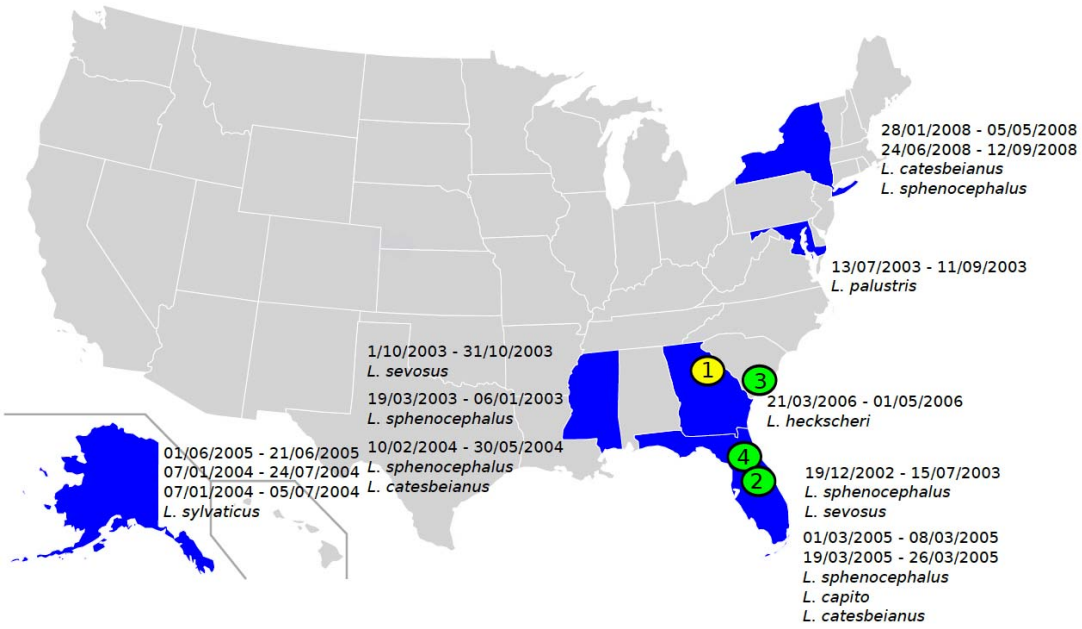
Supplementary Materials for 'Cryptic infection of a broad taxonomic and geographic diversity of tadpoles by Perkinsea protists' by Chambouvet et al.

Supplementary Figure S1: Geographic distribution of previously reported detections of Perkinsus-like parasites in the USA.

States coloured in blue are where a mortality diagnosis has been attributed to *Perkinsus*-like parasites (data available at http://www.nwhc.usgs.gov/publications/quaterly_reports). Circles represented the mortality events described in peer-reviewed scientific publications. The yellow circle represents mortality events where molecular data has been used to confirm the presence of the *Perkinsus*-like parasite. The green circles represent the sites of mortality events attributed to *Perkinsus*-like parasites using microscopy but where no molecular data was published. The number inside each circles correspond to the table below with details of each mortality event/publication.

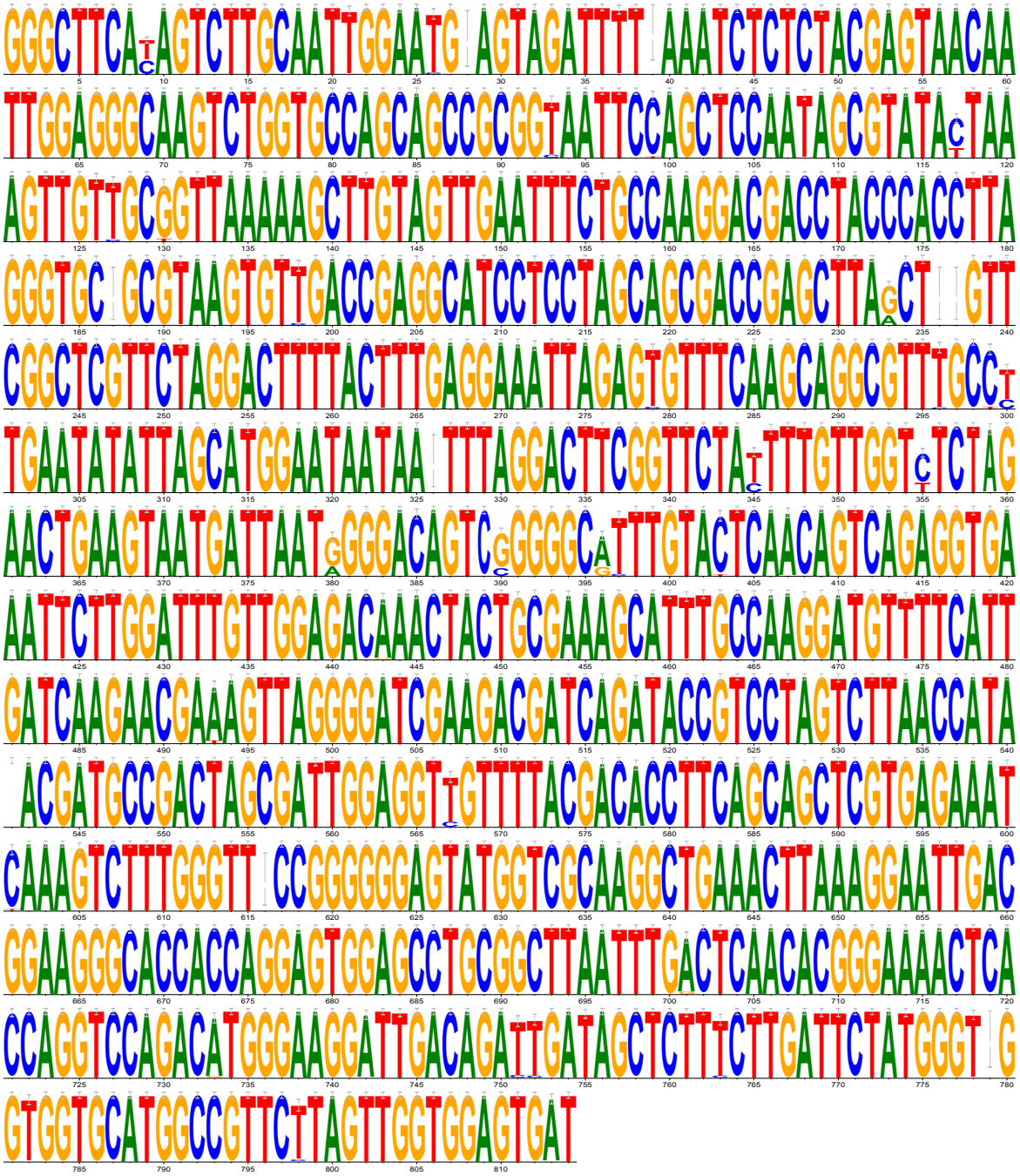


Number in circles	States	Location	GPS point	Dates	Host species	Reference
1	GA	Georgia Whitehall forest	33°53'05''N 83°21'28''W	April / May 2006	*L. sphenocephalus*	(1)
2	FL	Blue pond	29°42’40.3”N 81°59’36.6”W	Jan. 2006	*L. sphenocephalus*	(2)
	FL	Perkinsus pond	30°3’38.6”N 84°23’45.8”N	Dec. 2002, Feb. 2003, May 2003	*L. sphenocephalus, A. gryllus*	
	FL	Withlacoochee State forest-croom15	28°35’52.9”N 82°14’59.4”W	March 2005	*L. capito, L. catesbeianus, L. sphenocephalus*	
	FL	Withlacoochee State forest-croom16	28°35’51.1”N 82°14’56.4”W	March 2005	*L. capito, L. catesbeianus, L. sphenocephalus*	
3	SC	Savannah river site	33°18’59.4”N 81°32’21”W	Jan. 2006	*L. sphenocephalus*	(3)
4	FL	Pebbe lake	29°49’31.4”N81 °57’12.6”W	April 2011	*L. capito, L. catesbeianus, L. sphenocephalus*	(4)

Supplementary Figure S2: similarity between SSU rDNA sequences from clades A, B and C identified in this study.

(A) Graphical representation of sequence polymorphisms across the SSU rDNA sequence sampled in clusters A, B and C (http://weblogo.berkeley.edu). Gaps indicate rare nucleotide insertions. **(B)** Identity percentage between the three clusters A, B, C and the published sequence of the previously sampled frog *Perkinsus* (EF675616 – (1)). Data reported in Tables B was calculated using the SIAS website (available at http://imed.med.ucm.es/Tools/sias.html).

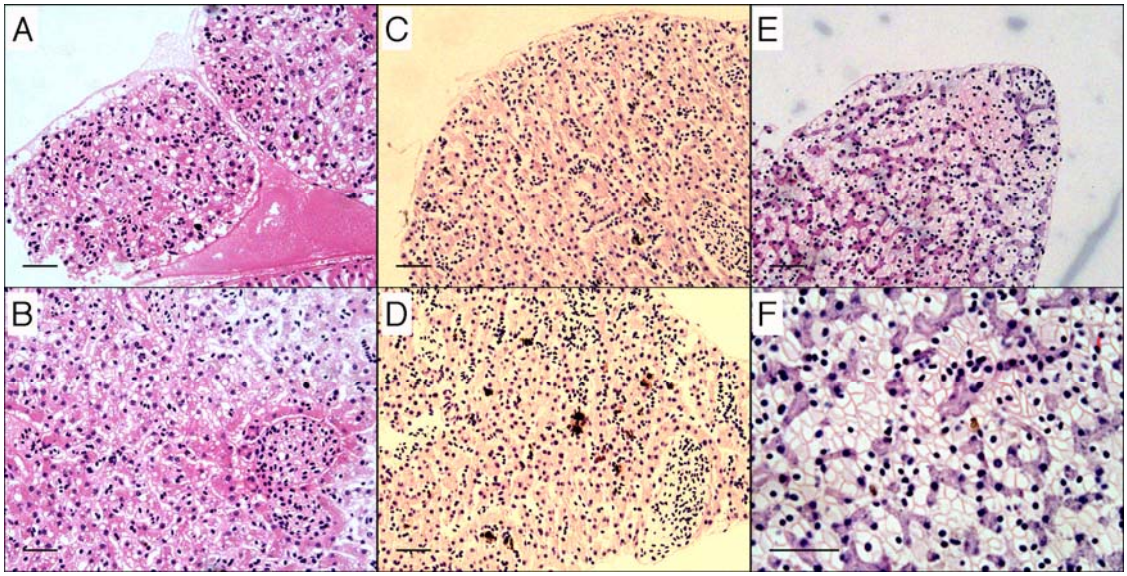
A.



B.

	Clade A	Clade B	Clade C	EF675616
Clade A	100%	98.64%	97.52%	92.21%
Clade B		100%	97.89%	92.58%
Clade C			100%	91.96%
EF675616				100%

Supplementary Figure S3: Transverse sections (5 µm thick) of liver tissue sample stained with H&E method.
(A-B) represent A11 liver sample from Cameroon (Africa), (C-D) from A35 liver sample from Tanzania (Africa) and (E-F) from T5.1 liver sample from Fr. Guiana (sections from five further samples not shown). Digital image was obtained using x 10 objective (A-E) and x 20 objective (F). Scale bar represent 10µm.



Supplementary Table S1: Primers used in this study.

Primer name	Primer sequence (5'-3')	Specificity	Reference
86F-B	CTTGCCYGGCGATRGAYCT	NAG01 Cluster	This study
300F-B	GGGCTTCAYAGTCTTGCAAT	NAG01 Cluster	This study
1294 R	CCAGRACATCTAAGGGCATCA	eukaryotes	This study
1282 R	TAAGGGCATCACWGACCTGTTAT	eukaryotes	This study
600R	GAATTTCACCTCTGACSGTTTG	eukaryotes	This study
16Sar-F	CGCCTGTTTATCAAAACAT	vertebrates	(5)
16Sar-R	CCGGTCTGAACTCAGATCACGT	vertebrates	(5)

Supplementary Table S2: List of freshwater environments sampled in this study.

Name	Locations	Country	GPS	Date dd/mm/yyyy	Size fraction (μm)	Volume filtered (L)	Description	Number of clones sequenced	Number of NAG01 clones
Kennick reservoir	Dartmoor National Park (Devon)	UK	N50°39'00" W3°41'24"	26/01/2010	0.2-20	0.5	Large reservoir	21	16
Washington Singer Pond	Exeter University	UK	N50°43'58.8" W3°32'13.2"	03/11/2009	2-20	0.6	Small permanent pond	65	61
				29/11/2009	2-20	0.6		15	13
Tottiford reservoir	Dartmoor National Park (Devon)	UK	N50°37'55.2" W3°40'58.799"	26/01/2010	0.2-20	0.4	Large reservoir	42	31
Trenchford reservoir	Dartmoor National Park (Devon)	UK	N50°37'48" W3°41'16.8"	26/01/2010	2-20	1	Large reservoir	24	22
NHM pond	Natural History Museum, London	UK	N51°29'45" W0°10'42"	18/09/2011	0.2-20	1	Small permanent pond	53	30

				15/05/2013	2-5	1		10	5
SL	Sevenoaks pond London	UK	N51°16'14.5" E0°11'22.1"	15/05/2013	2-5	1	Small pond	10	9
Ullswater lake	Lake District National Park (Cumbria)	UK	N54°34'34" W2°53'09"	April/July 2010	0.2-10	1	Lake- Oligo/mesotrophic	8	7
T1	Near Roura	Fr. Guiana	N4°38'34" W52°17'57"	April 2013	2-5	1	Seasonal pond	20	15
T2	Near Patawa	Fr. Guiana	N4°31'45.8" W52°09'05.6"	April 2013	2-5	0.55	Permanent pond	20	13
T6	Patawa-Kaw	Fr. Guiana	N4°31'23.8" W52°6'36.8"	April 2013	2-5	1	Small seasonal pond	20	18

Supplementary Table S3: Details of the environmental sequences included in the phylogenetic analysis shown in figure 1.

