

Figure S1. Relative abundance of protistan contigs at various metazoan taxonomic levels detected in the assemblies of all Metazoa (A) and different sub-taxa: insects (B), Mollusca (C), Cnidaria (D), Mammals (E), and Aves (F).

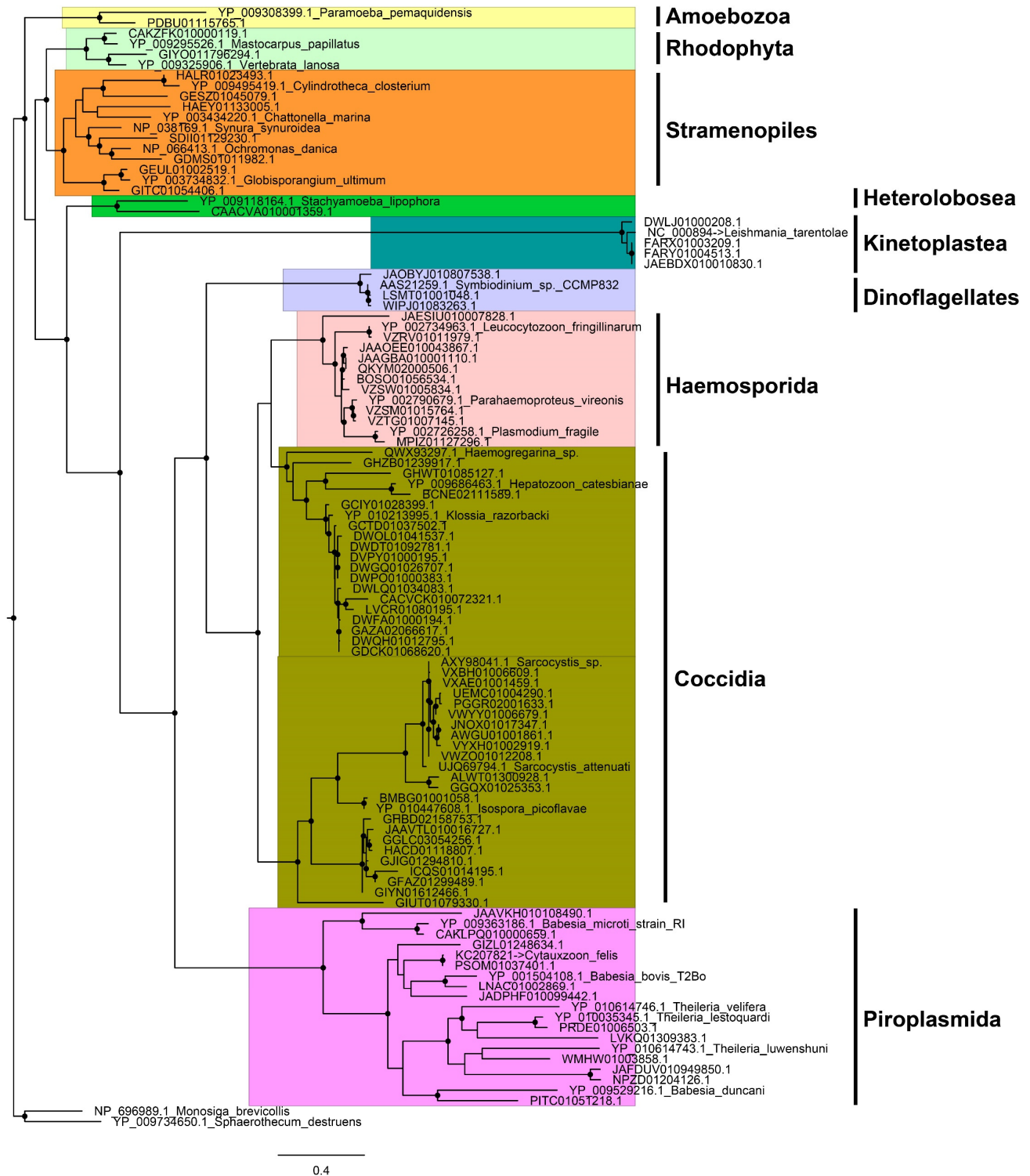


Figure S2. Maximum likelihood tree of CYTB predicted from protist-contaminated contigs. Nodes with bootstrap larger than 70% are denoted by a dark circle. The tree was rooted with the Choanoflagellata taxon *Monosiga brevicollis* and Ichthyosporaea taxon *Sphaerothecum destruens*. The reference sequences are named in the format of 'Accession number_species name'.

