilia | Morocco |
| KU680435 | *Hepatozoon* sp. | *Tarentola mauritanica* | Phyllodactylidae | Squamata | Reptilia | Morocco |
| KU680438 | *Hepatozoon* sp. | *Tarentola mauritanica* | Phyllodactylidae | Squamata | Reptilia | Morocco |
| KU680441 | *Hepatozoon* sp. | *Tarentola mauritanica* | Phyllodactylidae | Squamata | Reptilia | Morocco |
| KU680442 | *Hepatozoon* sp. | *Tarentola fascicularis* | Phyllodactylidae | Squamata | Reptilia | Libya |
| KU680444 | *Hepatozoon* sp. | *Tarentola mauritanica* | Phyllodactylidae | Squamata | Reptilia | Morocco |
| KU680445 | *Hepatozoon* sp. | *Tarentola mauritanica* | Phyllodactylidae | Squamata | Reptilia | Morocco |
| KU680448 | *Hepatozoon* sp. | *Tarentola mauritanica* | Phyllodactylidae | Squamata | Reptilia | Algeria |
| KU680450 | *Hepatozoon* sp. | *Tarentola deserti* | Phyllodactylidae | Squamata | Reptilia | Morocco |
| KU680455 | *Hepatozoon* sp. | *Tarentola mauritanica* | Phyllodactylidae | Squamata | Reptilia | Morocco |
| KU680460 | *Hepatozoon* sp. | *Tarentola deserti* | Phyllodactylidae | Squamata | Reptilia | Morocco |
| KU680462 | *Hepatozoon* sp. | *Tarentola mauritanica* | Phyllodactylidae | Squamata | Reptilia | Morocco |
| KU680463 | *Hepatozoon* sp. | *Tarentola mauritanica* | Phyllodactylidae | Squamata | Reptilia | Morocco |
| KU680464 | *Hepatozoon* sp. | *Tarentola deserti* | Phyllodactylidae | Squamata | Reptilia | Morocco |
| KU955995 | *Hepatozoon* sp. | *Gerbilliscus leucogaster* | Muridae | Rodentia | Mammalia | South Africa |
| KU955996 | *Hepatozoon* sp. | *Genetta genetta* | Viverridae | Carnivora | Mammalia | South Africa |
| KX011040 | *Karyolysus paradoxa* | *Varanus albigularis* | Varanidae | Squamata | Reptilia | South Africa |
| KX347435 | *Hemolivia* sp. | *Amblyomma helvolum* | Ixodidae | Ixodida | Arachnida | Thailand |
| KX387860 | *Hepatozoon* sp. | *Phymaturus calcogaster* | Iguanidae | Squamata | Reptilia | Argentina |
| KX387861 | *Hepatozoon* sp. | *Phymaturus calcogaster* | Iguanidae | Squamata | Reptilia | Argentina |
| KX453590 | *Haemogregarina* sp. | *Hemidactylus hajarensis* | Gekkonidae | Squamata | Reptilia | Oman |
| KX453595 | *Haemogregarina* sp. | *Asaccus platyrhynchus* | Phyllodactylidae | Squamata | Reptilia | Oman |
| KX453599 | *Hepatozoon* sp. | *Hemidactylus lemurinus* | Gekkonidae | Squamata | Reptilia | Oman |
| KX453600 | *Hepatozoon* sp. | *Hemidactylus hajarensis* | Gekkonidae | Squamata | Reptilia | Oman |
| KX453613 | *Hepatozoon* sp. | *Pristurus rupestris* | Sphaerodactylidae | Squamata | Reptilia | Oman |
| KX453627 | *Hepatozoon* sp. | *Asaccus platyrhynchus* | Phyllodactylidae | Squamata | Reptilia | Oman |
| KX453637 | *Hepatozoon* sp. | *Cerastes gasperettii* | Viperidae | Squamata | Reptilia | Oman |
| KX453640 | *Hepatozoon* sp. | *Echis omanensis* | Viperidae | Squamata | Reptilia | Oman |
| KX453642 | *Hepatozoon* sp. | *Echis carinatus* | Viperidae | Squamata | Reptilia | Oman |
| KX453647 | *Haemogregarina* sp. | *Hemidactylus hajarensis* | Gekkonidae | Squamata | Reptilia | Oman |
| KX870925 | *Hepatozoon* sp. | unidentified tick | - | Ixodida | Arachnida | China |
| KX880079 | *Hepatozoon musa* | *Philodryas nattereri* | Dipsadidae | Squamata | Reptilia | Brazil |
| KX890094 | *Hepatozoon* sp. | unidentified tick | - | Ixodida | Arachnida | China |
| KY965141 | *Hepatozoon canis* | *Hydrochoerus hydrochaeris* | Hydrochaeridae | Rodentia | Mammalia | Brazil |