Sequence name	Name	Location	Country	Date dd/mm/yyyy	NCBI accession number
BIB1_A2	Kennick reservoir	Dartmoor National Park (Devon)	UK	26/01/2010	KP122562
Bib1_E2	Kennick reservoir	Dartmoor National Park (Devon)	UK	26/01/2010	KP122557
Bib1_E3	Kennick reservoir	Dartmoor National Park (Devon)	UK	26/01/2010	KP122534
BIB1_F2	Kennick reservoir	Dartmoor National Park (Devon)	UK	26/01/2010	KP122523
BIB1_G1	Kennick reservoir	Dartmoor National Park (Devon)	UK	26/01/2010	KP122546
BIB1-D1	Kennick reservoir	Dartmoor National Park (Devon)	UK	26/01/2010	KP122521
BiB1-D3	Kennick reservoir	Dartmoor National Park (Devon)	UK	26/01/2010	KP122539
BIB3_B11	Washington Singer Pond	Exeter University	UK	03/11/2009	KP122563
BIB3_B9	Washington Singer Pond	Exeter University	UK	03/11/2009	KP122559
BIB3_D3	Washington Singer Pond	Exeter University	UK	03/11/2009	KP122529
BIB3_H8	Washington Singer Pond	Exeter University	UK	29/10/2009	KP122530
BIB4_A10	NHM pond	Natural History Museum, London	UK	18/09/2011	KP122537
BIB4_D12	NHM pond	Natural History Museum, London	UK	18/09/2011	KP122540
BIB4_E12	NHM pond	Natural History Museum, London	UK	18/09/2011	KP122536
BIB4_F10	NHM pond	Natural History Museum, London	UK	18/09/2011	KP122520

BIB4_G2	Ullswater lake	Lake District National Park (Cumbria)	UK	2010	KP122551
BIB4_G4	NHM pond	Natural History Museum, London	UK	18/09/2011	KP122528
BIB4_G7	Ullswater lake	Lake District National Park (Cumbria)	UK	2010	KP122525
BIB4_H10	NHM pond	Natural History Museum, London	UK	18/09/2011	KP122552
BIB5_A11	Trenchford reservoir	Dartmoor National Park (Devon)	UK	26/01/2010	KP122555
BIB5_A4	Tottiford reservoir	Dartmoor National Park (Devon)	UK	26/01/2010	KP122558
BIB5_B10	Trenchford reservoir	Dartmoor National Park (Devon)	UK	26/01/2010	KP122524
BIB5_B12	Trenchford reservoir	Dartmoor National Park (Devon)	UK	26/01/2010	KP122544
BIB5_B5	Tottiford reservoir	Dartmoor National Park (Devon)	UK	26/01/2010	KP122560
BIB5_C10	Trenchford reservoir	Dartmoor National Park (Devon)	UK	26/01/2010	KP122538
BIB5_C12	Trenchford reservoir	Dartmoor National Park (Devon)	UK	26/01/2010	KP122556
BIB5_C6	Tottiford reservoir	Dartmoor National Park (Devon)	UK	26/01/2010	KP122561
BIB5_D12	Trenchford reservoir	Dartmoor National Park (Devon)	UK	26/01/2010	KP122522
BIB5_F1	Tottiford reservoir	Dartmoor National Park (Devon)	UK	26/01/2010	KP122554
BIB5_F12	Trenchford reservoir	Dartmoor National Park (Devon)	UK	26/01/2010	KP122553
BIB5_F9	Kennick reservoir	Dartmoor National Park (Devon)	UK	26/01/2010	KP122527

BIB5_H9	Kennick reservoir	Dartmoor National Park (Devon)	UK	26/01/2010	KP122535
BIB6_A8	SL	Sevenoaks pond London	UK	15/05/2013	KP122564
BIB6_B2	NHM pond	Natural History Museum, London	UK	15/05/2013	KP122533
BIB6_C3	NHM pond	Natural History Museum, London	UK	15/05/2013	KP122532
BIB6_E1	NHM pond	Natural History Museum, London	UK	15/05/2013	KP122542
BIB6_F7	SL	Sevenoaks pond London	UK	15/05/2013	KP122531
G1_2013_A1	T2	Near Patawa	Fr. Guiana	April 2013	KP122545
G1_2013_A2	T2	Near Patawa	Fr. Guiana	April 2013	KP122548
G1_2013_G1	T2	Near Patawa	Fr. Guiana	April 2013	KP122547
G1_2013_H1	T2	Near Patawa	Fr. Guiana	April 2013	KP122549
G1_2013_H2	T2	Near Patawa	Fr. Guiana	April 2013	KP122550
G2013_T1_A7	T1	Near Roura	Fr. Guiana	April 2013	KP122543
G2013_T1_E5	T1	Near Roura	Fr. Guiana	April 2013	KP122565
G2013_T1_H5	T1	Near Roura	Fr. Guiana	April 2013	KP122526
G2013_T6_F11	T6	Patawa-Kaw	Fr. Guiana	April 2013	KP122541
Liver_mortality event_clone_85.1c	University of Georgia's Whitehall Forest pond	Athens, GA	USA	2003	KP122566

Liver_mortality event_clone_85.2c	University of Georgia's Whitehall Forest pond	Athens, GA	USA	2003	KP122615
Liver_mortality event_clone_85.3c	University of Georgia's Whitehall Forest pond	Athens, GA	USA	2003	KP122567
Liver_mortality event_clone_85.4c	University of Georgia's Whitehall Forest pond	Athens, GA	USA	2003	KP122568
Liver_mortality event_clone_85.5c	University of Georgia's Whitehall Forest pond	Athens, GA	USA	2003	KP122569

Supplementary Table S4: GenBank environmental 18S rDNA sequences belonging to Perkinsea (Alveolata) used in phylogenetic analysis reported in Figure 1.
Sequences sampled from marine environments are highlighted in grey. Database searched May 2014.

Accession no.	Environmental clone	Environment	Location	Sampled environment	Reference
EF196787	B91	Lake Bourget	Alps, France	Mesotrophic lake	(6)
DQ244038	PAB5AU2004	Lake Pavin	Massif Central, France	Oligomesotrophic lake	(7)
EU162625	PAG5SP2005	Lake Pavin	Massif Central, France	Oligomesotrophic lake	(8)
EU162626	PAC11SP2005	Lake Pavin	Massif Central, France	Oligomesotrophic lake	(8)
EU162628	PAD1SP2005	Lake Pavin	Massif Central, France	Oligomesotrophic lake	(8)
EU162627	PAD12SP2005	Lake Pavin	Massif Central, France	Oligomesotrophic lake	(8)

EU162629	PAA8SP2005	Lake Pavin	Massif Central, France	Oligomesotrophic lake	(8)
DQ244020	PAB11AU2004	Lake Pavin	Massif Central, France	Oligomesotrophic lake	(8)
DQ244037	PAF7AU2004	Lake Pavin	Massif Central, France	Oligomesotrophic lake	(7)
DQ244021	PAD10AU2004	Lake Pavin	Massif Central, France	Oligomesotrophic lake	(7)
DQ244035	PAD7AU2004	Lake Pavin	Massif Central, France	Oligomesotrophic lake	(7)
DQ244034	PAG2AU2004	Lake Pavin	Massif Central, France	Oligomesotrophic lake	(7)
EF527175	SA2_2G9	Framvaren Fjord	South-western Norway	Axonic/sulfidic waters	(9)
EU162624	PAA9SP2005	Lake Pavin	Massif Central, France	Oligomesotrophic lake	(8)

EU162630	PAC8SP2005	Lake Pavin	Massif Central, France	Oligomesotrophic lake	(8)
HQ191345	PA2009C9	Lake Pavin	Massif Central, France	Oligomesotrophic lake	(10)
AJ402327	OLI1001	Equatorial Pacific Ocean	Pacific Ocean	Marine waters	(11)
AY642744	A31	Lake Aydat	Massif Central, France	Eutrophic lake	(12)
AY642737	A20	Lake Aydat	Massif Central, France	Eutrophic lake	(12)
EF526795	NA2_4B10	Framvaren Fjord	Norway	Anoxic marine waters	(9)
EF526831	NA1_3C6	Framvaren Fjord	Norway	Anoxic marine waters	(9)
EF526760	NA2_2D10	Framvaren Fjord	Norway	Anoxic marine waters	(9)

DQ103802	M2_18C03	Mariager Fjord	Danish east coast	Anoxic marine waters	(13)
AF530536	AT4-98	Hydrothermal sediment	Hydrothermal vents, Mid-Atlantic Ridge	Extreme environment	(14)
GQ330637	PR2_3E_17	Praz Rodet peat bog	Switzerland	Acidic extreme waters	(15)
FJ832127	BW-dinoclone29	Ship ballast water	Singapore ballast water	Marine waters	Park *et al.* unpublished
DQ455739	BB01-172.24w	Estuary	USA: Barnegat Bay, NJ	Marine waters	Lim *et al.* unpublished
AY919720	LG10-12	Lake George	Adirondack Park North-Eastern New York, USA	Oligotrophic lake	(16)
AY919735	LG15-08	Lake George	Adirondack Park North-Eastern New York, USA	Oligotrophic lake	(16)
AY919809	LG36-11	Lake George	Adirondack Park North-Eastern New York, USA	Oligotrophic lake	(16)

AY919712	LG09-02	Lake George	Adirondack Park North-Eastern New York, USA	Oligotrophic lake	(16)
AY919821	LG53-06	Lake George	Adirondack Park North-Eastern New York, USA	Oligotrophic lake	(16)
AY919820	LG50-10	Lake George	Adirondack Park North-Eastern New York, USA	Oligotrophic lake	(16)
AY919736	LG15-10	Lake George	Adirondack Park North-Eastern New York, USA	Oligotrophic lake	(16)
AF530534	IN242	Microcolonizers	Hydrothermal vents, Mid-Atlantic Ridge	Extreme environment	(14)
DQ244027	PAA22AU2004	Lake Pavin	Massif Central, France	Oligomesotrophic lake	(7)
DQ244031	PAF8AU2004	Lake Pavin	Massif Central, France	Oligomesotrophic lake	(7)
AY919769	LG25-01	Lake George	Adirondack Park North-Eastern New York, USA	Oligotrophic lake	(16)

GU290070	TKR07E.24	Lake Tanganyika	East Africa		Tarbe *et al.* unpublished
AY919682	LG02-01	Lake George	Adirondack Park North-Eastern New York, USA	Oligotrophic lake	(16)
JN090897	KRL01E37	Lake Karla	Greece	Lake	(17)
JN090873	KRL01E13	Lake Karla	Greece	Lake	(17)
AF530535	AT2-6	Microcolonizers	Hydrothermal vents, Mid-Atlantic Ridge	Extreme environment	(14)
EU162621*	PAA10SP2005	Lake Pavin	Massif Central, France	Oligomesotrophic lake	(8)
EU162622*	PAB8SP2005	Lake Pavin	Massif Central, France	Oligomesotrophic lake	(8)
EU162623*	PAB88SP2005	Lake Pavin	Massif Central, France	Oligomesotrophic lake	(8)

* Excluded as central portion of the database sequence was absent

Supplementary Table S5: Detail of tadpoles tested in this study and the corresponding NCBI accession number of the 16S rRNA gene sequence.

Individual tadpoles highlighted in grey are positive for PCR detection of the NAG01 protist. Life stage was determined using the Gosner's table (18) except the tadpoles from A1 to A7 where life stages (labelled with an '*') was identified using the Nieuwkoop and Faber table (19). The column headed "Tadpole BLAST iD" reports the taxonomy of the closest GenBank, please see Table S8 for further details.

Location	Date	Environment	GPS coordinate	Locality	Altitude (m)	Sampling event / locality	Tadpole ID	Tadpole BLAST ID	Life stage	NCBI accession number
Fr. Guiana	04/2013	T1	N4°38'34" W52°17'57"	Fourgassie junction, near Roura	240	FG1	G1.1	*Leptodactylus knudseni*	40	KP122399
Fr. Guiana	04/2013	T1	N4°38'34" W52°17'57"	Fourgassie junction, near Roura	240	FG1	G1.2	*Leptodactylus knudseni*	34/35	KP122400
Fr. Guiana	04/2013	T1	N4°38'34" W52°17'57"	Fourgassie junction, near Roura	240	FG1	G1.3	*Leptodactylus knudseni*	40	KP122401
Fr. Guiana	04/2013	T1	N4°38'34" W52°17'57"	Fourgassie junction, near Roura	240	FG1	G1.4	*Leptodactylus knudseni*	31	KP122402
Fr. Guiana	04/2013	T1	N4°38'34" W52°17'57"	Fourgassie junction, near Roura	240	FG1	G1.5	*Phyllomedusa tomopterna*	29	KP122403

Fr. Guiana	14/04/2013	T2	N4°31’45.8” W52°09’05.6”	Near Patawa	309	FG2	G2.1	*Phyllomedusa tomopterna*	30	KP122405
Fr. Guiana	14/04/2013	T2	N4°31’45.8” W52°09’05.6”	Near Patawa	309	FG2	G2.2	*Phyllomedusa tomopterna*	29	KP122406
Fr. Guiana	14/04/2013	T2	N4°31’45.8” W52°09’05.6”	Near Patawa	309	FG2	G2.3	*Phyllomedusa tomopterna*	29	KP122407
Fr. Guiana	14/04/2013	T2	N4°31’45.8” W52°09’05.6”	Near Patawa	309	FG2	G2.4	*Phyllomedusa tomopterna*	26	KP122408
Fr. Guiana	14/04/2013	T2	N4°31’45.8” W52°09’05.6”	Near Patawa	309	FG2	G2.5	*Phyllomedusa tomopterna*	37	KP122409
Fr. Guiana	14/04/2013	T2	N4°31’45.8” W52°09’05.6”	Near Patawa	309	FG2	G2.6	*Phyllomedusa tomopterna*	36	KP122410
Fr. Guiana	14/04/2013	T2	N4°31’45.8” W52°09’05.6”	Near Patawa	309	FG2	G2.7	*Phyllomedusa tomopterna*	38	KP122411
Fr. Guiana	14/04/2013	T2	N4°31’45.8” W52°09’05.6”	Near Patawa	309	FG2	G2.8	*Phyllomedusa tomopterna*	25	KP122412

Fr. Guiana	14/04/2013	T2	N4°31'45.8" W52°09'05.6"	Near Patawa	309	FG2	G2.9	*Phyllomedusa tomopterna*	27	KP122404
Fr. Guiana	14/04/2013	T2	N4°31'45.8" W52°09'05.6"	Near Patawa	309	FG2	G2.10	*Phyllomedusa tomopterna*	26	KP122413
Fr. Guiana	14/04/2013	T2	N4°31'45.8" W52°09'05.6"	Near Patawa	309	FG2	G2.11	*Phyllomedusa tomopterna*	25	KP122414
Fr. Guiana	14/04/2013	T2	N4°31'45.8" W52°09'05.6"	Near Patawa	309	FG2	G2.12	*Phyllomedusa tomopterna*	28/29	KP122415
Fr. Guiana	14/04/2013	T2	N4°31'45.8" W52°09'05.6"	Near Patawa	309	FG2	G2.13	*Phyllomedusa tomopterna*	28/29	KP122416
Fr. Guiana	04/2013	T3	N4°32'36.9" W52°9'08.1"	Patawa	177	FG3	G3.1	*Hypsiboas geographicus*	32	KP122417
Fr. Guiana	04/2013	T3	N4°32'36.9" W52°9'08.1"	Patawa	177	FG3	G3.2	*Hypsiboas geographicus*	25	KP122418
Fr. Guiana	04/2013	T3	N4°32'36.9" W52°9'08.1"	Patawa	177	FG3	G3.3	*Hypsiboas geographicus*	33	KP122419