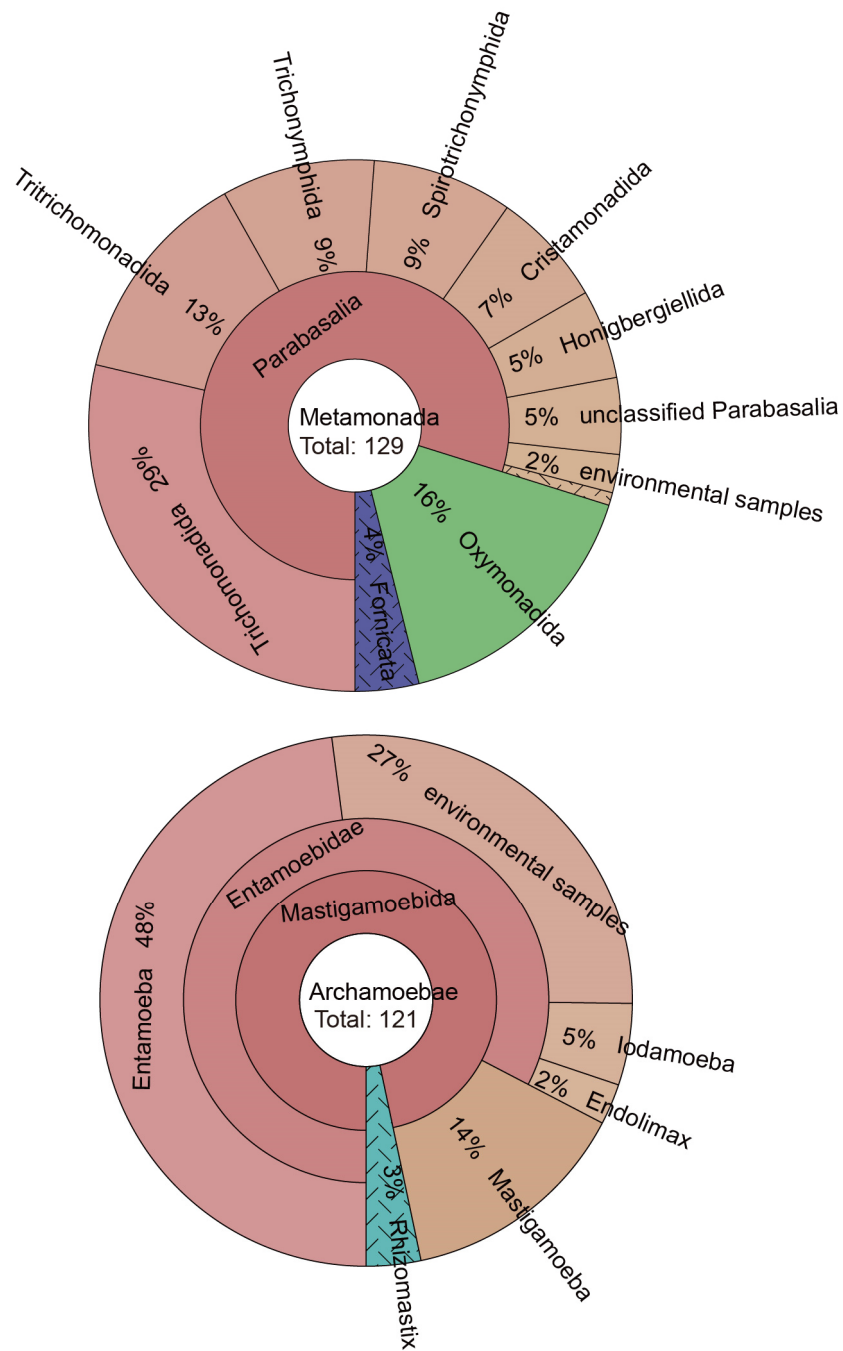


Figure S3. Krona plot of contaminated contigs belonging to amitochondriate protist Metamonada and Archamoebae in WGS/TSA assemblies.

Table S1. Different major phylogenetic units causing the contamination in different animal taxa. The ratios were calculated by dividing the number of contaminated contigs in each protistan taxa by that of the corresponding parent node.

Phylogenetic unit		Mammals	Bony fishes	Crustacea	Insects	Mollusca	Cnidaria
Alveolata	Ciliophora	10/260	143/200	657/740	183/543	109/178	367/2181
	Apicomplexa	246/260	36/200	52/740	269/543	25/178	170/2181
	dinoflagellates	0	18/200	16/740	51/543	29/178	1609/2181
Stramenopiles	Ochrophyta	25/43	302/441	490/715	205/563	320/378	1834/2158
	Oomycota	18/43	94/441	95/715	317/563	17/378	68/2158

Table S2. Number of contigs belonging to different protistan taxa in assemblies of following animal species taxa: mammals, birds, bony fishes, Crustacea, insects, Mollusca and Cnidaria.

Protistan taxa	Mammals	Aves	Bony fishes	Crustacea	Insects	Mollusca	Cnidaria
Ciliophora	10	0	143	657	183	109	367
Apicomplexa	246	269	36	52	269	25	170
Dinophyceae	0	5	18	16	51	29	1609
Ochrophyta	25	7	302	490	205	320	1834
Oomycota	18	2	94	95	317	17	68
Discoba	5	0	192	120	128	32	79
Amoebozoa	8	0	68	90	219	39	105
Haptista	0	0	1	9	13	64	45
Rhodophyta	7	6	29	102	64	43	769
Others	7	18	204	322	320	113	794
Total contaminated contigs	326	307	1087	1953	1769	791	5840