| LC062147 | *Hepatozoon* sp. | *Sus scrofa* | Suidae | Artiodactyla | Mammalia | Japan |
| LC169076 | *Hepatozoon* sp. | *Haemaphysalis longicornis* | Ixodidae | Ixodida | Arachnida | Japan |
| LC169077 | *Hepatozoon* sp. | *Haemaphysalis hystricis* | Ixodidae | Ixodida | Arachnida | Japan |
| LC331053 | *Hepatozoon canis* | *Canis lupus* | Canidae | Carnivora | Mammalia | Zambia |
| LC331055 | *Hepatozoon canis* | *Canis lupus* | Canidae | Carnivora | Mammalia | Zambia |
| MF322538 | *Hepatozoon caimani* | *Caiman crocodilus* | Alligatoridae | Crocodylia | Reptilia | Brazil |
| MF435047 | *Hepatozoon caimani* | *Caiman crocodilus* | Alligatoridae | Crocodylia | Reptilia | Brazil |
| MF435048 | *Hepatozoon caimani* | *Caiman crocodilus* | Alligatoridae | Crocodylia | Reptilia | Brazil |
| MF497763 | *Hepatozoon musa* | *Crotalus durissus* | Viperidae | Squamata | Reptilia | Brazil |
| MF497768 | *Hepatozoon* sp. | *Boa constrictor* | Boidae | Squamata | Reptilia | Brazil |
| MF497769 | *Hepatozoon cuestensis* | *Crotalus durissus* | Viperidae | Squamata | Reptilia | Brazil |
| MF497770 | *Hepatozoon cuestensis* | *Crotalus durissus* | Viperidae | Squamata | Reptilia | Brazil |
| MF541371 | *Hepatozoon* sp. | *Torgos tracheliotus* | Accipitridae | Accipitriformes | Aves | Israel |
| MF541372 | *Hepatozoon* sp. | *Neophron percnopterus* | Accipitridae | Accipitriformes | Aves | Israel |
| MF685400 | *Hepatozoon procyonis* | *Nasua nasua* | Procyonidae | Carnivora | Mammalia | Brazil |
| MG041594 | *Hepatozoon involucrum* | *Hyperolius marmoratus* | Hyperoliidae | Anura | Amphibia | South Africa |
| MG041599 | *Hepatozoon tenuis* | *Hyperolius marmoratus* | Hyperoliidae | Anura | Amphibia | South Africa |
| MG041603 | *Hepatozoon thori* | *Hyperolius marmoratus* | Hyperoliidae | Anura | Amphibia | South Africa |
| MG041604 | *Hepatozoon ixoxo* | *Sclerophrys pusilla* | Bufonidae | Anura | Amphibia | South Africa |
| MG041605 | *Hepatozoon theileri* | *Amietia delalandii* | Pyxicephalidae | Anura | Amphibia | South Africa |
| MG136688 | *Hepatozoon martis* | *Martes foina* | Mustelidae | Carnivora | Mammalia | Croatia |
| MG456821 | *Hepatozoon* sp. | *Ctenosaura pectinata* | Iguanidae | Squamata | Reptilia | Mexico |
| MG456822 | *Hepatozoon* sp. | *Sauromalus* sp. | Iguanidae | Squamata | Reptilia | Mexico |
| MG456823 | *Hepatozoon* sp. | *Heloderma horridum* | Helodermatidae | Squamata | Reptilia | Mexico |
| MG456824 | *Hepatozoon* sp. | *Ctenosaura pectinata* | Iguanidae | Squamata | Reptilia | Mexico |
| MG519502 | *Hepatozoon angeladaviesae* | *Philothamnus natalensis* | Colubridae | Squamata | Reptilia | South Africa |
| MG519504 | *Hepatozoon cecilhoarei* | *Philothamnus natalensis* | Colubridae | Squamata | Reptilia | South Africa |
| MG593275 | *Hepatozoon ewingi* | *Haemaphysalis bancrofti* | Ixodidae | Ixodida | Arachnida | Australia |
| MG758133 | *Hepatozoon banethi* | *Ixodes tasmani* | Ixodidae | Ixodida | Arachnida | Australia |
| MG758137 | *Hepatozoon banethi* | *Ixodes tasmani* | Ixodidae | Ixodida | Arachnida | Australia |
| MG787243 | *Karyolysus canariensis* | *Gallotia atlantica* | Lacertidae | Squamata | Reptilia | Spain |
| MG787244 | *Karyolysus galloti* | *Gallotia galloti* | Lacertidae | Squamata | Reptilia | Spain |
| MG787245 | *Karyolysus galloti* | *Gallotia galloti* | Lacertidae | Squamata | Reptilia | Spain |