Fr. Guiana	18/04/2013	T4	N5°16'41.2" W54°11'57.8"	Apatou-St Laurent	98	FG4	G4.1	*Phyllomedusa tomopterna*	35	KP122420
Fr. Guiana	18/04/2013	T4	N5°16'41.2" W54°11'57.8"	Apatou-St Laurent	98	FG4	G4.2	*Hypsiboas crepitans*	35	KP122427
Fr. Guiana	18/04/2013	T4	N5°16'41.2" W54°11'57.8"	Apatou-St Laurent	98	FG4	G4.3	*Phyllomedusa hypochondrialis*	38	KP122428
Fr. Guiana	18/04/2013	T4	N5°16'41.2" W54°11'57.8"	Apatou-St Laurent	98	FG4	G4.4	*Dendropsophus (Hyla) minutus (minuta)*	39	KP122439
Fr. Guiana	18/04/2013	T4	N5°16'41.2" W54°11'57.8"	Apatou-St Laurent	98	FG4	G4.5	*Dendropsophus (Hyla) minutus (minuta)*	30/31	KP122440
Fr. Guiana	18/04/2013	T5	N5°27'42.1" W53°53'11.1"	Near St Laurent	45	FG5	G5.1	*Dendropsophus (Hyla) minutus (minuta)*	35	KP122429
Fr. Guiana	18/04/2013	T5	N5°27'42.1" W53°53'11.1"	Near St Laurent	45	FG5	G5.2	*Dendropsophus (Hyla) minutus (minuta)*	39	KP122430
Fr. Guiana	18/04/2013	T5	N5°27'42.1" W53°53'11.1"	Near St Laurent	45	FG5	G5.3	*Dendropsophus (Hyla) minutus (minuta)*	37	KP122431

Fr. Guiana	18/04/2013	T5	N5°27'42.1" W53°53'11.1"	Near St Laurent	45	FG5	G5.4	*Dendropsophus (Hyla) minutus (minuta)*	31	KP122432
Fr. Guiana	18/04/2013	T5	N5°27'42.1" W53°53'11.1"	Near St Laurent	45	FG5	G5.5	*Dendropsophus (Hyla) minutus (minuta)*	29/30	KP122433
Fr. Guiana	18/04/2013	T5	N5°27'42.1" W53°53'11.1"	Near St Laurent	45	FG5	G5.6	*Dendropsophus (Hyla) minutus (minuta)*	26/27	KP122434
Fr. Guiana	18/04/2013	T5	N5°27'42.1" W53°53'11.1"	Near St Laurent	45	FG5	G5.7	*Dendropsophus (Hyla) minutus (minuta)*	41	KP122435
Fr. Guiana	18/04/2013	T5	N5°27'42.1" W53°53'11.1"	Near St Laurent	45	FG5	G5.8	*Dendropsophus (Hyla) minutus (minuta)*	34	KP122436
Fr. Guiana	18/04/2013	T5	N5°27'42.1" W53°53'11.1"	Near St Laurent	45	FG5	G5.9	*Dendropsophus (Hyla) minutus (minuta)*	41	KP122437
Fr. Guiana	18/04/2013	T5	N5°27'42.1" W53°53'11.1"	Near St Laurent	45	FG5	G5.10	*Dendropsophus (Hyla) minutus (minuta)*	31	KP122438
Fr. Guiana	23/04/2013	T6	N4°31'23.8" W52°6'36.8"	Patawa-Kaw	262	FG6	G6.1	*Scinax elaeochroa*	36/37	KP122441

Fr. Guiana	23/04/2013	T6	N4°31'23.8" W52°6'36.8"	Patawa-Kaw	262	FG6	G6.2	*Phyllomedusa tomopterna*	41	KP122421
Fr. Guiana	23/04/2013	T6	N4°31'23.8" W52°6'36.8"	Patawa-Kaw	262	FG6	G6.3	*Phyllomedusa tomopterna*	36	KP122422
Fr. Guiana	23/04/2013	T6	N4°31'23.8" W52°6'36.8"	Patawa-Kaw	262	FG6	G6.4	*Phyllomedusa tomopterna*	29/30	KP122423
Fr. Guiana	23/04/2013	T6	N4°31'23.8" W52°6'36.8"	Patawa-Kaw	262	FG6	G6.5	*Phyllomedusa tomopterna*	31	KP122424
Fr. Guiana	23/04/2013	T6	N4°31'23.8" W52°6'36.8"	Patawa-Kaw	262	FG6	G6.6	*Phyllomedusa tomopterna*	38	KP122425
Fr. Guiana	23/04/2013	T6	N4°31'23.8" W52°6'36.8"	Patawa-Kaw	262	FG6	G6.7	*Phyllomedusa tomopterna*	32/33	KP122426
Fr. Guiana	26/04/2013	T8	N4°32'30" W52°09'00"	Patawa	175	FG7	G8.1	*Hypsiboas geographicus*	37/38	KP122442
Fr. Guiana	26/04/2013	T8	N4°32'30" W52°09'00"	Patawa	175	FG7	G8.2	*Hypsiboas geographicus*	40	KP122450

Fr. Guiana	26/04/2013	T8	N4°32’30” W52°09’00”	Patawa	175	FG7	G8.3	*Hypsiboas geographicus*	40	KP122443
Fr. Guiana	26/04/2013	T8	N4°32’30” W52°09’00”	Patawa	175	FG7	G8.4	*Hypsiboas geographicus*	40	KP122444
Fr. Guiana	26/04/2013	T8	N4°32’30” W52°09’00”	Patawa	175	FG7	G8.5	*Hypsiboas geographicus*	38/39	KP122445
Fr. Guiana	26/04/2013	T8	N4°32’30” W52°09’00”	Patawa	175	FG7	G8.6	*Hypsiboas geographicus*	37/38	KP122446
Fr. Guiana	26/04/2013	T8	N4°32’30” W52°09’00”	Patawa	175	FG7	G8.7	*Hypsiboas geographicus*	37/38	KP122447
Fr. Guiana	26/04/2013	T8	N4°32’30” W52°09’00”	Patawa	175	FG7	G8.8	*Hypsiboas geographicus*	38/39	KP122448
Fr. Guiana	26/04/2013	T8	N4°32’30” W52°09’00”	Patawa	175	FG7	G8.9	*Hypsiboas geographicus*	38/39	KP122449
Fr. Guiana	26/04/2013	T8	N4°32’30” W52°09’00”	Patawa	175	FG7	G8.10	*Hypsiboas geographicus*	38/39	KP122451

Fr. Guiana	26/04/2013	T8	N4°32’30” W52°09’00”	Patawa	175	FG7	G8.11	*Hypsiboas geographicus*	38/39	KP122452
Fr. Guiana	17/04/2010	T1 - Patawa	N04°32’45” W52°09’01”	Small pool in drying out, rocky stream	220	FG8	T1.1	*Hypsiboas geographicus*	42	KP122373
Fr. Guiana	17/04/2010	T3 - Patawa	N04°32’45” W52°09’01”	Small pool in drying out, rocky stream	220	FG8	T3.1	*Hypsiboas geographicus*	25	KP122374
Fr. Guiana	17/04/2010	T3 - Patawa	N04°32’45” W52°09’01”	Small pool in drying out, rocky stream	220	FG8	T3.3	*Hypsiboas geographicus*	25	KP122375
Fr. Guiana	17/04/2010	T3 - Patawa	N04°32’45” W52°09’01”	Small pool in drying out, rocky stream	220	FG8	T3.4	*Hypsiboas geographicus*	25	KP122376
Fr. Guiana	17/04/2010	T3 - Patawa	N04°32’45” W52°09’01”	Small pool in drying out, rocky stream	220	FG8	T3.5	*Hypsiboas geographicus*	25	KP122377
Fr. Guiana	17/04/2010	T3 - Patawa	N04°32’45” W52°09’01”	Small pool in drying out, rocky stream	220	FG8	T3.6	*Hypsiboas geographicus*	25	KP122378
Fr. Guiana	17/04/2010	T3 - Patawa	N04°32’45” W52°09’01”	Small pool in drying out, rocky stream	220	FG8	T3.7	*Hypsiboas geographicus*	25	KP122379

Fr. Guiana	17/04/2010	T3 - Patawa	N04°32'45" W52°09'01"	Small pool in drying out, rocky stream	220	FG8	T3.8	*Hypsiboas geographicus*	25	KP122380
Fr. Guiana	17/04/2010	T3 - Patawa	N04°32'45" W52°09'01"	Small pool in drying out, rocky stream	220	FG8	T3.9	*Hypsiboas geographicus*	25	KP122381
Fr. Guiana	17/04/2010	T3 - Patawa	N04°32'45" W52°09'01"	Small pool in drying out, rocky stream	220	FG8	T3.10	*Hypsiboas geographicus*	25	KP122390
Fr. Guiana	17/04/2010	T3 - Patawa	N04°32'45" W52°09'01"	Small pool in drying out, rocky stream	220	FG8	T3.11	*Hypsiboas geographicus*	25	KP122391
Fr. Guiana	17/04/2010	T3 - Patawa	N04°32'45" W52°09'01"	Small pool in drying out, rocky stream	220	FG8	T3.12	*Hypsiboas geographicus*	25	KP122392
Fr. Guiana	17/04/2010	T3 - Patawa	N04°32'45" W52°09'01"	Small pool in drying out, rocky stream	220	FG8	T3.13	*Hypsiboas geographicus*	25	KP122393
Fr. Guiana	17/04/2010	T3 - Patawa	N04°32'45" W52°09'01"	Small pool in drying out, rocky stream	220	FG8	T3.14	*Hypsiboas geographicus*	25	KP122397
Fr. Guiana	17/04/2010	T4 - Patawa	N04°32'45" W52°09'01"	Small pool in drying out, rocky stream	220	FG8	T4.1	*Allobates femoralis*	28/29	KP122382

Fr. Guiana	17/04/2010	T5 - Patawa	N04°32'45" W52°09'01"	Small pool in drying out, rocky stream	220	FG8	T5.1	*Hyla helenae*	27	KP122383
Fr. Guiana	17/04/2010	T5 - Patawa	N04°32'45" W52°09'01"	Small pool in drying out, rocky stream	220	FG8	T5.2	*Hyla helenae*	25	KP122384
Fr. Guiana	17/04/2010	T5 - Patawa	N04°32'45" W52°09'01"	Small pool in drying out, rocky stream	220	FG8	T5.4	*Hyla helenae*	25	KP122385
Fr. Guiana	17/04/2010	T5 - Patawa	N04°32'45" W52°09'01"	Small pool in drying out, rocky stream	220	FG8	T5.5	*Hyla helenae*	25	KP122386
Fr. Guiana	17/04/2010	T5 - Patawa	N04°32'45" W52°09'01"	Small pool in drying out, rocky stream	220	FG8	T5.6	*Hyla helenae*	25	KP122398
Fr. Guiana	17/04/2010	T5 - Patawa	N04°32'45" W52°09'01"	Small pool in drying out, rocky stream	220	FG8	T5.8	*Hyla helenae*	25	KP122394
Fr. Guiana	17/04/2010	T5 - Patawa	N04°32'45" W52°09'01"	Small pool in drying out, rocky stream	220	FG8	T5.9	*Hyla helenae*	25	KP122395
Fr. Guiana	17/04/2010	T6 - Patawa	N04°32'45" W52°09'01"	Small pool in drying out, rocky stream	220	FG8	T6.2	*Phyllomedusa tomopterna*	26/27	KP122387

Fr. Guiana	17/04/2010	T6 - Patawa	N04°32’45” W52°09’01”	Small pool in drying out, rocky stream	220	FG8	T6.3	*Phyllomedusa tomopterna*	26/27	KP122388
Fr. Guiana	17/04/2010	T6 - Patawa	N04°32’45” W52°09’01”	Small pool in drying out, rocky stream	220	FG8	T6.4	*Phyllomedusa tomopterna*	26/27	KP122389
Fr. Guiana	17/04/2010	T6 - Patawa	N04°32’45” W52°09’01”	Small pool in drying out, rocky stream	220	FG8	T6.5	*Phyllomedusa tomopterna*	26/27	KP122396
Cameroon	18/09/2010	Near Tombel, SWP	N4°42'9.5" E9°38'20.1”	Marsh wetland surrounded by cocoa plantations	347	CM1	A1	*Xenopus tropicalis*	66*	KP122359
Cameroon	18/09/2010	Near Tombel, SWP	N4°42'9.5" E9°38'20.1”	Marsh wetland surrounded by cocoa plantations	347	CM1	A2	*Xenopus tropicalis*	66*	KP122358
Cameroon	18/09/2010	Near Tombel, SWP	N4°42'9.5" E9°38'20.1”	Marsh wetland surrounded by cocoa plantations	347	CM1	A3	*Xenopus tropicalis*	64*	KP122365
Cameroon	18/09/2010	Near Tombel, SWP	N4°42'9.5" E9°38'20.1”	Marsh wetland surrounded by cocoa plantations	347	CM1	A4	*Xenopus tropicalis*	64*	KP122366
Cameroon	27/07/2010	Lake Oku	N6°12’3.3” E10°27’2.6”	Lake	2225	CM2	A5	*Xenopus tropicalis*	53*	KP122367

Cameroon	28/07/2010	Lake Oku	N6°12'3.3" E10°27'2.6"	Lake	2225	CM2	A6	*Xenopus tropicalis*	52*	KP122368
Cameroon	29/07/2010	Lake Oku	N6°12'3.3" E10°27'2.6"	Lake	2225	CM2	A7	*Xenopus tropicalis*	55*	KP122369
Cameroon	25/05/2009	Lake Oku	N6°12'3.3" E10°27'2.6"	Lake	2225	CM3	A8	*Astylosternus schioetzi*	27	KP122370
Cameroon	17/04/2009	Lake Oku	N6°12'3.3" E10°27'2.6"	Lake	2225	CM4	A9	*Astylosternus schioetzi*	41	KP122371
Cameroon	17/04/2009	Lake Oku	N6°12'3.3" E10°27'2.6"	Lake	2225	CM4	A10	*Astylosternus schioetzi*	26	KP122372
Cameroon	31/05/2009	Ngashie-Oku	N6°14'19.9" E10°30'19.3"	Stream in small holder agriculture and eucalyptus plantation	1956	CM5	A13	*Astylosternus schioetzi*	25	KP122352
Cameroon	31/05/2009	Ngashie-Oku	N6°14'19.9" E10°30'19.3"	Stream in small-holder agriculture and eucalyptus plantation	1956	CM5	A16	*Astylosternus schioetzi*	ND	KP122354
Cameroon	18/05/2009	Mt. Oku	N6° 10'36.6" E10°30'1.8"	Stream in forest-grassland transition	2751	CM6	A14	*Phrynobatrachus steindachneri*	37/40	KP122353

Cameroon	26/08/2006	Anyafouma, NWR	N6°13’57.8” E10°25’13.5”	Stream in primary mountain forest	2481	CM7	A15	*Phrynobatrachus* sp.	31/34	KP122338
Cameroon	24/11/2008	Near Buea, Mt Cameroon	N4°10’30.6” E9°12’15.6”	Small stream in degraded forest	1840	CM8	A18	*Hyperolius riggenbachi*	25	KP122356
Cameroon	21/05/2009	Elemighong, NWR	N6°12’58.0” E10°23’37.6”	Abandoned fish pond	1793	CM9	A19	*Hyperolius riggenbachi*	27/28	KP122357
Cameroon	21/05/2009	Elemighong, NWR	N6°12’58.0” E10°23’37.6”	Abandoned fish pond	1793	CM9	A20	*Kassina maculosa*	27/28	KP122364
Cameroon	21/05/2009	Elemighong, NWR	N6°12’58.0” E10°23’37.6”	Abandoned fish pond	1793	CM9	A17	*Hyperolius riggenbachi*	25/26	KP122355
Cameroon	20-22/05/2009	Elemighong, NWR	N6°12’58” E10°23’37.6”	Abandoned fish pond	1793	CM9	A11	*Leptopelis vermiculatus*	37	KP122350
Cameroon	20-22/05/2009	Elemighong, NWR	N6°12’58” E10°23’37.6”	Abandoned fish pond	1793	CM9	A12	*Hyperolius lamottei*	38	KP122351
Cameroon	14/04/2012	Kakpenyi, Mamfe	N6°14’41.3” E9°31’31.6”	Small river next to village, c. 3m wide	420	CM10	A38	*Trichobatrachus robustus*	39/40	KP122507

Cameroon	14/04/2012	Kakpenyi, Mamfe	N6°14’41.3” E9°31’31.6”	Small river next to village, c. 3m wide	420	CM10	A48	*Trichobatrachus robustus*	39/40	KP122508
Cameroon	14/04/2012	Kakpenyi, Mamfe	N6°14’41.3” E9°31’31.6”	Small river next to village, c. 3m wide	420	CM10	A46	*Trichobatrachus robustus*	42	KP122506
Cameroon	16/04/2012	Makamune, Mamfe	N6°9’25.5” E9°31’1.6”	River in agricultural landscape, c. 5m wide	515	CM11	A53	*Hylarana (Amnirana) albolabris*	25	KP122519
Cameroon	18/04/2012	Tinta, Mamfe	N6°16’57.2” E9°30’47.7”	River in agricultural landscape	640	CM12	A47	*Hylarana (Amnirana) albolabris*	Unknown	KP122503
Cameroon	18/04/2012	Tinta, Mamfe	N6°16’57.2” E9°30’47.7”	River in agricultural landscape, c. 5m wide	640	CM12	A49	*Hylarana (Amnirana) albolabris*	Unknown	KP122504
Cameroon	18/04/2012	Tinta, Mamfe	N6°16’57.2” E9°30’47.7”	River in agricultural landscape, c. 5m wide	640	CM12	A50	*Hylarana (Amnirana) albolabris*	Unknown	KP122505
Cameroon	13/04/2012	Ote, Mamfe	N6°10’6.1” E9°30’25.5”	Very small stream in mixed forest/agriculture	164	CM13	A40	*Amietophrynus (Bufo) regularis*	27/28	KP122510
Cameroon	13/04/2012	Ote, Mamfe	N6°10’6.1” E9°30’25.5”	Very small stream in mixed forest/agriculture	164	CM13	A52	*Amietophrynus (Bufo) regularis*	32/33	KP122511

Cameroon	13/04/2012	Ote, Mamfe	N6°10'6.1" E9°30'25.5"	Very small stream in mixed forest/agriculture	164	CM13	A54	*Amietophrynus (Bufo) regularis*	25	KP122512
Cameroon	13/04/2012	Ote, Mamfe	N6°10'6.1" E9°30'25.5"	Very small stream in mixed forest/agriculture	164	CM13	A55	*Amietophrynus (Bufo) regularis*	36	KP122509
Cameroon	13/04/2012	Ote, Mamfe	N6°10'6.1" E9°30'25.5"	Very small stream in mixed forest/agriculture	164	CM13	A56	*Amietophrynus (Bufo) regularis*	29	KP122513
Cameroon	16/04/2012	Makamune, Mamfe	N6°9'25.5" E9°31'1.6"	River in agricultural landscape, c. 5m wide	515	CM14	A57	*Hylarana (Amnirana) albolabris*	39	KP122518
Cameroon	16/04/2012	Makamune, Mamfe	N6°9'25.5" E9°31'1.6"	River in agricultural landscape, c. 5m wide	515	CM14	A58	*Hylarana (Amnirana) albolabris*	37	KP122517
Cameroon	16/04/2012	Makamune, Mamfe	N6°9'25.5" E9°31'1.6"	River in agricultural landscape, c. 5m wide	515	CM14	A59	*Hylarana (Amnirana) albolabris*	25	KP122516
Cameroon	16/04/2012	Makamune, Mamfe	N6°9'25.5" E9°31'1.6"	River in agricultural landscape, c. 5m wide	515	CM14	A60	*Hylarana (Amnirana) albolabris*	39	KP122515
Cameroon	16/04/2012	Makamune, Mamfe	N6°9'25.5" E9°31'1.6"	River in agricultural landscape, c. 5m wide	515	CM14	A61	*Hylarana (Amnirana) albolabris*	25	KP122514

Tanzania	winter 1998	Udzungwa Kihanga	S8°22'24" E35°58'43"	Stream mountain, rain forest	1648	TZ1	A21	*Amietia (Afrana) angolensis*	25	KP122339
Tanzania	winter 1998	Udzungwa Kihanga	S8°22'24" E35°58'43"	Stream mountain, rain forest	1648	TZ1	A22	*Amietia (Afrana) angolensis*	25	KP122363
Tanzania	winter 1998	Udzungwa Kihanga	S8°22'24" E35°58'43"	Stream mountain, rain forest	1648	TZ1	A23	*Amietia (Afrana) angolensis*	25	KP122340
Tanzania	winter 1998	Udzungwa Kihanga	S8°22'24" E35°58'43"	Stream mountain, rain forest	1648	TZ1	A24	*Amietia (Afrana) angolensis*	25	KP122341
Tanzania	winter 1998	Udzungwa Kihanga	S8°22'24" E35°58'43"	Stream mountain, rain forest	1648	TZ1	A25	*Leptopelis barbouri*	25	KP122342
Tanzania	winter 1998	Udzungwa Kihanga	S8°22'24" E35°58'43"	Stream mountain, rain forest	1648	TZ1	A26	*Leptopelis barbouri*	25	KP122361
Tanzania	winter 1998	Udzungwa Kihanga	S8°22'24" E35°58'43"	Stream mountain, rain forest	1648	TZ1	A27	*Leptopelis barbouri*	25	KP122343
Tanzania	winter 1998	Udzungwa Kihanga	S8°22'24" E35°58'43"	Stream mountain, rain forest	1648	TZ1	A28	*Leptopelis barbouri*	42	KP122362

Tanzania	winter 1998	Udzung wa Kihanga	S8°22'24" E35°58'43"	Stream mountain, rain forest	1648	TZ1	A29	*Leptopelis barbouri*	41	KP122344
Tanzania	winter 1998	Udzung wa Kihanga	S8°22'24" E35°58'43"	Stream mountain, rain forest	1648	TZ1	A30	*Leptopelis barbouri*	41	KP122360
Tanzania	winter 1998	Udzung wa Kihanga	S8°22'24" E35°58'43"	Stream mountain, rain forest	1648	TZ1	A31	*Leptopelis* sp.	25/26	KP122345
Tanzania	winter 1998	Udzung wa Kihanga	S8°22'24" E35°58'43"	Stream mountain, rain forest	1648	TZ1	A32	*Leptopelis* sp.	25/26	KP122346
Tanzania	winter 1998	Udzung wa Kihanga	S8°22'24" E35°58'43"	Stream mountain, rain forest	1648	TZ1	A33	*Leptopelis* sp.	25/26	KP122347
Tanzania	winter 1998	Udzung wa Kihanga	S8°22'24" E35°58'43"	Stream mountain, rain forest	1648	TZ1	A34	*Leptopelis* sp.	25/26	KP122348
Tanzania	winter 1998	Udzung wa Kihanga	S8°22'24" E35°58'43"	Stream mountain, rain forest	1648	TZ1	A35	*Leptopelis barbouri*	28/29	KP122349
São Tomé	30-31/10/2011	Bom Sucesso,	N00°17′19.44″ E06°36′44.88″	Puddle on the road in front of botanic gardens	1153	ST1	CZ1.1	*Phrynobatrachus dispar*	<30	KP122497

São Tomé	30-31/10/2011	Bom Sucesso	N00°17′19.44″ E06°36′44.88″	Puddle on the road in front of botanic gardens	1153	ST1	CZ1.2	*Phrynobatrachus dispar*	<28	KP122498
São Tomé	30-31/10/2011	Bom Sucesso	N00°17′19.44″ E06°36′44.88″	Puddle on the road in front of botanic gardens	1153	ST1	CZ1.3	*Phrynobatrachus dispar*	<30	KP122499
São Tomé	30-31/10/2011	Bom Sucesso	N00°17′19.44″ E06°36′44.88″	Puddle on the road in front of botanic gardens	1153	ST1	CZ1.4	*Phrynobatrachus dispar*	<28	KP122500
Czech Rep.	2003-2005	Šnejdlík pond, Vrbenské rybníky, Č. Budějovice	N49°00′20″ E14°25′04″		381	CZ1	CZ2	*Pelophylax (Rana) ridibundus*	<39	KP122502
Czech Rep.	2003-2005	Šnejdlík pond, Vrbenské rybníky, Č. Budějovice	N49°00′20″ E14°25′04″		381	CZ1	CZ3	*Pelophylax (Rana) ridibundus*	<25	KP122501
Czech Rep.	25/06/2004	Zaječí potok, Brno	N49°14'15" E16°36'23"		300	CZ2	NemE1	*Rana temporaria*	ND	KP122493
Czech Rep.	25/06/2004	Zaječí potok, Brno	N49°14'15" E16°36'23"		300	CZ2	NemE2	*Rana temporaria*	ND	KP122494

Czech Rep.	25/06/2004	Zaječí potok, Brno	N49°14'15" E16°36'23"	300	CZ2	NemE3	*Rana temporaria*	ND	KP122495
Czech Rep.	15/07/2004	Zaječí potok, Brno	N49°14'15" E16°36'23"	300	CZ3	NemE4	*Hyla arborea*	ND	KP122496
UK	2/05/2013	NHM pond, Cromwell road, London, UK	N51°29’45” W0°10’42”	17	UK1	NHM1	*Bufo bufo*	29/30	KP122453
UK	2/05/2013	NHM pond, Cromwell road, London, UK	N51°29’45” W0°10’42”	17	UK1	NHM2	*Bufo bufo*	29/30	KP122454
UK	2/05/2013	NHM pond, Cromwell road, London, UK	N51°29’45” W0°10’42”	17	UK1	NHM3	*Bufo bufo*	29/30	KP122455
UK	2/05/2013	NHM pond, Cromwell road, London, UK	N51°29’45” W0°10’42”	17	UK1	NHM4	*Bufo bufo*	29/30	KP122456
UK	2/05/2013	NHM pond, Cromwell road, London, UK	N51°29’45” W0°10’42”	17	UK1	NHM5	*Rana temporaria*	29/30	KP122469

UK	2/05/2013	NHM pond, Cromwell road, London, UK	N51°29'45" W0°10'42"	17	UK1	NHM6	*Rana temporaria*	29/30	KP122470
UK	2/05/2013	NHM pond, Cromwell road, London, UK	N51°29'45" W0°10'42"	17	UK1	NHM7	*Rana temporaria*	29/30	KP122471
UK	2/05/2013	NHM pond, Cromwell road, London, UK	N51°29'45" W0°10'42"	17	UK1	NHM8	*Rana temporaria*	29/30	KP122472
UK	2/05/2013	NHM pond, Cromwell road, London, UK	N51°29'45" W0°10'42"	17	UK1	NHM9	*Bufo bufo*	29/30	KP122457
UK	15/05/2013	NHM pond, Cromwell road, London, UK	N51°29'45" W0°10'42"	17	UK2	NHM16	*Bufo bufo*	30/31	KP122458
UK	15/05/2013	NHM pond, Cromwell road, London, UK	N51°29'45" W0°10'42"	17	UK2	NHM17	*Bufo bufo*	30/31	KP122459
UK	15/05/2013	NHM pond, Cromwell road, London,	N51°29'45" W0°10'42"	17	UK2	NHM18	*Bufo bufo*	30/31	KP122460

		UK							
UK	15/05/2013	NHM pond, Cromwell road, London, UK	N51°29’45” W0°10’42”	17	UK2	NHM19	*Bufo bufo*	30/31	KP122461
UK	15/05/2013	NHM pond, Cromwell road, London, UK	N51°29’45” W0°10’42”	17	UK2	NHM20	*Bufo bufo*	30/31	KP122462
UK	15/05/2013	NHM pond, Cromwell road, London, UK	N51°29’45” W0°10’42”	17	UK2	NHM21	*Bufo bufo*	30/31	KP122463
UK	15/05/2013	NHM pond, Cromwell road, London, UK	N51°29’45” W0°10’42”	17	UK2	NHM22	*Bufo bufo*	30/31	KP122464
UK	15/05/2013	NHM pond, Cromwell road, London, UK	N51°29’45” W0°10’42”	17	UK2	NHM23	*Bufo bufo*	30/31	KP122465
UK	15/05/2013	NHM pond, Cromwell road, London, UK	N51°29’45” W0°10’42”	17	UK2	NHM24	*Bufo bufo*	30/31	KP122466