| MG787246 | *Karyolysus stehlini* | *Gallotia stehlini* | Lacertidae | Squamata | Reptilia | Spain |
| MG787247 | *Karyolysus gomerensis* | *Gallotia caesaris* | Lacertidae | Squamata | Reptilia | Spain |
| MG787248 | *Karyolysus gomerensis* | *Gallotia caesaris* | Lacertidae | Squamata | Reptilia | Spain |
| MG787249 | *Karyolysus atlanticus* | *Gallotia atlantica* | Lacertidae | Squamata | Reptilia | Spain |
| MG787250 | *Karyolysus tinerfensis* | *Chalcides viridanus* | Scincidae | Squamata | Reptilia | Spain |
| MG787251 | *Karyolysus makariogeckonis* | *Tarentola delalandii* | Phyllodactylidae | Squamata | Reptilia | Spain |
| MG787253 | *Hepatozoon* sp. | *Psammodromus algirus* | Lacertidae | Squamata | Reptilia | Morocco |
| MG919977 | *Hepatozoon* sp. | *Canis mesomelas* | Canidae | Carnivora | Mammalia | South Africa |
| MH111419 | *Hepatozoon* sp. | *Bolomys lasiurus* | Cricetidae | Rodentia | Mammalia | Brazil |
| MH174343 | *Hepatozoon* sp. | *Ornithodoros atacamensis* | Argasidae | Ixodida | Arachnida | Chile |
| MH174344 | *Hepatozoon* sp. | *Ixodes* sp. | Ixodidae | Ixodida | Arachnida | Chile |
| MH174345 | *Hepatozoon* sp. | *Ixodes* sp. | Ixodidae | Ixodida | Arachnida | Chile |
| MH201396 | *Hepatozoon* sp. | *Teira dugesii* | Lacertidae | Squamata | Reptilia | Portugal |
| MH201398 | *Hepatozoon* sp. | *Teira dugesii* | Lacertidae | Squamata | Reptilia | Portugal |
| MH201399 | *Hepatozoon* sp. | *Teira dugesii* | Lacertidae | Squamata | Reptilia | Portugal |

**Supplementary Table S4.** GenBank codes and additional information on the genetic sequences used for the phylogenetic analyses of sarcocystid parasites and their hosts.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **GenBank** | **Parasite** | **Host** | | | | **Country** |
| **code** | **species** | **species** | **family** | **order** | **class** | **of origin** |
| XXXXX | *Sarcocystis* sp. | *Haemodracon riebeckii* | Phyllodactylidae | Squamata | Reptilia | Yemen |
| XXXXX | *Sarcocystis* sp. | *Hakaria simonyi* | Scincidae | Squamata | Reptilia | Yemen |
| XXXXX | *Sarcocystis* sp. | *Hakaria simonyi* | Scincidae | Squamata | Reptilia | Yemen |
| XXXXX | *Sarcocystis* sp. | *Hakaria simonyi* | Scincidae | Squamata | Reptilia | Yemen |
| XXXXX | *Sarcocystis* sp. | *Hemidactylus oxyrhinus* | Gekkonidae | Squamata | Reptilia | Yemen |
| XXXXX | *Sarcocystis* sp. | *Hemidactylus oxyrhinus* | Gekkonidae | Squamata | Reptilia | Yemen |
| XXXXX | *Sarcocystis* sp. | *Trachylepis socotrana* | Scincidae | Squamata | Reptilia | Yemen |
| XXXXX | *Sarcocystis* sp. | *Trachylepis socotrana* | Scincidae | Squamata | Reptilia | Yemen |
| AB682780 | *Sarcocystis cruzi* | *Bos taurus* | Bovidae | Artiodactyla | Mammalia | Japan |
| AB691780 | *Sarcocystis* sp. | *Diplothrix legata* | Muridae | Rodentia | Mammalia | Japan |
| AB972440 | *Sarcocystis fayeri* | *Equus ferus* | Equidae | Perissodactyla | Mammalia | Canada |
| AF009244 | *Frenkelia microti* | *Microtus arvalis* | Cricetidae | Rodentia | Mammalia | Czech Republic |
| AF009245 | *Frenkelia glareoli* | *Clethrionomys glareolus* | Cricetidae | Rodentia | Mammalia | Czech Republic |
| AF017121 | *Sarcocystis buffalonis* | *Bubalus bubalis* | Bovidae | Artiodactyla | Mammalia | Vietnam |
| AF017123 | *Sarcocystis aucheniae* | *Vicugna pacos* | Camelidae | Artiodactyla | Mammalia | Australia |