UK	15/05/2013	NHM pond, Cromwell road, London, UK	N51°29’45” W0°10’42”	17	UK2	NHM25	*Bufo bufo*	30/31	KP122467
UK	15/05/2013	NHM pond, Cromwell road, London, UK	N51°29’45” W0°10’42”	17	UK2	NHM26	*Bufo bufo*	30/31	KP122468
UK	1/05/2013	Sevenoaks pond London, UK	N51°16’14.5” E0°11’22.1”	184	UK3	SL1	*Rana temporaria*	24	KP122474
UK	1/05/2013	Sevenoaks pond, Kent, UK	N51°16’14.5” E0°11’22.1”	184	UK3	SL2	*Rana temporaria*	24	KP122475
UK	1/05/2013	Sevenoaks pond, Kent, UK	N51°16’14.5” E0°11’22.1”	184	UK3	SL3	*Rana temporaria*	24	KP122476
UK	1/05/2013	Sevenoaks pond, Kent, UK	N51°16’14.5” E0°11’22.1”	184	UK3	SL4	*Rana temporaria*	24	KP122477
UK	1/05/2013	Sevenoaks pond, Kent, UK	N51°16’14.5” E0°11’22.1”	184	UK3	SL5	*Rana temporaria*	24	KP122478
UK	1/05/2013	Sevenoaks pond, Kent, UK	N51°16’14.5” E0°11’22.1”	184	UK3	SL6	*Rana temporaria*	24	KP122479

UK	1/05/2013	Sevenoaks pond, Kent, UK	N51°16’14.5” E0°11’22.1”	184	UK3	SL7	*Rana temporaria*	33	KP122480
UK	15/05/2013	Sevenoaks pond, Kent, UK	N51°16’14.5” E0°11’22.1”	184	UK4	SL8	*Rana temporaria*	32	KP122481
UK	15/05/2013	Sevenoaks pond, Kent, UK	N51°16’14.5” E0°11’22.1”	184	UK4	SL9	*Rana temporaria*	32	KP122482
UK	15/05/2013	Sevenoaks pond, Kent, UK	N51°16’14.5” E0°11’22.1”	184	UK4	SL10	*Rana temporaria*	30	KP122473
UK	15/05/2013	Sevenoaks pond, Kent, UK	N51°16’14.5” E0°11’22.1”	184	UK4	SL11	*Rana temporaria*	31	KP122483
UK	08/07/2013	Sevenoaks pond, Kent, UK	N51°16’14.5” E0°11’22.1”	184	UK5	SL12	*Rana temporaria*	37	KP122484
UK	08/07/2013	Sevenoaks pond, Kent, UK	N51°16’14.5” E0°11’22.1”	184	UK5	SL13	*Rana temporaria*	34	KP122485
UK	08/07/2013	Sevenoaks pond, Kent, UK	N51°16’14.5” E0°11’22.1”	184	UK5	SL14	*Rana temporaria*	38	KP122486

UK	08/07/2013	Sevenoaks pond, Kent, UK	N51°16’14.5” E0°11’22.1”	184	UK5	SL15	*Rana temporaria*	32	KP122487
UK	08/07/2013	Sevenoaks pond, Kent, UK	N51°16’14.5” E0°11’22.1”	184	UK5	SL16	*Rana temporaria*	38	KP122488
UK	08/07/2013	Sevenoaks pond, Kent, UK	N51°16’14.5” E0°11’22.1”	184	UK5	SL17	*Rana temporaria*	32	KP122489
UK	08/07/2013	Sevenoaks pond, Kent, UK	N51°16’14.5” E0°11’22.1”	184	UK5	SL18	*Rana temporaria*	30	KP122490
UK	08/07/2013	Sevenoaks pond, Kent, UK	N51°16’14.5” E0°11’22.1”	184	UK5	SL19	*Rana temporaria*	31	KP122491
UK	08/07/2013	Sevenoaks pond, Kent, UK	N51°16’14.5” E0°11’22.1”	184	UK5	SL20	*Rana temporaria*	39	KP122492

Supplementary Table S6: Label information for each NAG01 targeted clone library sequence recovered from the frog liver sampled.

Country	Year	Frog sample number	Clones double strand sequenced	NCBI accession number
Cameroon	2009	A11	A11.2	KP122697
			A11.3	KP122709
			A11.4	KP122632
			A11.5	KP122706
			A11.6	KP122704
Cameroon	2009	A12	A12.1	KP122715
			A12.3	KP122633
			A12.4	KP122634
			A12.6	KP122584
Cameroon	2009	A13	A13.1	KP122618
			A13.2	KP122648
			A13.3	KP122626
			A13.5	KP122730
			A13.6	KP122638
Cameroon	2009	A14	A14.7	KP122667
			A14.4	KP122635
			A14.9	KP122619
			A14.10	KP122700
			A14.5	KP122692
Cameroon	2006	A15	A15.8	KP122605
			A15.9	KP122570
			A15.2	KP122599
			A15.3	KP122582
			A15.4	KP122642

			A15.5	KP122643
Cameroon	2009	A16	A16.6	KP122629
			A16.1	KP122649
			A16.3	KP122575
			A16.4	KP122574
			A16.5	KP122650
Cameroon	2009	A17	A17.7	KP122724
			A17.4	KP122726
			A17.1	KP122639
			A17.2	KP122573
			A17.3	KP122651
Cameroon	2008	A18	A18.11	KP122646
			A18.8	KP122592
			A18.9	KP122711
			A18.5	KP122658
			A18.10	KP122659
Cameroon	2009	A19	A19.11	KP122729
			A19.2	KP122572
			A19.5	KP122660
			A19.4	KP122661
			A19.10	KP122590
Cameroon	2009	A20	A20.6	KP122622
			A20.7	KP122600
			A20.1	KP122662
			A20.2	KP122588
			A20.5	KP122663
Cameroon	2012	A38	A38.1	KP122586
			A38.2	KP122628

			A38.6	KP122744
			A38.8	KP122743
Cameroon	2012	A55	A55.1	KP122675
			A55.2	KP122674
			A55.3	KP122676
			A55.4	KP122693
Cameroon	2012	A54	A54.2	KP122733
			A54.7	KP122677
			A54.8	KP122735
			A54.14	KP122678
Tanzania	1998	A21	A21.1	KP122637
			A21.2	KP122654
			A21.3	KP122684
			A21.4	KP122656
			A21.5	KP122617
Tanzania	1998	A22	A22.1	KP122601
			A22.2	KP122680
			A22.3	KP122623
			A22.4	KP122580
			A22.5	KP122721
Tanzania	1998	A23	A23.1	KP122699
			A23.2	KP122719
			A23.4	KP122596
			A23.5	KP122686
			A23.6	KP122717
Tanzania	1998	A24	A24.4	KP122640
			A24.3	KP122595
			A24.5	KP122723

			A24.6	KP122641
			A24.7	KP122594
Tanzania	1998	A25	A25.2	KP122625
			A25.3	KP122666
			A25.4	KP122620
			A25.5	KP122687
			A25.6	KP122630
Tanzania	1998	A26	A26.1	KP122657
			A26.2	KP122606
			A26.3	KP122645
			A26.5	KP122689
			A26.4	KP122688
Tanzania	1998	A27	A27.3	KP122691
			A27.4	KP122597
			A27.5	KP122728
			A27.8	KP122631
			A27.9	KP122710
Tanzania	1998	A28	A28.2	KP122621
			A28.4	KP122603
			A28.5	KP122602
			A28.7	KP122636
			A28.9	KP122644
Tanzania	1998	A30	A30.1	KP122701
			A30.5	KP122670
			A30.6	KP122669
			A30.7	KP122668
			A30.8	KP122702
Tanzania	1998	A31	A31.3	KP122653

			A31.5	KP122683
			A31.7	KP122679
			A31.8	KP122652
			A31.10	KP122665
Tanzania	1998	A32	A32.1	KP122690
			A32.2	KP122614
			A32.3	KP122703
			A32.4	KP122698
			A32.5	KP122579
Tanzania	1998	A33	A33.5	KP122607
			A33.4	KP122608
			A33.6	KP122609
			A33.7	KP122610
			A33.10	KP122611
Tanzania	1998	A34	A34.1	KP122713
			A34.4	KP122694
			A34.5	KP122593
			A34.6	KP122695
			A34.7	KP122696
Tanzania	1998	A35	A35.3	KP122672
			A35.5	KP122578
			A35.7	KP122671
			A35.8	KP122576
			A35.10	KP122577
Fr. Guiana	2010	T3.6	T3.6.1	KP122571
			T3.6.2	KP122712
			T3.6.3	KP122681
			T3.6.4	KP122598

			T3.6.5	KP122655
Fr. Guiana	2010	T5.1	T5.1.4	KP122581
			T5.1.13	KP122604
			T5.1.9	KP122612
			T5.1.10	KP122613
Fr. Guiana	2013	G2.13	G2.13_A4	KP122725
			G2.13_C4	KP122727
			G2.13_D4	KP122747
			G2.13_E4	KP122714
Fr. Guiana	2013	G8.1	G8.1_A3	KP122647
			G8.1_B3	KP122616
			G8.1_C3	KP122746
			G8.1_E3	KP122682
São Tomé	2011	CZ1.1	CZ1.1_A1	KP122731
			CZ1.1_B1	KP122627
			CZ1.1_C1	KP122734
			CZ1.1_D1	KP122740
São Tomé	2011	CZ1.2	CZ1.2_A2	KP122738
			CZ1.2_B2	KP122736
			CZ1.2_C2	KP122673
			CZ1.2_D2	KP122737
São Tomé	2011	CZ1.3	CZ1.3_A3	KP122732
			CZ1.3_B3	KP122708
			CZ1.3_D3	KP122707
			CZ1.3_F3	KP122745
São Tomé	2011	CZ1.4	CZ1.4_A4	KP122741
			CZ1.4_B4	KP122739
			CZ1.4_C4	KP122742

			CZ1.4_D4	KP122747
London, UK	2013	SL10	SL10_A1	KP122591
			SL10_F1	KP122589
			SL10_G1	KP122587
			SL10_H1	KP122685
London, UK	2013	SL18	SL18.1	KP122585
			SL18.2	KP122722
			SL18.3	KP122705
			Sl18.4	KP122716
NHM pond, London, UK	2013	NHM16	NHM16.1	KP122720
			NHM16.4	KP122718
			NHM16.5	KP122583
			NHM16.7	KP122624

Supplementary Table S7: Details of published 18S rDNA sequences of known taxa used in phylogenetic analysis reported in Figure 1.

Accession no.	Class	Order	Genus	Species	Strain/Clone	Reference
EF675616	Perkinsea	Perkinsida	*	*	*Lithobates sphenocephalus* pathogen	(1)
AF126013	Perkinsea	Perkinsida	*Perkinsus*	*marinus*	Isolate P1	(20)
AF497479	Perkinsea	Perkinsida	*Perkinsus*	*marinus*	TXsc	(21)
AY486141	Perkinsea	Perkinsida	*Perkinsus*	*mediterraneus*	isolate 4	(22)
AF509333	Perkinsea	Perkinsida	*Perkinsus*	*atlanticus*	ALG1	(23)
AF140295	Perkinsea	Perkinsida	*Perkinsus*	*atlanticus*	Galicia	(24)
AY486139	Perkinsea	Perkinsida	*Perkinsus*	*mediterraneus*	isolate 1	(22)
AF252288	Perkinsea	Perkinsida	*Perkinsus*	*	CCA2001	(25)
AY305326	Perkinsea	Perkinsida	*Perkinsus*	*andrewsi*	ATCC 50807	(26)
AF042707	Perkinsea	Perkinsida	*Perkinsus*	sp.	G117	(20)
AY487831	Perkinsea	Perkinsida	*Perkinsus*	*mediterraneus*	Isolate 5	(22)
AF102171	Perkinsea	Perkinsida	*Perkinsus*	*andrewsi*		(25)
AF133909	Perkinsea	Perkinsida	*Parvilucifera*	*infectans*		(27)
FJ424512	Perkinsea	Perkinsida	*Parvilucifera*	*prorocentri*		(28)
KF359483	Perkinsea	Perkinsida	*Parvilucifera*	*rostrata*		(29)

EU502912	Perkinsea	Perkinsida	*Parvilucifera*	*sinerae*		(30)
HM483394	Syndiniales	Amoebophryaceae	*Amoebophrya*	sp.	ex *Gymnodinium instriatum*	(31)
HM483395	Syndiniales	Amoebophryaceae	*Amoebophrya*	sp.	ex *Akashiwo sanguineaum*	(31)
HQ658161	Syndiniales	Amoebophryaceae	*Amoebophrya*	sp.	RCC1626	(32)
AF472555	Syndiniales	Amoebophryaceae	*Amoebophrya*	sp.	ex *Akashiwo sanguineaum*	(33)
AY208894	Syndiniales	Amoebophryaceae	*Amoebophrya*	sp.	ex *Scrippsiella sp.*	John *et al.* unpublished

Supplementary Table S8: Table of first hit of the BLASTn results of the amphibian 16S sequence using Mega BLAST.
(NCBI- accessed October 2014).

Tadpole Id	Query Id	% Identity	Length	E value	Accession number	NCBI definition
A15	16S_A15	100	516	0	FJ769103	*Phrynobatrachus* sp. BMZ-2009 voucher MCZ
A21	16S_A21	97.83	554	0	DQ347318	*Afrana angolensis* isolate 0992
A23	16S_A23	97.65	554	0	DQ347318	*Afrana angolensis* isolate 0992
A24	16S_A24	97.65	554	0	DQ347318	*Afrana angolensis* isolate 0992
A25	16S_A25	92.52	535	0	JX996027	*Leptopelis barbouri* voucher CAS:168472
A27	16S_A27	92.52	535	0	JX996027	*Leptopelis barbouri* voucher CAS:168472
A29	16S_A29	92.52	535	0	JX996027	*Leptopelis barbouri* voucher CAS:168472
A31	16S_A31	97.84	555	0	DQ283161	*Leptopelis* sp. AMNH A168408
A32	16S_A32	97.84	555	0	DQ283161	*Leptopelis* sp. AMNH A168408
A33	16S_A33	97.84	555	0	DQ283161	*Leptopelis* sp. AMNH A168408
A34	16S_A34	97.84	555	0	DQ283161	*Leptopelis* sp. AMNH A168408
A35	16S_A35	92.51	534	0	JX996027	*Leptopelis barbouri* voucher CAS:168472
A11	16S_A11	95.67	554	0	JX564875	*Leptopelis vermiculatus*
A12	16S_A12	92.12	533	0	FJ594083	*Hyperolius lamottei*
A13	16S_A13	96.95	557	0	DQ283349	*Astylosternus schioetzi* voucher UTA 52398
A14	16S_A14	99.63	537	0	HM441260	*Phrynobatrachus steindachneri* voucher MCZ A-138080
A16	16S_A16	97.13	557	0	DQ283349	*Astylosternus schioetzi* voucher UTA-52398
A17	16S_A17	100	503	0	GU443976	*Hyperolius riggenbachi* isolate MVZ234752
A18	16S_A18	100	503	0	GU443976	*Hyperolius riggenbachi* isolate MVZ234752
A19	16S_A19	100	503	0	GU443976	*Hyperolius riggenbachi* isolate MVZ234752
A2	16S_A2	98.45	582	0	AY789013	*Xenopus tropicalis*
A1	16S_A1	98.45	582	0	AY789013	*Xenopus tropicalis*
A30	16S_A30	92.52	535	0	JX996027	*Leptopelis barbouri* voucher CAS:168472
A26	16S_A26	92.52	535	0	JX996027	*Leptopelis barbouri* voucher CAS:168472
A28	16S_A28	92.51	534	0	JX996027	*Leptopelis barbouri* voucher CAS:168472
A22	16S_A22	97.83	554	0	DQ347318	*Afrana angolensis* isolate 0992
A20	16S_A20	98.67	527	0	KF178891	*Kassina maculosa* voucher MCZ:A-147846