| AF106935 | *Cystoisospora belli* | *Homo sapiens* | Hominidae | Primates | Mammalia | - |
| AF109678 | *Besnoitia besnoiti* | - | - | - | - | - |
| AF109679 | *Sarcocystis mucosa* | *Macropus rufogriseus* | Macropodidae | Diprotodontia | Mammalia | Australia |
| AF120114 | *Sarcocystis atheridis* | *Atheris nietschei* | Viperidae | Squamata | Reptilia | Uganda |
| AF120115 | *Sarcocystis dispersa* | *Tyto alba* | Tytonidae | Strigiformes | Aves | Czech Republic |
| AF176927 | *Sarcocystis fusiformis* | *Bubalus bubalis* | Bovidae | Artiodactyla | Mammalia | China |
| AF176930 | *Sarcocystis sinensis* | *Bubalus bubalis* | Bovidae | Artiodactyla | Mammalia | China |
| AF176937 | *Sarcocystis suihominis* | *Sus scrofa* | Suidae | Artiodactyla | Mammalia | China |
| AF176945 | *Sarcocystis hominis* | *Bos taurus* | Bovidae | Artiodactyla | Mammalia | China |
| AF298623 | *Hyaloklossia lieberkuehni* | *Rana esculenta* | Ranidae | Anura | Amphibia | Czech Republic |
| AF434057 | *Sarcocystis singaporensis* | - | - | - | - | Thailand |
| AF513488 | *Sarcocystis* sp. | *Sorex araneus* | Soricidae | Eulipotyphla | Mammalia | Czech Republic |
| AJ271354 | *Neospora caninum* | *Bos taurus* | Bovidae | Artiodactyla | Mammalia | Italy |
| AY015111 | *Sarcocystis rodentifelis* | vole | Cricetidae | Rodentia | Mammalia | Lithuania |
| AY015112 | *Sarcocystis gallotiae* | *Gallotia galloti* | Lacertidae | Squamata | Reptilia | Spain |
| AY015113 | *Sarcocystis lacertae* | *Coronella austriaca* | Colubridae | Squamata | Reptilia | Slovakia |
| AY043206 | *Goussia janae* | *Leuciscus leuciscus* | Cyprinidae | Cypriniformes | Actinopterygii | Czech Republic |
| DQ146148 | *Sarcocystis canis* | *Canis lupus* | Canidae | Carnivora | Mammalia | USA |
| DQ538348 | *Eimeria maxima* | - | - | - | - | - |
| DQ839352 | *Sarcocystis miescheriana* | *Canis lupus* | Canidae | Carnivora | Mammalia | - |
| EF056010 | *Sarcocystis grueneri* | *Rangifer tarandu* | Cervidae | Artiodactyla | Mammalia | Norway |
| EF056012 | *Sarcocystis tarandivulpes* | *Rangifer tarandu* | Cervidae | Artiodactyla | Mammalia | Norway |
| EF056017 | *Sarcocystis tarandi* | *Rangifer tarandu* | Cervidae | Artiodactyla | Mammalia | Norway |
| EF467655 | *Sarcocystis rangi* | *Rangifer tarandu* | Cervidae | Artiodactyla | Mammalia | Iceland |
| EF564590 | *Sarcocystis* sp. | *Ursus arctos* | Ursidae | Carnivora | Mammalia | - |
| EU263366 | *Sarcocystis ramphastosi* | *Ramphastos sulfuratus* | Ramphastidae | Piciformes | Aves | Costa Rica |
| EU282026 | *Sarcocystis scandinavica* | *Alces alces* | Cervidae | Artiodactyla | Mammalia | Norway |
| EU502868 | *Sarcocystis albifronsi* | *Anser albifrons* | Anatidae | Anseriformes | Aves | Lithuania |
| EU553477 | *Sarcocystis anasi* | *Anas platyrhynchos* | Anatidae | Anseriformes | Aves | Lithuania |
| EU553478 | *Sarcocystis cornixi* | *Corvus cornix* | Corvidae | Passeriformes | Aves | Lithuania |
| EU810400 | *Sarcocystis* sp. | *Accipiter cooperii* | Accipitridae | Accipitriformes | Aves | USA |
| FJ196261 | *Sarcocystis gracilis* | *Capreolus capreolus* | Cervidae | Artiodactyla | Mammalia | Norway |
| FJ827485 | *Sarcocystis tupaia* | *Tupaia belangeri* | Tupaiidae | Scandentia | Mammalia | China |
| GQ250977 | *Sarcocystis rangiferi* | *Rangifer tarandus* | Cervidae | Artiodactyla | Mammalia | Norway |
| GQ250987 | *Sarcocystis hardangeri* | *Cervus elaphus* | Cervidae | Artiodactyla | Mammalia | Norway |