A3	16S_A3	98.45	582	0	AY789013	*Xenopus tropicalis*
A4	16S_A4	98.45	582	0	AY789013	Xenopus tropicalis
A5	16S_A5	98.11	581	0	DQ283363	*Xenopus (Silurana) tropicalis* voucher UTA A47158
A6	16S_A6	98.11	581	0	DQ283363	*Xenopus (Silurana) tropicalis* voucher UTA A47158
A7	16S_A7	98.11	581	0	DQ283363	*Xenopus (Silurana) tropicalis* voucher UTA A47158
A8	16S_A8	96.98	530	0	AF124108	*Astylosternus schioetzi*
A9	16S_A9	96.98	530	0	AF124108	*Astylosternus schioetzi*
A10	16S_A10	96.98	530	0	AF124108	*Astylosternus schioetzi*
T1.1	16S_T1.1	99.64	560	0	AY843628	*Hypsiboas geographicus*
T3.1	16S_T3.1	99.64	560	0	AY843628	*Hypsiboas geographicus*
T3.3	16S_T3.3	99.64	560	0	AY843628	*Hypsiboas geographicus*
T3.4	16S_T3.4	99.64	560	0	AY843628	*Hypsiboas geographicus*
T3.5	16S_T3.5	99.64	560	0	AY843628	*Hypsiboas geographicus*
T3.6	16S_T3.6	99.64	560	0	AY843628	*Hypsiboas geographicus*
T3.7	16S_T3.7	99.64	560	0	AY843628	*Hypsiboas geographicus*
T3.8	16S_T3.8	99.64	560	0	AY843628	*Hypsiboas geographicus*
T3.9	16S_T3.9	99.64	560	0	AY843628	*Hypsiboas geographicus*
T4.1	16S_T4.1	100	560	0	DQ502246	*Allobates femoralis* isolate 1325
T5.1	16S_T5.1	99.83	572	0	KF002053	*Hyla helenae* voucher MHNLS 20151
T5.2	16S_T5.2	100	571	0	KF002053	*Hyla helenae* voucher MHNLS 20151
T5.4	16S_T5.4	99.83	572	0	KF002053	*Hyla helenae* voucher MHNLS 20151
T5.5	16S_T5.5	100	571	0	KF002053	*Hyla helenae* voucher MHNLS 20151
T6.2	16S_T6.2	99.47	568	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451
T6.3	16S_T6.3	99.47	568	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451
T6.4	16S_T6.4	99.47	568	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451
T3.10	T3.10_16S	99.46	560	0	AY843628	*Hypsiboas geographicus*
T3.11	T3.11_16S	99.46	560	0	AY843628	*Hypsiboas geographicus*
T3.12	T3.12_16S	99.64	560	0	AY843628	*Hypsiboas geographicus*
T3.13	T3.13_16S	99.64	560	0	AY843628	*Hypsiboas geographicus*
T5.8	T5.8_16S	100	571	0	KF002053	*Hyla helenae* voucher MHNLS 20151
T5.9	T5.9_16S	100	571	0	KF002053	*Hyla helenae* voucher MHNLS 20151
T6.5	T6.5_16S	98.94	568	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451

T3.14	T3.14_16S	99.64	560	0	AY843628	*Hypsiboas geographicus*
T5.6	T5.6_16S	100	571	0	KF002053	*Hyla helenae* voucher MHNLS 20151
G1.1	G1.1_16S	96.07	585	0	EF632056	*Leptodactylus knudseni* voucher QCAZ 13244
G1.2	G1.2_16S	96.07	585	0	EF632056	*Leptodactylus knudseni* voucher QCAZ 13244
G1.3	G1.3_16S	96.07	585	0	EF632056	*Leptodactylus knudseni* voucher QCAZ 13244
G1.4	G1.4_16S	96.07	585	0	EF632056	*Leptodactylus knudseni* voucher QCAZ 13244
G1.5	G1.5_16S	98.13	587	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451
G2.9	G2.9_16S	98.29	586	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451
G2.1	G2.1_16S	98.29	586	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451
G2.2	G2.2_16S	98.29	586	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451
G2.3	G2.3_16S	98.29	586	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451
G2.4	G2.4_16S	98.29	586	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451
G2.5	G2.5_16S	98.29	586	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451
G2.6	G2.6_16S	98.29	586	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451
G2.7	G2.7_16S	98.29	586	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451
G2.8	G2.8_16S	98.29	586	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451
G2.10	G2.10_16S	98.29	586	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451
G2.11	G2.11_16S	98.29	586	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451
G2.12	G2.12_16S	98.29	586	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451
G2.13	G2.13_16S	98.29	586	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451
G3.1	G3.1_16S	95.82	550	0	JF790119	*Hypsiboas geographicus* A isolate AS0175
G3.2	G3.2_16S	95.82	550	0	JF790119	*Hypsiboas geographicus* A isolate AS0175
G3.3	G3.3_16S	95.82	550	0	JF790119	*Hypsiboas geographicus* A isolate AS0175
G4.1	G4.1_16S	98.29	586	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451
G6.2	G6.2_16S	98.29	586	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451
G6.3	G6.3_16S	98.29	586	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451
G6.4	G6.4_16S	98.29	586	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451
G6.5	G6.5_16S	98.29	586	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451
G6.6	G6.6_16S	98.29	586	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451
G6.7	G6.7_16S	98.29	586	0	GQ366286	*Phyllomedusa tomopterna* voucher CFBH 2451
G4.2	G4.2_16S	99.64	559	0	JN970655	*Hypsiboas crepitans* isolate ROM_44089
G4.3	G4.3_16S	99.66	584	0	AY843724	*Phyllomedusa hypochondrialis*

G5.1	G5.1_16S	93.41	592	0	AY549345	*Hyla minuta* voucher MACN 33799
G5.2	G5.2_16S	93.41	592	0	AY549345	*Hyla minuta* voucher MACN 33799
G5.3	G5.3_16S	93.41	592	0	AY549345	*Hyla minuta* voucher MACN 33799
G5.4	G5.4_16S	93.41	592	0	AY549345	*Hyla minuta* voucher MACN 33799
G5.5	G5.5_16S	93.41	592	0	AY549345	*Hyla minuta* voucher MACN 33799
G5.6	G5.6_16S	93.41	592	0	AY549345	*Hyla minuta* voucher MACN 33799
G5.7	G5.7_16S	93.41	592	0	AY549345	*Hyla minuta* voucher MACN 33799
G5.8	G5.8_16S	93.41	592	0	AY549345	*Hyla minuta* voucher MACN 33799
G5.9	G5.9_16S	93.41	592	0	AY549345	*Hyla minuta* voucher MACN 33799
G5.10	G5.10_16S	93.41	592	0	AY549345	*Hyla minuta* voucher MACN 33799
G4.4	G4.4_16S	93.41	592	0	AY549345	*Hyla minuta* voucher MACN 33799
G4.5	G4.5_16S	93.41	592	0	AY549345	*Hyla minuta* voucher MACN 33799
G6.1	G6.1_16S	90.13	598	0	AY843757	*Scinax elaeochroa*
G8.1	G8.1_16S	95.82	550	0	JF790119	*Hypsiboas geographicus* A isolate AS0175
G8.3	G8.3_16S	95.82	550	0	JF790119	*Hypsiboas geographicus* A isolate AS0175
G8.4	G8.4_16S	95.82	550	0	JF790119	*Hypsiboas geographicus* A isolate AS0175
G8.5	G8.5_16S	95.82	550	0	JF790119	*Hypsiboas geographicus* A isolate AS0175
G8.6	G8.6_16S	95.82	550	0	JF790119	*Hypsiboas geographicus* A isolate AS0175
G8.7	G8.7_16S	95.82	550	0	JF790119	*Hypsiboas geographicus* A isolate AS0175
G8.8	G8.8_16S	95.82	550	0	JF790119	*Hypsiboas geographicus* A isolate AS0175
G8.9	G8.9_16S	95.82	550	0	JF790119	*Hypsiboas geographicus* A isolate AS0175
G8.2	G8.2_16S	95.82	550	0	JF790119	*Hypsiboas geographicus* A isolate AS0175
G8.10	G8.10_16S	95.82	550	0	JF790119	*Hypsiboas geographicus* A isolate AS0175
G8.11	G8.11_16S	95.82	550	0	JF790119	*Hypsiboas geographicus* A isolate AS0175
NHM1	NHM1_16S	99.5	596	0	AY840246	*Bufo bufo* isolate karasu
NHM2	NHM2_16S	99.5	596	0	AY840246	*Bufo bufo* isolate karasu
NHM3	NHM3_16S	99.5	596	0	AY840246	*Bufo bufo* isolate karasu
NHM4	NHM4_16S	99.5	596	0	AY840246	*Bufo bufo* isolate karasu
NHM9	NHM9_16S	99.5	596	0	AY840246	*Bufo bufo* isolate karasu
NHM16	NHM16_16S	99.5	596	0	AY840246	*Bufo bufo* isolate karasu
NHM17	NHM17_16S	99.5	596	0	AY840246	*Bufo bufo* isolate karasu
NHM18	NHM18_16S	99.5	596	0	AY840246	*Bufo bufo* isolate karasu

NHM19	NHM19_16S	99.5	596	0	AY840246	*Bufo bufo* isolate karasu
NHM20	NHM20_16S	99.5	596	0	AY840246	*Bufo bufo* isolate karasu
NHM21	NHM21_16S	99.5	596	0	AY840246	*Bufo bufo* isolate karasu
NHM22	NHM22_16S	99.5	596	0	AY840246	*Bufo bufo* isolate karasu
NHM23	NHM23_16S	99.5	596	0	AY840246	*Bufo bufo* isolate karasu
NHM24	NHM24_16S	99.5	596	0	AY840246	*Bufo bufo* isolate karasu
NHM25	NHM25_16S	99.5	596	0	AY840246	*Bufo bufo* isolate karasu
NHM26	NHM26_16S	99.5	596	0	AY840246	*Bufo bufo* isolate karasu
NHM5	NHM5_16S	99.65	572	0	DQ283129	*Rana temporaria* voucher ZSM 762/2000
NHM6	NHM6_16S	99.65	572	0	DQ283129	*Rana temporaria* voucher ZSM 762/2000
NHM7	NHM7_16S	99.65	572	0	DQ283129	*Rana temporaria* voucher ZSM 762/2000
NHM8	NHM8_16S	99.65	572	0	DQ283129	*Rana temporaria* voucher ZSM 762/2000
SL10	SL10_16S	99.65	572	0	DQ283129	*Rana temporaria* voucher ZSM 762/2000
SL1	SL1_16S	99.65	572	0	DQ283129	*Rana temporaria* voucher ZSM 762/2000
SL2	SL2_16S	99.65	572	0	DQ283129	*Rana temporaria* voucher ZSM 762/2000
SL3	SL3_16S	99.65	572	0	DQ283129	*Rana temporaria* voucher ZSM 762/2000
SL4	SL4_16S	99.65	572	0	DQ283129	*Rana temporaria* voucher ZSM 762/2000
SL5	SL5_16S	99.65	572	0	DQ283129	*Rana temporaria* voucher ZSM 762/2000
SL6	SL6_16S	99.65	572	0	DQ283129	*Rana temporaria* voucher ZSM 762/2000
SL7	SL7_16S	99.65	572	0	DQ283129	*Rana temporaria* voucher ZSM 762/2000
SL8	SL8_16S	99.65	572	0	DQ283129	*Rana temporaria* voucher ZSM 762/2000
SL9	SL9_16S	99.65	572	0	DQ283129	*Rana temporaria* voucher ZSM 762/2000
SL11	SL11_16S	99.65	572	0	DQ283129	*Rana temporaria* voucher ZSM 762/2000
SL12	SL12_16S	99.65	572	0	DQ283129	*Rana temporaria* voucher ZSM 762/2000
SL13	SL13_16S	99.65	572	0	DQ283129	*Rana temporaria* voucher ZSM 762/2000
SL14	SL14_16S	99.65	572	0	DQ283129	*Rana temporaria* voucher ZSM 762/2000
SL15	SL15_16S	99.65	572	0	DQ283129	*Rana temporaria* voucher ZSM 762/2000
SL16	SL16_16S	99.65	572	0	DQ283129	*Rana temporaria* voucher ZSM 762/2000
SL17	SL17_16S	99.65	572	0	DQ283129	*Rana temporaria* voucher ZSM 762/2000
SL18	SL18_16S	99.65	572	0	DQ283129	*Rana temporaria* voucher ZSM 762/2000
SL19	SL19_16S	99.65	572	0	DQ283129	*Rana temporaria* voucher ZSM 762/2000
SL20	SL20_16S	99.65	572	0	DQ283129	*Rana temporaria* voucher ZSM 762/2000

CZE1	16S_CZE1	99.46	554	0	AB685766	*Rana temporaria* voucher: KUHE:28259
CZE2	16S_CZE2	100	554	0	AB685766	*Rana temporaria* voucher: KUHE:28259
CZE3	16S_CZE3	100	554	0	AB685766	*Rana temporaria* voucher: KUHE:28259
CZE4	16S_CZE4	99.65	576	0	AY843601	*Hyla arborea*
CZ11	16S_CZ11	99.11	560	0	DQ283223	*Phrynobatrachus dispar* voucher CAS 218995
CZ12	16S_CZ12	98.94	567	0	DQ283223	*Phrynobatrachus dispar* voucher CAS 218995
CZ13	16S_CZ13	98.94	567	0	DQ283223	*Phrynobatrachus dispar* voucher CAS 218995
CZ14	16S_CZ14	99.12	566	0	DQ283223	*Phrynobatrachus dispar* voucher CAS 218995
CZ3	16S_CZ3	99.66	583	0	JN627423	*Rana ridibundus* isolate RAFA-02
CZ2	16S_CZ2	99.66	583	0	JN627423	*Rana ridibundus* isolate RAFA-02
A47	16S_ A47	99.43	528	0	DQ022351	*Amnirana albolabris*
A49	16S _A49	99.43	528	0	DQ022351	*Amnirana albolabris*
A50	16S _A50	99.43	528	0	DQ022351	*Amnirana albolabris*
A46	16S_A46	99.47	571	0	AY843773	*Trichobatrachus robustus*
A38	16S_ A38	99.47	571	0	AY843773	*Trichobatrachus robustus*
A48	16S_ A48	99.47	571	0	AY843773	*Trichobatrachus robustus*
A55	16S_ A55	98.02	606	0	GU183858	*Bufo cf. regularis* FB-2010 voucher MW 6140
A40	16S_ A40	98.02	606	0	GU183858	*Bufo cf. regularis* FB-2010 voucher MW 6140
A52	16S_ A52	98.02	606	0	GU183858	*Bufo cf. regularis* FB-2010 voucher MW 6140
A54	16S_ A54	98.02	606	0	GU183858	*Bufo cf. regularis* FB-2010 voucher MW 6140
A56	16S_ A56	98.02	606	0	GU183858	*Bufo cf. regularis* FB-2010 voucher MW 6140
A61	16S_ A61	99.43	528	0	DQ022351	*Amnirana albolabris*
A60	16S_ A60	99.43	528	0	DQ022351	*Amnirana albolabris*
A59	16S_ A59	99.43	528	0	DQ022351	*Amnirana albolabris*
A58	16S_ A58	99.43	528	0	DQ022351	*Amnirana albolabris*
A57	16S_ A57	99.43	528	0	DQ022351	*Amnirana albolabris*
A53	16S_ A53	99.43	528	0	DQ022351	*Amnirana albolabris*

Supplementary Table S9: Details of published 16S rDNA sequences of known amphibian taxa used in the phylogenetic analysis shown in Figure 3.