| GQ250989 | *Sarcocystis ovalis* | *Cervus elaphus* | Cervidae | Artiodactyla | Mammalia | Norway |
| GQ251015 | *Sarcocystis elongata* | *Cervus elaphus* | Cervidae | Artiodactyla | Mammalia | Norway |
| GQ251030 | *Sarcocystis truncata* | *Cervus elaphus* | Cervidae | Artiodactyla | Mammalia | Norway |
| GQ922886 | *Sarcocystis wobeseri* | *Anas platyrhynchos* | Anatidae | Anseriformes | Aves | Lithuania |
| GU120092 | *Sarcocystis rileyi* | *Anas platyrhynchos* | Anatidae | Anseriformes | Aves | USA |
| GU253883 | *Sarcocystis columbae* | *Columba palumbus* | Columbidae | Columbiformes | Aves | Germany |
| GU253884 | *Sarcocystis* sp. | *Accipiter nisus* | Accipitridae | Accipitriformes | Aves | Germany |
| HM021724 | *Sarcocystis nesbitti* | *Macaca fascicularis* | Cercopithecidae | Primates | Mammalia | China |
| JN226119 | *Sarcocystis capreolicanis* | *Capreolus capreolus* | Cervidae | Artiodactyla | Mammalia | Norway |
| JN226125 | *Sarcocystis silva* | *Capreolus capreolus* | Cervidae | Artiodactyla | Mammalia | Norway |
| JN256117 | *Sarcocystis corvusi* | *Corvus monedula* | Corvidae | Passeriformes | Aves | Lithuania |
| JQ029112 | *Sarcocystis zuoi* | *Rattus norvegicus* | Muridae | Rodentia | Mammalia | Norway |
| JQ733508 | *Sarcocystis lari* | *Larus marinus* | Laridae | Charadriiformes | Aves | Lithuania |
| JQ762307 | *Sarcocystis* sp. | *Podarcis lilfordi* | Lacertidae | Squamata | Reptilia | Spain |
| KC209735 | *Sarcocystis tenella* | *Ovis aries* | Bovidae | Artiodactyla | Mammalia | Norway |
| KC209741 | *Sarcocystis hirsuta* | *Bos taurus* | Bovidae | Artiodactyla | Mammalia | Argentina |
| KC209745 | *Sarcocystis oviformis* | *Capreolus capreolus* | Cervidae | Artiodactyla | Mammalia | Norway |
| KC508513 | *Sarcocystis moulei* | - | - | - | - | Iran |
| KC696570 | S*arcocystis* sp. | *Malpolon monspessulanus* | Lamprophiidae | Squamata | Reptilia | Tunisia |
| KC696571 | S*arcocystis* sp. | *Psammophis schokari* | Lamprophiidae | Squamata | Reptilia | Algeria |
| KF309701 | *Sarcocystis* cf. *clethrionomyelaphis* | *Eothenomys miletus* | Cricetidae | Rodentia | Mammalia | China |
| KF601302 | *Sarcocystis arctica* | *Vulpes lagopus* | Canidae | Carnivora | Mammalia | Norway |
| KF831274 | *Sarcocystis alces* | *Alces alces* | Cervidae | Artiodactyla | Mammalia | Canada |
| KF831276 | *Sarcocystis alceslatrans* | *Alces alces* | Cervidae | Artiodactyla | Mammalia | Canada |
| KF831290 | *Sarcocystis taeniata* | *Alces alces* | Cervidae | Artiodactyla | Mammalia | Canada |
| KF831295 | *Sarcocystis hjorti* | *Alces alces* | Cervidae | Artiodactyla | Mammalia | Norway |
| KJ778017 | *Sarcocystis cafferi* | *Syncerus caffer* | Bovidae | Artiodactyla | Mammalia | South Africa |
| KJ810604 | *Sarcocystis chloropusae* | *Gallinula chloropus* | Rallidae | Gruiformes | Aves | Egypt |
| KJ810606 | *Sarcocystis atraii* | *Fulica atra* | Rallidae | Gruiformes | Aves | Egypt |
| KM234651 | S*arcocystis* sp. | *Tracheloptychus petersi* | Gerrhosauridae | Squamata | Reptilia | Madagascar |
| KM657769 | *Sarcocystis lutrae* | *Lutra lutra* | Mustelidae | Carnivora | Mammalia | Norway |
| KT207459 | *Sarcocystis speeri* | *Didelphis albiventris* | Didelphidae | Didelphimorphia | Mammalia | Argentina |
| KT901117 | *Sarcocystis bovifelis* | *Bos taurus* | Bovidae | Artiodactyla | Mammalia | Argentina |
| KT901153 | *Sarcocystis bovini* | *Bos taurus* | Bovidae | Artiodactyla | Mammalia | New Zealand |
| KU244524 | *Sarcocystis zamani* | *Bandicota indica* | Muridae | Rodentia | Mammalia | Thailand |
| KX453661 | S*arcocystis* sp. | *Lytorhynchus diadema* | Colubridae | Squamata | Reptilia | Oman |
| KX453662 | S*arcocystis* sp. | *Pristurus rupestris* | Sphaerodactylidae | Squamata | Reptilia | Oman |
| KY513624 | *Sarcocystis singaporensis* | *Malayopython reticulatus* | Pythonidae | Squamata | Reptilia | Thailand |
| KY513629 | S*arcocystis* sp. | *Antaresia maculosa* | Pythonidae | Squamata | Reptilia | Australia |
| L24382 | *Sarcocystis arieticanis* | - | - | - | - | - |
| L24384 | *Sarcocystis gigantea* | - | - | - | - | - |
| L37415 | *Toxoplasma gondii* | - | - | - | - | - |
| L76472 | *Sarcocystis capracanis* | - | - | - | - | - |
| M64244 | *Sarcocystis muris* | *Mus musculus* | Muridae | Rodentia | Mammalia | USA |
| MG957190 | *Sarcocystis levinei* | *Bubalus bubalis* | Bovidae | Artiodactyla | Mammalia | India |
| MH626537 | *Sarcocystis falcatula* | *Trichoglossus moluccanus* | Psittaculidae | Psittaciformes | Aves | USA |
| MH898960 | *Sarcocystis halieti* | *Tachybaptus ruficollis* | Podicipedidae | Podicipediformes | Aves | Egypt |
| U07812 | *Sarcocystis neurona* | *Equus ferus* | Equidae | Perissodactyla | Mammalia | - |
| U97524 | S*arcocystis* sp. | *Sistrurus catenatus* | Viperidae | Squamata | Reptilia | Canada |

**Supplementary Table S5.** GenBank codes and additional information on the genetic sequences used for the phylogenetic analyses of eimeriid parasites and their hosts.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **GenBank** | **Parasite** |  | **Host** |  |  | **Country** |
| **code** | **species** | **species** | **family** | **order** | **class** | **of origin** |
| XXXXX | *Isospora* sp. | *Haemodracon trachyrhinus* | Phyllodactylidae | Squamata | Reptilia | Yemen |
| XXXXX | *Lankesterella* sp. | *Mesalina balfouri* | Lacertidae | Squamata | Reptilia | Yemen |
| XXXXX | *Lankesterella* sp. | *Mesalina balfouri* | Lacertidae | Squamata | Reptilia | Yemen |
| AB205165 | *Eimeria gruis* | *Grus* sp. | Gruidae | Gruiformes | Aves | Japan |
| AB205170 | *Eimeria reichenowi* | *Grus* sp. | Gruidae | Gruiformes | Aves | Japan |
| AB205175 | *Eimeria reichenowi* | *Grus* sp. | Gruidae | Gruiformes | Aves | Japan |
| AF026388 | *Eimeria tenella* | - | - | - | - | - |
| AF041437 | *Eimeria meleagrimitis* | *Meleagris* sp. | Phasianidae | Galliformes | Aves | - |
| AF060975 | *Caryospora bigenetica* | - | - | - | - | - |
| AF060976 | *Caryospora bigenetica* | - | - | - | - | - |
| AF061567 | *Cyclospora* sp. | baboon | Cercopithecidae | Primates | Mammalia | Tanzania |
| AF061568 | *Cyclospora* sp. | baboon | Cercopithecidae | Primates | Mammalia | Tanzania |
| AF080611 | *Lankesterella minima* | *Rana catesbeiana* | Ranidae | Anura | Amphibia | Canada |
| AF080612 | *Isospora robini* | *Turdus migratorius* | Turdidae | Passeriformes | Aves | Canada |
| AF080613 | *Isospora gryphoni* | *Carduelis tristis* | Fringillidae | Passeriformes | Aves | Canada |
| AF080614 | *Eimeria falciformis* | - | - | - | - | - |
| AF111183 | *Cyclospora cayetanensis* | *Homo sapiens* | Hominidae | Primates | Mammalia | Haiti |
| AF111187 | *Cyclospora papionis* | *Papio anubis* | Cercopithecidae | Primates | Mammalia | Ethiopia |