Accession no.	Order	Sub-order	Super family	Family	Genus	Species	Strains	Reference
AY843773	Anura	Neobatrachia	Ranoidea	Arthroleptidae	*Trichobatrachus*	*robustus*	DPL 3932	(34)
HM441260	Anura	Neobatrachia	Ranoidea	Phrynobatrachidae	*Phrynobatrachus*	*steindachneri*	MCZ A-138080	Blackburn, DC unpublished
DQ347318	Anura	Neobatrachia	Ranoidea	Pyxicephalidae	*Afrana* (*Amietia*)	*angolensis*	isolate 0992	(35)
DQ283402	Anura	Neobatrachia	Ranoidea	Pyxicephalidae	*Afrana* (*Amietia*)	*vertebralis*	AMNH A144977	(36)
DQ283349	Anura	Neobatrachia	Ranoidea	Arthroleptidae	*Astylosternus*	*schioetzi*	UTA 52398	(36)
AY523765	Anura	Neobatrachia	Ranoidea	Microhylidae	*Scaphiophryne*	*marmorata*	VUB 0540	(37)

DQ283161	Anura	Neobatrachia	Ranoidea	Arthroleptidae	*Leptopelis*	sp.	AMNH A168408	(36)
FJ807721	Anura	Neobatrachia	Ranoidea	Arthroleptidae	*Leptopelis*	*karissimbensis*	ZFMK:87996	Hoelting, M *et al.* unpublished
DQ283437	Anura	Neobatrachia	Ranoidea	Hyperoliidae	*Kassina*	*senegalensis*	RdS 803	(36)
DQ283356	Anura	Neobatrachia	Ranoidea	Hyperoliidae	*Phlyctimantis*	*leonardi*	DPL 4058	(36)
DQ283174	Anura	Neobatrachia	Ranoidea	Hyperoliidae	*Opisthothylax*	*immaculatus*	DPL 3968	(36)
EF646678	Anura	Neobatrachia	Ranoidea	Hyperoliidae	*Heterixalus*	*madagascariensis*	ZSM 569/2000	(38)
AB612026	Anura	Neobatrachia	Ranoidea	Arthroleptidae	*Trichobatrachus*	*robustus*	taxon:111096	(39)
AY341723	Anura	Neobatrachia	Ranoidea	Arthroleptidae	*Astylosternus*	*diadematus*	taxon:252286	(40)

FJ594083	Anura	Neobatrachia	Ranoidea	Hyperoliidae	*Hyperolius*	*lamottei*	taxon:643489	(41)
AF215431	Anura	Neobatrachia	Ranoidea	Hyperoliidae	*Afrixalus*	sp.	MV-1999	(42)
DQ283234	Anura	Neobatrachia	Ranoidea	Hyperoliidae	*Afrixalus*	*Stuhlmanni (pygmaeus)*	CAS 214837	(36)
FJ151068	Anura	Neobatrachia	Ranoidea	Hyperoliidae	*Afrixalus*	*paradorsalis*	AMCC:117589	(43)
GQ366232	Anura	Neobatrachia	Hyloidea	Hylidae	*Phasmahyla*	*guttata*	MNRJ 41688	(44)
GQ366237	Anura	Neobatrachia	Hyloidea	Hylidae	*Phyllomedusa*	*rohdei*	CFBHt 93	(44)
AY843708	Anura	Neobatrachia	Hyloidea	Hylidae	*Osteocephalus*	*oophagus*	MNHN 2001.0828	(34)
FJ965303	Anura	Neobatrachia	Hyloidea	Hylidae	*Osteocephalus*	*castaneicola*	NMP6V 73820	(45)

AY326042	Anura	Neobatrachia	Hyloidea	Hylidae	*Trachycephalus*	*jordani*	DCC 2917	(46)
AY326048	Anura	Neobatrachia	Hyloidea	Hylidae	*Trachycephalus*	*venulosus*	DCC 3069	(46)
AY948746	Anura	Neobatrachia	Hyloidea	Hylidae	*Trachycephalus (Phrynohyas)*	*venulosus (venulosa)*	VUB 0987	(47)
AY364371	Anura	Neobatrachia	Hyloidea	Hylidae	*Trachycephalus (Phrynohyas)*	*venulosus (venulosa)*	taxon:213803	(48)
AY549323	Anura	Neobatrachia	Hyloidea	Hylidae	*Hypsiboas (Hyla)*	*balzani*	DLR 41193	(49)
DQ283442	Anura	*	Pipidae	Xenopodinae	*Xenopus*	*gilli*	AMNH A153027	(36)
AB612030	Anura	Neobatrachia	Ranoidea	Mantellinae	*Blommersia*	*wittei*	ZSM:D48/2000	(39)
AB530639	Anura	Neobatrachia	Ranoidea	Microhylidae	*Kaloula*	*pulchra*	taxon:167934	(50)

DQ283251	Anura	*	Pipidae	Pipinae	*Pipa*	*carvalhoi*	Alexander Haas	(36)
DQ283156	Anura	Pelobatoidea	Pelobatidae	*	*Scaphiopus*	*holbrookii*	AMNH A168434	(36)
EF397243	Anura	Pelobatoidea	Megophryidae	*	*Xenophrys*	*nankiangensis*	CIB-XM835	(51)
DQ283432	Anura	Bombinatoridae	*	*	*Bombina*	*orientalis*	Rafael de Sa	(36)
EF566971	Anura	Neobatrachia	Hyloidea	Hylidae	*Acris*	*gryllus*	ECM0052	Lemmon,EM unpublished
DQ283257	Anura	Neobatrachia	Ranoidea	Ranidae	*Lithobates (Rana)*	*catesbeianus (catesbeiana)*	Bruce L. Christman	(36)
AY779228	Anura	Neobatrachia	Ranoidea	Ranidae	*Lithobates (Rana)*	*palustris*	KU 204425	(52)
JX996027	Anura	Neobatrachia	Ranoidea	Arthroleptidae	*Leptopelis*	*barbouri*	CAS:168472	Portillo, F. and Greenbaum, E. unpublished

DQ283361	Anura	Neobatrachia	Ranoidea	Arthroleptidae	*Nyctibates*	*corrugatus*	UTA A44461	(36)
DQ283223	Anura	Neobatrachia	Ranoidea	Phrynobatrachidae	*Phrynobatrachus*	*dispar*	CAS 218995	(36)
AB640932	Anura	Neobatrachia	Ranoidea	Ranidae	*Pelophylax (Rana)*	*ridibundus*	KTUFS-1	(53)
AY549345	Anura	Neobatrachia	Hyloidea	Hylidae	*Dendropsophus (Hyla)*	*minutus (minuta)*	MACN 33799	(49)
JF790084	Anura	Neobatrachia	Hyloidea	Hylidae	*Dendropsophus*	*minutus*	AS0474	(54)
DQ022351	Anura	Neobatrachia	Ranoidea	Ranidae	*Hylarana (Amnirana)*	*albolabris*	TMSA84177	(55)
DQ283369	Anura	Neobatrachia	Ranoidea	Ranidae	*Hylarana (Amnirana)*	*albilabris*	UTA A44424	(36)
AY014377	Anura	Neobatrachia	Ranoidea	Ranidae	*Hylarana*	*lepus*	*	(56)

DQ283433	Anura	Neobatrachia	Hyloidea	Leptodactylidae	*Leptodactylus*	*discodactylus*	Rafael de Sa	(36)
DQ283404	Anura	Neobatrachia	Hyloidea	Leptodactylidae	*Leptodactylus*	*fuscus*	AMNH A139088	(36)
DQ283163	Anura	Neobatrachia	Hyloidea	Bufonidae	*Amietophrynus (Bufo)*	*regularis*	FMNH 251386	(36)
AY843740	Anura	Neobatrachia	Hyloidea	Hylidae	*Pseudis*	*paradoxa*	MACN 38642	(34)
DQ830810	Anura	Neobatrachia	Hyloidea	Hylidae	*Hyla*	*cinerea*	LSUMZ 48181	Smith, S. A. unpublished
AY843563	Anura	Neobatrachia	Hyloidea	Hylidae	*Agalychnis*	*callidryas*	RdS 537	(34)
AY843692	Anura	Neobatrachia	Hyloidea	Hylidae	*Litoria*	*caerulea*	AMNH A-168409	(34)
GQ204694	Anura	Neobatrachia	Ranoidea	Rhacophoridae	*Polypedates*	*maculatus*	WHTKANT	(57)

AY779252	Anura	Neobatrachia	Ranoidea	Ranidae	*Lithobates (Rana)*	*sphenocephalus (sphenocephala)*	USC 7448	(52)
AF215441	Anura	Neobatrachia	Ranoidea	Hyperoliidae	*Hyperolius*	*viridiflavus*	*	(42)
AY581644	Anura	*	Pipidae	Xenopodinae	*Xenopus*	*laevis*	MHNG 2644.53	(58)
DQ283045	Anura	Neobatrachia	Hyloidea	Dendrobatidae	*Allobates*	*femoralis*	LSUMZ 17552	(36)
GQ366286	Anura	Neobatrachia	Hyloidea	Hylidae	*Phyllomedusa*	*tomopterna*	CFBH 2451	(44)
DQ092266	Caudata	*	Salamandroidea	Salamandridae	*Pleurodeles*	*nebulosus*	Anc12	(59)
DQ283445	Caudata	*	Salamandroidea	Salamandridae	*Pleurodeles*	*waltl*	AMNH A168418	(36)
DQ283407	Caudata	*	Salamandroidea	Ambystomatidae	*Ambystoma*	*tigrinum*	AMNH A164658	(36)

EF107170	Caudata	*		Salamandroidea	Ambystomatidae	*Ambystoma*	*mexicanum*	0907AmbMex	(47)

Supplementary Table S10: Detail of environmental sequences sampled from GenBank and reduced to triangles on Figure 1.

Clade number	Accession no.	Environmental clone	Environment	Location	Environment type	Reference
1	EU162624	PAA9SP2005	Lake Pavin	Massif Central, France	Oligo-mesotrophic lake	(8)
1	EF527175	SA2_2G9	Framvaren Fjord	South-western Norway	Axonic/sulfidic waters	(9)
1	EU162630	PAC8SP2005	Lake Pavin	Massif Central, France	Oligo-mesotrophic lake	(8)
1	JN090897	KRL01E37	Lake Karla	Greece	Lake	(17)
1	AY642744	A31	Lake Aydat	Massif Central, France	Eutrophic lake	(60)
1	JN090873	KRL01E13	Lake Karla	Greece	Lake	(17)

1	DQ455739	BB01-172.24w	Estuary	USA: Barnegat Bay, NJ	Marine waters	Lim *et al.* unpublished
1	EU162628	PAD1SP2005	Lake Pavin	Massif Central, France	Oligo-mesotrophic lake	(8)
1	HQ191345	PA2009C9	Lake Pavin	Massif Central, France	Oligo-mesotrophic lake	(10)
1	DQ103802	M2_18C03	Mariager Fjord	Danish east coast	Anoxic marine waters	(13)
2	EU162625	PAG5SP2005	Lake Pavin	Massif Central, France	Oligo-mesotrophic lake	(8)
2	EU162627	PAD12SP2005	Lake Pavin	Massif Central, France	Oligo-mesotrophic lake	(8)
3	AY919720	LG10-12	Lake George	Adirondack Park North-Eastern New York, USA	Oligotrophic lake	(61)
3	AY919821	LG53-06	Lake George	Adirondack Park North-Eastern New York, USA	Oligotrophic lake	(61)

3	AY919809	LG36-11	Lake George	Adirondack Park North-Eastern New York, USA	Oligotrophic lake	(61)
4	DQ244020	PAB11AU2004	Lake Pavin	Massif Central, France	Oligo-mesotrophic lake	(62)
4	DQ244021	PAD10AU2004	Lake Pavin	Massif Central, France	Oligo-mesotrophic lake	(62)
4	DQ244035	PAD7AU2004	Lake Pavin	Massif Central, France	Oligo-mesotrophic lake	(62)
4	DQ244037	PAF7AU2004	Lake Pavin	Massif Central, France	Oligo-mesotrophic lake	(62)
4	DQ244034	PAG2AU2004	Lake Pavin	Massif Central, France	Oligo-mesotrophic lake	(62)
4	AY642737	A20	Lake Aydat	Massif Central, France	Eutrophic lake	(60)
4	AY919736	LG15-10	Lake George	Adirondack Park North-Eastern New York, USA	Oligotrophic lake	(61)

5	AY919682	LG02-01	Lake George	Adirondack Park North-Eastern New York, USA	Oligotrophic lake	(61)
5	AY919712	LG09-02	Lake George	Adirondack Park North-Eastern New York, USA	Oligotrophic lake	(61)
5	AY919769	LG25-01	Lake George	Adirondack Park North-Eastern New York, USA	Oligotrophic lake	(61)
5	DQ244031	PAF8AU2004	Lake Pavin	Massif Central, France	Oligo-mesotrophic lake	(62)
5	DQ244027	PAA22AU2004	Lake Pavin	Massif Central, France	Oligo-mesotrophic lake	(62)
5	GU290070	TKR07E.24	Lake Tanganyika	East Africa	Oligotrophic lake	Tarbe et al. unpublished
5	AY919820	LG50-10	Lake George	Adirondack Park North-Eastern New York, USA	Oligotrophic lake	(61)
6	EF526795	NA2_4B10	Framvaren Fjord	Norway	Anoxic marine waters	(9)