| AF246717 | *Eimeria telekii* | *Lemniscomys striatus* | Muridae | Rodentia | Mammalia | Kenya |
| AF291427 | *Eimeria alabamensis* | - | - | - | - | - |
| AF307876 | *Eimeria antrozoi* | *Antrozous pallidus* | Vespertilionidae | Chiroptera | Mammalia | USA |
| AF307877 | *Eimeria rioarribaensis* | *Myotis ciliolabrum* | Vespertilionidae | Chiroptera | Mammalia | USA |
| AF307879 | *Eimeria onychomysis* | - | Cricetidae | Rodentia | Mammalia | - |
| AF307880 | *Eimeria albigulae* | - | Cricetidae | Rodentia | Mammalia | - |
| AF311640 | *Eimeria langebarteli* | *Reithrodontomys* sp. | Cricetidae | Rodentia | Mammalia | - |
| AF311641 | *Eimeria papillata* | *Mus* sp. | Muridae | Rodentia | Mammalia | - |
| AF311642 | *Eimeria reedi* | *Perognathus* sp. | Heteromyidae | Rodentia | Mammalia | - |
| AF311643 | *Eimeria separata* | *Rattus* sp. | Muridae | Rodentia | Mammalia | - |
| AF311644 | *Eimeria sevilletensis* | *Onychomys* sp. | Cricetidae | Rodentia | Mammalia | - |
| AF324212 | *Eimeria adenoeides* | - | - | - | - | - |
| AF324213 | *Eimeria catronensis* | - | - | - | - | - |
| AF324214 | *Eimeria chobotari* | - | - | - | - | - |
| AF324215 | *Eimeria pilarensis* | - | - | - | - | - |
| AF324216 | *Eimeria scholtysecki* | - | - | - | - | - |
| AF339489 | *Eimeria chaetodipi* | *Chaetodipus hispidus* | Heteromyidae | Rodentia | Mammalia | - |
| AF339490 | *Eimeria dipodomysis* | *Dipodomys phillipsii* | Heteromyidae | Rodentia | Mammalia | - |
| AF339492 | *Eimeria peromysci* | *Peromyscus truei* | Cricetidae | Rodentia | Mammalia | - |
| AY331571 | *Atoxoplasma* sp. | *Passer melanurus* | Passeridae | Passeriformes | Aves | - |
| AY613853 | *Eimeria arnyi* | *Diadophis punctatus* | Dipsadidae | Squamata | Reptlia | USA |
| DQ390207 | *Lankesterella valsainensis* | *Parus caeruleus* | Paridae | Passeriformes | Aves | Spain |
| EF210322 | *Eimeria maxima* | - | - | - | - | - |
| EF210324 | *Eimeria acervulina* | - | - | - | - | - |
| EU717219 | *Eimeria ranae* | *Rana temporaria* | Ranidae | Anura | Amphibia |  |
| FJ009241 | *Goussia noelleri* | *Rana dalmatina* | Ranidae | Anura | Amphibia |  |
| FJ009242 | *Goussia neglecta* | *Pelophylax esculentus* | Ranidae | Anura | Amphibia |  |
| FJ236371 | *Eimeria praecox* | *Gallus gallus* | Phasianidae | Galliformes | Aves | USA |
| FJ236378 | *Eimeria* cf. *mivati* | *Gallus gallus* | Phasianidae | Galliformes | Aves | USA |
| FJ829323 | *Eimeria trichosuri* | *Trichosurus cunninghami* | Phalangeridae | Diprotodontia | Mammalia |  |
| JX984674 | *Schellackia* sp. | *Lacerta schreiberi* | Lacertidae | Squamata | Reptlia | Spain |
| JX984675 | *Schellackia* sp. | *Lacerta schreiberi* | Lacertidae | Squamata | Reptlia | Spain |
| JX984676 | *Schellackia* sp. | *Podarcis hispanica* | Lacertidae | Squamata | Reptlia | Spain |
| KJ131414 | *Schellackia orientalis* | *Tackydromus sexlineatus* | Lacertidae | Squamata | Reptlia | Indonesia |
| KJ131415 | *Schellackia bolivari* | *Acanthodactylus erythrurus* | Lacertidae | Squamata | Reptlia | Morocco |
| KJ131416 | *Schellackia bolivari* | *Acanthodactylus erythrurus* | Lacertidae | Squamata | Reptlia | Spain |
| KJ131417 | *Lankesterella* sp. | *Acanthodactylus erythrurus* | Lacertidae | Squamata | Reptlia | Spain |
| KR360732 | *Eimeria steinhausi* | *Salamandra salamandra* | Salamandridae | Caudata | Amphibia | Portugal |
| KU180238 | *Isospora takydromi* | *Takydromus sexlineatus* | Lacertidae | Squamata | Reptlia | Spain |
| KU180239 | *Isospora fahdi* | *Acanthodactylus erythrurus* | Lacertidae | Squamata | Reptlia | Morocco |
| KU180240 | *Isospora abdallahi* | *Acanthodactylus boskianus* | Lacertidae | Squamata | Reptlia | Tunisia |
| KU180241 | *Isospora amphiboluri* | *Pogona vitticeps* | Agamidae | Squamata | Reptlia | Spain |
| KU180242 | *Isospora wiegmanniana* | *Trogonophis wiegmanni* | Trogonophidae | Squamata | Reptlia | Spain |
| KU180243 | *Isospora albogularis* | *Gonatodes albogularis* | Sphaerodactylidae | Squamata | Reptlia | Spain |
| KU180244 | *Isospora chafarinensis* | *Chalcides parallelus* | Scincidae | Squamata | Reptlia | Spain |
| KU180245 | *Isospora tarentolae* | *Tarentola delalandii* | Phyllodactylidae | Squamata | Reptlia | Spain |
| KU180246 | *Isospora gekkonis* | *Phelsuma madagascariensis* | Gekkonidae | Squamata | Reptlia | Spain |
| KU180247 | *Caryospora ernsti* | *Anolis carolinensis* | Dactyloidae | Squamata | Reptlia | Spain |
| KU180248 | *Lankesterella* sp. | *Anolis carolinensis* | Dactyloidae | Squamata | Reptlia | Spain |
| KX453651 | *Lankesterella* sp. | *Sclerophrys arabica* | Bufonidae | Anura | Amphibia | Oman |
| KX453652 | *Lankesterella* sp. | *Ptyodactylus orlovi* | Phyllodactylidae | Squamata | Reptlia | Oman |
| KX453655 | *Lankesterella* sp. | *Ptyodactylus dhofarensis* | Phyllodactylidae | Squamata | Reptlia | Oman |
| KX453658 | *Lankesterella* sp. | *Hemidactylus hajarensis* | Gekkonidae | Squamata | Reptlia | Oman |
| KX453660 | *Lankesterella* sp. | *Ptyodactylus orlovi* | Phyllodactylidae | Squamata | Reptlia | Oman |
| MF167544 | *Lankesterella* sp. | *Uta stansburiana* | Phrynosomatidae | Squamata | Reptlia | USA |
| MF167545 | *Lankesterella* sp. | *Dipsosaurus dorsalis* | Iguanidae | Squamata | Reptlia | USA |
| MF167546 | *Lankesterella* sp. | *Dipsosaurus dorsalis* | Iguanidae | Squamata | Reptlia | USA |
| MF167547 | *Lankesterella* sp. | *Dipsosaurus dorsalis* | Iguanidae | Squamata | Reptlia | USA |
| MF167548 | *Lankesterella* sp. | *Dipsosaurus dorsalis* | Iguanidae | Squamata | Reptlia | USA |
| MF167549 | *Lankesterella* sp. | *Uta stansburiana* | Phrynosomatidae | Squamata | Reptlia | USA |
| MF167550 | *Lankesterella* sp. | *Sceloporus occidentalis* | Phrynosomatidae | Squamata | Reptlia | USA |
| MF167551 | *Lankesterella* sp. | *Sceloporus occidentalis* | Phrynosomatidae | Squamata | Reptlia | USA |
| MF167552 | *Lankesterella* sp. | *Uta stansburiana* | Phrynosomatidae | Squamata | Reptlia | USA |
| MF167553 | *Lankesterella* sp. | *Uta stansburiana* | Phrynosomatidae | Squamata | Reptlia | USA |
| MF167554 | *Lankesterella* sp. | *Phymaturus payuniae* | Iguanidae | Squamata | Reptlia | Argentina |
| MF167555 | *Lankesterella* sp. | *Liolaemus pictus* | Iguanidae | Squamata | Reptlia | Chile |
| MH459286 | *Lankesterella* sp. | *Uta stansburiana* | Phrynosomatidae | Squamata | Reptlia | Mexico |
| MH459288 | *Lankesterella* sp. | *Uta stansburiana* | Phrynosomatidae | Squamata | Reptlia | Mexico |
| MH459292 | *Lankesterella* sp. | *Uta stansburiana* | Phrynosomatidae | Squamata | Reptlia | Mexico |
| U40261 | *Cyclospora* sp. | *Homo sapiens* | Hominidae | Primates | Mammalia | - |
| U40262 | *Eimeria mitis* | - | - | - | - | - |
| U40263 | *Eimeria nieschulzi* | - | - | - | - | - |
| U67116 | *Eimeria brunetti* | - | - | - | - | - |
| U77084 | *Eimeria bovis* | - | - | - | - | - |