6	EF526831	NA1_3C6	Framvaren Fjord	Norway	Anoxic marine waters	(9)
6	EF526760	NA2_2D10	Framvaren Fjord	Norway	Anoxic marine waters	(9)

References

1. Davis AK, Yabsley MJ, Keel MK, & Maerz JC (2007) Discovery of a novel alveolate pathogen affecting southern leopard frogs in georgia: description of the disease and host effects. *Ecohealth* 4:310-317.
2. Rothermel BB*, et al.* (2008) Widespread occurrence of the amphibian chytrid fungus *Batrachochytrium dendrobatidis* in the southeastern USA. *Dis. Aquat. Organ.* 82:3-18.
3. Jones MEB, Armién AG, Rothermel BB, & Pessier AP (2012) Granulomatous myositis associated with a novel alveolate pathogen in an adult southern leopard frog (*Lithobates sphenocephalus*). *Dis. Aquat. Organ.* 102:163-167.
4. Landsberg JH*, et al.* (2013) Co-infection by alveolate parasites and frog virus 3-like ranavirus during an amphibian larval mortality event in Florida, USA. *Dis. Aquat. Organ.* 105:89-99.
5. Palumbi SR*, et al.* (1991) The simple fool's guide to PCR. *A collection of PCR protocols, version 2*, University of Hawaii, Honolulu).
6. Lepère C, Domaizon I, & Débroas D (2008) Unexpected importance of potential parasites in the composition of the freshwater small-eukaryote community. *Appl. Env. Microbiol.* 74(10):2940-2949.
7. Lefèvre E*, et al.* (2007) Unveiling fungal zooflagellate as members of freshwater picoeukaryotes: evidence from a molecular diversity study in a deep meromictic lake. *Environ. Microbiol.* 9(1):61-71.
8. Lefèvre E, Roussel B, Amblard C, & Sime-Ngando T (2008) The molecular diversity of freshwater picoeukaryotes reveals high occurrence of putative parasitoids in the plankton. *PLoS ONE* 3(6):e2324.
9. Behnke A, Barger KJ, Bunge J, & Stoeck T (2010) Spatio-temporal variations in protistan communities along an O/HS gradient in the anoxic Framvaren Fjord (Norway). *FEMS Microbiol. Ecol.* 72(1):89-102.
10. Monchy S*, et al.* (2011) Exploring and quantifying fungal diversity in freshwater lake ecosystems using rDNA cloning/sequencing and SSU tag pyrosequencing. *Environ. Microbiol.* 13(6):1433-1453.
11. Moon-van der Staay SY, De Wachter R, & Vaulot D (2001) Oceanic 18S rDNA sequences from picoplankton reveal unsuspected eukaryotic diversity. *Nature* 409:607-610.
12. Lefranc M, Thénot A, Lepère C, & Débroas D (2005) Genetic diversity of small eukaryotes in lakes differing by thier trophic status. *Appl Env Microbiol* 71(10):5935 - 5942.
13. Zuendorf A, Bunge J, Behnke A, Barger KJ, & Stoeck T (2006) Diversity estimates of microeukaryotes below the chemocline of the anoxic Mariager Fjord, Denmark. *FEMS Microbiol. Ecol.* 58:476-491.
14. Lopez-Garcia P, Philippe H, Gail F, & Moreira D (2003) Autochthonous eukaryotic diversity in hydrothermal sediment and experimental microcolonizers at the Mid-Atlantic Ridge. *Proc. Natl. Acad. Sci. USA* 100:697-702.
15. Lara E, Mitchell EA, Moreira D, & Lopez Garcia P (2011) Highly diverse and seasonally dynamic protist community in a pristine peat bog. *Protist* 162(1):14-32.
16. Richards TA, Vepritskiy AA, Gouliamova DE, & Nierzwicki-Bauer SA (2005) The molecular diversity of freshwater picoeukaryotes from an oligotrophic lake reveals diverse, distinctive and globally dispersed lineages. *Environ. Microbiol.* 7(9):1413-1425.
17. Oikonomou A, Katsiapi M, Karayanni H, Moustaka-Gouni M, & Kormas KA (2012) Plankton microorganisms coinciding with two consecutive mass fish kills in a newly reconstructed lake. *ScientificWorldJournal* 50135.

18. Gosner K (1960) A simplified table for staging anuran embryos and larvae with notes on identification. *Herpetologica* 16(3):183-219.
19. Nieuwkoop P & Faber J (1994) *Normal table of Xenopus laevis 1967* (Garlan Publishing Inc., NY).
20. Kotob SI, McLaughlin SM, Van Berkum P, & Faisal M (1999) Discrimination between two *Perkinsus* spp. isolated from the softshell clam, *Mya arenaria*, by sequence analysis of two internal transcriped spacers regions and the 5.8S ribosomal RNA gene. *Parasitology* 119:363-368.
21. Robledo JA, Wright AC, Marsh AG, & Vasta GR (1999) Nucleotide sequence variability in the nontranscribed spacer of the rRNA locus in the oyster parasite *Perkinsus marinus*. *J. Parasitol.* 85(4):650-656.
22. Casas SM*, et al.* (2004) *Perkinsus mediterraneus* n. sp., a protistan parasite of the European flat oyster *Ostrea edulis* from the Balearic Islands, Mediterranean Sea. *Dis. Aquat. Organ.* 58:231-244.
23. Robledo JA, Nunes PA, Cancela ML, & Vasta GR (2002) Development of an in vitro clonal culture and characterization of the rRNA gene cluster of *Perkinsus atlanticus*, a protistan parasite of the clam *Tapes decussatus*. *J. Euk. Microbiol.* 49(5):414-422.
24. Robledo JA, Coss CA, & Vasta GR (2000) Characterization of the ribosomal RNA locus of *Perkinsus atlanticus* and development of a polymerase chain reaction-based diagnostic assay. *J. Parasitol.* 86(5):972-978.
25. Coss CA, Robledo JAF, Ruiz GM, & Vasta GR (2001) Description of *Perkinsus andrewsi* n.sp. isolated from the baltic clam (Macoma balthica) by characterization of the ribosomal RNA locus and development of a species-specific PCR-based diagnostic assay. *J. Euk. Microbiol.* 48(52-61).
26. Pecher WT, Robledo JA, & Vasta GR (2004) Identification of a second rRNA gene unit in the *Perkinsus andrewsi* genome. *J. Euk. Microbiol.* 51(2):234-245.
27. Noren F, Moestrup O, & Rehnstam-Holm AS (1999) *Parvilucifera infectans* Noren et Moestrup gen. et sp. nov. (Perkinsozoa phylum nov.): a parasitic flagellate capable of killing toxic microalgae. *European Journal of Protistology* 35:233-254.
28. Hoppenrath M & Leander BS (2009) Molecular phylogeny of *Parvilucifera prorocentri* (Alveolata, Myzozoa): Insights into Perkinsid character evolution. *J. Euk. Microbiol.* 56(3):251-256s.
29. Lepelletier F*, et al.* (2014) *Parvilucifera rostrata* sp. nov. (Perkinsozoa), a novel parasitoid that infects planktonic dinoflagellates. *Protist* 165(1):31-49.
30. Figueroa RI, Garcés E, & Camp J (2010) Reproductive plasticity and local adaptation in the host–parasite system formed by the toxic *Alexandrium minutum* and the dinoflagellate parasite *Parvilucifera sinerae*. *Harmful algae* 10(1):56-63.
31. Coats DW, Kim S, Bachvaroff TR, Handy SM, & Delwiche CF (2004) *Tintinnophagus acutus* n. g., n. sp. (Phylum Dinoflagellata), an ectoparasite of the ciliate *Tintinnopsis cylindrica* Daday 1887, and its relationship to *Duboscquodinium collini* Grasse 1952. *J. Euk. Microbiol.* 57(6):468-482.
32. Chambouvet A*, et al.* (2011) Interplay between the parasite *Amoebophrya* sp. (Alveolata) and the cyst formation of the red tide dinoflagellate *Scrippsiella trochoidea*. *Protist* 162(4):637-649.
33. Gunderson JH, John SA, Boman WC, & Coats DW (2002) Multiple strains of the parasitic dinoflagellate Amoebophrya exist in Chesapeake Bay. *J. Euk. Microbiol.* 49(6):469-474.

34. Faivovich J, *et al.* (2005) Systematic Review of the frog family Hylidae, with special reference to the Hylinae: Phylogenetic analysis and taxonomic revision. *Bull. Am. Mus. Nat. Hist.* 294:1-240.
35. Bossuyt F, Brown R, Hillis D, Cannatella D, & Milinkovitch M (2006) Phylogeny and biogeography of a cosmopolitan frog radiation: Late cretaceous diversification resulted in continent-scale endemism in the family ranidae. *Syst. Biol.* 55(4):579-594.
36. Frost DR, *et al.* (2006) The amphibian tree of life. *Bull. Am. Mus. Nat. Hist.* 297.
37. Roelants K & Bossuyt F (2005) Archaeobatrachian paraphyly and pangaean diversification of crown-group frogs. *Syst. Biol.* 54(1):111-126.
38. Wollenberg K, Glaw F, Meyer A, & Vences M (2007) Molecular phylogeny of Malagasy reed frogs, Heterixalus, and the relative performance of bioacoustics and color-patterns for resolving their systematics. *Mol. Phylogenet. Evol.* 45(1):14-22.
39. Kurabayashi A, *et al.* (2011) From Antarctica or Asia? New colonization scenario for Australian-New Guinean narrow mouth toads suggested from the findings on a mysterious genus Gastrophrynoides. *BMC Evol. Biol.* 11(1):175.
40. Vences M, *et al.* (2003) Multiple overseas dispersal in amphibians. *Proc. R. Soc. Lond., B, Biol. Sci.* 270(1532):2435-2442.
41. Veith M, *et al.* (2009) Multiple evolution of sexual dichromatism in African reed frogs. *Mol. Phylogenet. Evol.* 51(2):388-393.
42. Vences M (2000) Phylogenetic studies of ranoid frogs (Amphibia:Anura), with a discussion of the origin and evolution of the vertebrate clades of Madagascar. PhD (Universitaet Bonn, Germany).
43. Blackburn D (2008) Biogeography and evolution of body size and life history of African frogs: phylogeny of squeakers (Arthroleptis) and long-fingered frogs (Cardioglossa) estimated from mitochondrial data. *Mol. Phylogenet. Evol.* 43(3):806-826.
44. Faivovich J, *et al.* (2010) The phylogenetic relationships of the charismatic poster frogs, Phyllomedusinae (Anura, Hylidae) *Cladistics* 26(3):227-261.
45. Moravec J, *et al.* (2009) A new species of *Osteocephalus* (Anura: Hylidae) from Amazonian Bolivia: first evidence of tree frog breeding in fruit capsules of the Brazil nut tree. *Zootaxa* 2215:37-54.
46. Darst C & Cannatella D (2004) Novel relationships among hyloid frogs inferred from 12S and 16S mitochondrial DNA sequences. *Mol. Phylogenet. Evol.* 31(2):462-475.
47. Roelants K, *et al.* (2007) Global patterns of diversification in the history of modern amphibians. *Proc. Natl. Acad. Sci. U.S.A.* 104(3):887-892.
48. Biju S & Bossuyt F (2003) New frog family from India reveals an ancient biogeographical link with the Seychelles. *Nature* 425(6959):711-714.
49. Faivovich J, *et al.* (2004) A molecular perspective on the phylogeny of the *Hyla pulchella* species group (Anura, Hylidae). *Mol. Phylogenet. Evol.* 32(3):938-950.
50. Hasan M, *et al.* (2014) Genetic divergences of South and Southeast Asian frogs: a case study of several taxa based on 16S ribosomal RNA gene data with notes on the generic name Fejervarya. *Turk J Zool* 38:389-411.
51. Fu J, Weadick C, & Bi K (2007) A phylogeny of the high-elevation Tibetan megophryid frogs and evidence for the multiple origins of reversed sexual size dimorphism. *J. Zool.* 273(3):315-325.
52. Hillis D & Wilcox T (2005) Phylogeny of the New World true frogs (Rana). *Mol. Phylogenet. Evol.* 34(2):299-314.

53. Bulbul U, Matsui M, Kutrup B, & Eto K (2011) Taxonomic relationships among turkish water frogs as revealed by phylogenetic analyses using mtDNA gene sequences. *Zool. Sci.* 28(12):930-936.
54. Jansen M, Bloch R, Schulze A, & Pfenninger M (2011) Integrative inventory of Bolivia s lowland anurans reveals hidden diversity. *Zool. Scr.* 40(6):567-583.
55. Scott E (2005) A phylogeny of ranid frogs (Anura: Ranoidea: Ranidae), based on a simultaneous analysis of morphological and molecular data. *Cladistics* 21:507-574
56. Kosuch J, Vences M, Dubois A, Ohler A, & Bohme W (2001) Out of Asia: mitochondrial DNA evidence for an Oriental origin of tiger frogs, genus Hoplobatrachus. *Mol. Phylogenet. Evol.* 21(3):398-407.
57. Meegaskumbura M*, et al.* (2010) Taruga (Anura:Rhacophoridae), a new genus of foam-nesting tree frogs endemic to Sri Lanka. *Ceylon J Sci Biol Sci* 39(2):75-94.
58. Evans B, Kelley D, Tinsley R, Melnick D, & Cannatella D (2004) A mitochondrial DNA phylogeny of African clawed frogs: phylogeography and implications for polyploid evolution. *Mol. Phylogenet. Evol.* 33(1):197-213.
59. Carranza S & Amat F (2005) Taxonomy, biogeography and evolution of Euproctus (Amphibia: Salamandridae), with the resurrection of the genus Calotriton and the description of a new endemic species from the Iberian Peninsula. *Zool. J. Linn. Soc.* 145(4):555-582.
60. Lefranc M, Thenot A, Lepere C, & Debroas D (2005) Genetic diversity of small eukaryotes in lakes differing by their trophic status. *Appl. Env. Microbiol.* 71(10):5935-5942.
61. Richards TA, Vepritskiy AA, Gouliamova DE, & Nierzwicki-Bauer SA (2005) The molecular diversity of freshwater picoeukaryotes from an oligotrophic lake reveals diverse, distinctive and globally dispersed lineages. *Envrion. Microbiol.* 7(9):1413-1425.
62. Lefevre E*, et al.* (2007) Unveiling fungal zooflagellate as members of freshwater picoeukaryotes: evidence from a molecular diversity study in a deep meromictic lake. *Environ. Microbiol.* 9(1):61-71.