

Data Set 3. Molecular sequence data

Locality data and GenBank accession numbers for the new taxa included in our analyses are below. We also include GenBank accession numbers for taxa published elsewhere, but used in our analyses.

Institutional and Field-Series Acronyms

CM: Carnegie Museum of Natural History, Pittsburgh

FL: Fernando Lobo, field series (currently under study; will be deposited at FML or MCN)

FML: Fundación Miguel Lillo, Tucumán, Argentina

MCN: Museo de Ciencias Naturales, Universidad Nacional de Salta, Argentina

MIC: Miguel I. Christie, private collection

MLP.S: Museo de la Plata, Buenos Aires, Argentina

MVZ: Museum of Vertebrate Zoology, University of California, Berkeley

REE: Robert E. Espinoza, field series (currently under study; will be deposited at FML or MCN)

SDSU: San Diego State University, San Diego

ND2 Sequences

Liolaemus archeforus (MCN 1543; GenBank Accession: **AY661901**); ARGENTINA:

Province Santa Cruz: Department Lago Buenos Aires: 12 km from Perito Moreno
(46° 30.402' S; 71° 00.423' W)

Liolaemus baguali (MCN 764; GenBank Accession: **AY661905**); ARGENTINA:

Province Santa Cruz: Department Lago Argentino: 40 km S Lago Cardiel (49° 11.096' S; 71° 20.746' W)

Liolaemus canqueli (FML 13966; GenBank Accession: **AY661896**); ARGENTINA:

Province Chubut: Department Paso de Indios: W-facing slope Meseta El Sombrero, 1.2 km N intersection between Ruta Provincial 53 and Ruta Provincial 90 at km marker 1778 (44° 09.302' S; 68° 16.202' W; 528 m)

Liolaemus donosobarrosi (FML 10059; GenBank Accession: **AY661899**);

ARGENTINA: Province Neuquén: Department Confluencia: 7.4 km WNW Cutral-Có, on road to Paso de los Indios off Ruta Provincial 22 (38° 51.993' S; 69° 14.347' W; 626 m)

Liolaemus elongatus [sample 10] (REE 833; GenBank Accession: **AY661898**);

ARGENTINA: Province Chubut: Department Sarmiento: Las Pulgas, 50 km W Lago Musters, Ruta Provincial 20 (45° 27.439' S; 69° 40.988' W; 535 m)

Liolaemus gallardoi (MCN 1498; GenBank Accession: **AY661902**); ARGENTINA:

Province Santa Cruz: Department Rio Chico: Pampa del Asador, Lago Guitarra (47° 58.367' S; 71° 29.870' W)

Liolaemus hatcheri (MCN 887; GenBank Accession: **AY661904**); ARGENTINA:

Province Santa Cruz: Meseta La Siberia, road to Estancia “San Adolfo” (49° 09.863' S; 71° 47.698' W; 1062 m)

Liolaemus kriegi (REE 699; GenBank Accession: **AY661908**); ARGENTINA: Province

Neuquén: Department Zapala: 7.3 km NE Parque Nacional Laguna Blanca, Ruta Provincial 46 (39° 02.377' S; 70° 13.923' W; 1222 m)

Liolaemus cf. melanops (REE 770; GenBank Accession: **AY661895**); ARGENTINA:

Province Rio Negro: Department 25 de Mayo: 9.1 km E Maquinchao, km marker 330 on Ruta Provincial 23 (41° 20.022' S; 69° 28.233' W; 898 m)

Liolaemus sarmientoi (MCN 1511; GenBank Accession: **AY661907**); ARGENTINA:

Province Santa Cruz: Department Guer Aike; 5 km S Estancia Monte Aymond (52° 7.074' S; 69° 31.514' W)

Liolaemus cf. silvanae (MCN 813; GenBank Accession: **AY661900**); ARGENTINA:

Province Santa Cruz: Department Lago Buenos Aires: 78 km S Los Antiguos on road to Co. Zeballos (47° 01.542' S; 71° 48.475' W; 1500 m)

Liolaemus tari (MCN 1493; GenBank Accession: **AY661906**); ARGENTINA: Province

Santa Cruz: Meseta La Siberia, road to Estancia “San Adolfo” (49° 09.864' S; 71° 47.698' W; 1062 m)

Liolaemus cf. xanthoviridis (REE 870; GenBank Accession: **AY661897**);

ARGENTINA: Province Santa Cruz: km marker 2164 on Ruta Nacional 3, 42.7 km S Tres Cerros (48° 33.481' S; 67° 44.379' W; 142 m)

Liolaemus zullyi (MCN 1540; GenBank Accession: **AY661903**); ARGENTINA:

Province Santa Cruz: Department Lago Buenos Aires: 37 km S de los Antiguos, road to Co. Zeballos (46° 46.237' S; 71° 45.200' W)

Phymaturus antofagastensis (MCN 306; GenBank Accession: **AY661892**);

ARGENTINA: Province Catamarca: Department Antofagasta: Cuesta Calalaste, 30 km NW Antofagasta de la Sierra (25° 52.590' S; 67° 27.511' W; 3753 m)

Phymaturus indistinctus (FML 10087; GenBank Accession: **AY661893**);

ARGENTINA: Province Chubut: Department Sarmiento: Las Pulgas, 50 km W

Lago Musters, Ruta Provincial 20 (45° 27.439' S; 69° 40.988' W; 535 m)

Phymaturus patagonicus (FML 10061; GenBank Accession: **AY661894**);

ARGENTINA: Province Rio Negro: Department Pilcaniyeu: Cerro Alto, Ruta

Nacional 40 (40° 44.074' S; 70° 34.696' W; 1014 m)

12S Sequences

Liolaemus austromendocinus (SDSU 3399; GenBank Accession: **AY662075**);

ARGENTINA: Province Mendoza: Department Malargüe: 47 km S Malargüe on

Ruta Nacional 40 (38° 46' 10.4" S; 69° 38' 46.8" W; 1920 m)

Liolaemus bellii (SDSU 3718; GenBank Accession: **AY662069**); CHILE: Region

Santiago: near Farellones (32° 21.84' S; 70° 18.32' W; 2530 m)

Liolaemus cf. bibronii (SDSU 3463; GenBank Accession: **AY662067**); ARGENTINA:

Province Mendoza: Department Las Heras: 24 km NE Uspallata (38° 28' 52.4" S;

69° 11' 11.9" W; 2768 m)

Liolaemus bitaeniatus (SDSU 3569; GenBank Accession: **AY662062**); ARGENTINA:

Province Tucumán: Department Tafi del Valle: Dique de la Angostura, 10 km E

Tafi del Valle on Ruta Provincial 307 (26° 50' 0.89" S; 65° 40' 56.9" W; 1860 m)

Liolaemus buergeri (FML 7195; GenBank Accession: **AY662072**); ARGENTINA:

Province Mendoza: Department Malargüe: Los Molles (35° 09' 24.0" S; 69° 56'

22.5" W; 1968 m)

Liolaemus capillitas (SDSU 3481; GenBank Accession: **AY662063**); ARGENTINA:

Province Catamarca: Department Andalgalá: 22 km S Mina Capillitas on Ruta

Provincial 47 (27° 26' 51.6" S; 66° 24' 40.5" W; 2825 m)

Liolaemus ceii [sample 16] (MVZ 232291; GenBank Accession: **AY662073**);

ARGENTINA: Province Neuquén: Department Ñorquin: 1 km S and 3 km E

Termas de Copahue (1900 m)

Liolaemus chaltin (SDSU 3572; GenBank Accession: **AY662061**); ARGENTINA:

Province Jujuy: Department Cochinoca: 4.2 km W Abra Pampa on Ruta Provincial

71 (22° 41' 24.4" S; 65° 43' 12.4" W; 3360 m)

Liolaemus chiliensis (MIC 1256; GenBank Accession: **AY662070**); ARGENTINA:

Province Neuquén: Department Collon Cruz: 1 km N El Salitral on Ruta Nacional

40 (1050 m)

Liolaemus cyanogaster (MIC 1242; GenBank Accession: **AY662071**); ARGENTINA:

Province Neuquén: Ñilque Costas, Puyehue

Liolaemus dicktracyi (CM 147717; GenBank Accession: **AY662065**); ARGENTINA:

Province La Rioja: Department Famatina: Sierra de Famatina, Pozuelos Blancos,

26.5 km from Famatina on road to Cueva de Perez (28° 54' 30" S; 67° 41' 30" W;

2800 m)

Liolaemus cf. elongatus [sample "Mendoza"] (SDSU 3460; GenBank Accession:

AY662077); ARGENTINA: Province Mendoza: Department Las Heras: 24 km NE

Uspallata (38° 28' 52.2" S; 69° 09' 59.2" W; 2768 m)

Liolaemus cf. elongatus [sample 10] (SDSU 3697; GenBank Accession: **AY662079**);

ARGENTINA: Province Neuquén: Department Ñorquin: Barda W Copahue pueblo

Liolaemus gracilis (SDSU 3408; GenBank Accession: **AY662068**); ARGENTINA:

Province Mendoza: Department San Rafael: SE beach of Embalse Nihuil (35° 02' 36.2" S; 68° 40' 42.2" W; 1380 m)

Liolaemus heliodermis (FML 6006; GenBank Accession: **AY662064**); ARGENTINA:

Province Tucumán: Department Tañi del Valle: km 95, Ruta Provincial 307 (26° 40.82' S; 65° 48.74' W; 2820 m)

Liolaemus kriegi (MVZ 232432; GenBank Accession: **AY662074**); ARGENTINA:

Province Neuquén: Department Los Lagos: 0.5 km S and 1.5 km W Cerro de las Ardillas (1600 m) [initial ID: *L. cf. buergeri*; MIC 1114]

Liolaemus lemniscatus (MIC 1106; GenBank Accession: **AY662054**); ARGENTINA:

Province Neuquén: Department Los Lagos: 0.5 km S and 1.5 km W Cerro de las Ardillas (1575 m)

Liolaemus pagaburoi (FML uncataloged; GenBank Accession: **AY662058**);

ARGENTINA: Province Tucumán: Department Tañi del Valle: km 95, Ruta Provincial 307 (26° 40.82' S; 65° 48.74' W; 2820 m)

Liolaemus petrophilus (MLP.S 1671; GenBank Accession: **AY662078**); ARGENTINA:

Province Río Negro: Meseta Somuncurá

Liolaemus puna (REE 219; GenBank Accession: **AY662059**); ARGENTINA: Province

Salta: Department Los Andes: km 111–112 on Ruta Nacional 51, ca. 4 km E Olacapato (24° 08' 21.3" S; 66° 42' 3.71" W; 4230 m)

Liolaemus ramirezae (FML uncataloged; GenBank Accession: **AY662060**);

ARGENTINA: Province Tucumán: Department Tañi del Valle: km 95, Ruta Provincial 307 (26° 40.82' S; 65° 48.74' W; 2820 m)

Liolaemus robertmertensi (SDSU 3499; GenBank Accession: **AY662066**);

ARGENTINA: Province Catamarca: Department Pomán: 6.6 km W Ruta Provincial 46, 33.1 km S Andalgalá, “Puesto Río Blanco” (27° 49' 39.4" S; 66° 14' 37.9" W; 690 m)

Liolaemus tenuis (MIC 1205; GenBank Accession: **AY662055**); ARGENTINA:

Province Neuquén: Department Aluminé: Lago Ñorquico (1050 m)

Liolaemus cf. thermanum (REE 132; GenBank Accession: **AY662076**); ARGENTINA:

Province Mendoza: Department Malargüe: Laguna Niña Encontrada (35° 09' 37.4" S; 69° 52' 09.0" W; 1680 m)

Liolaemus cf. walkeri (SDSU 4018; GenBank Accession: **AY662057**); CHILE: Region

II: Volcán El Tatío (possibly “Geysir del Tatío” ca. 65 km N of San Pedro de Atacama)

Liolaemus yanalco (FL, uncataloged; GenBank Accession: **AY662056**); ARGENTINA:

Province Salta: Department La Poma: road to Acay from Estación Muñano, 5–9 km S Ruta Nacional 51

Phymaturus mallimaccii (REE 183; GenBank Accession: **AY662052**); ARGENTINA:

Province La Rioja: Department Famatina: Sierra de Famatina, ca. Cueva de Perez, Sierra de Famatina (29° 00' 30" S; 67° 43' 30" W; ca. 3600 m)

Phymaturus palluma (SDSU 3388; GenBank Accession: **AY662050**); ARGENTINA:

Province Mendoza: Department Las Heras: 24 km NE Uspallata (38° 28' 52.4" S; 69° 11' 11.9" W; 2768 m)

Phymaturus punae (REE 271; GenBank Accession: **AY662053**); ARGENTINA:

Province La Rioja: Department Gral. Sarmiento: Reserva Laguna Brava, Agua

Quemada (28° 48' 11.3" S; 68° 45' 49.4" W; 3177 m)

Phymaturus somuncurensis (MLP.S 1646; GenBank Accession: **AY662051**);

ARGENTINA: Province Río Negro: Meseta de Somuncurá

Previously Sequenced Taxa

Taxon	GenBank	
	accession no.	Ref.
Outgroups		
<i>Leiocephalus carinatus</i>	AF049864	40
<i>Oplurus cuvieri</i>	U82685	41
<i>Phrynosoma hernandesi</i>	U82686	41
<i>Stenocercus crassicaudatus</i>	AF049866	40
Liolaemidae		
<i>Ctenoblepharys adspersa</i>	AF305784	42
<i>Liolaemus abaucan</i>	AF099263	43
<i>Liolaemus albiceps</i>	AF099267	43
<i>Liolaemus andinus</i> —La Rioja	AF099245	43
<i>Liolaemus andinus</i> —Jujuy	AF099251	43
<i>Liolaemus austromendocinus</i>	AF099239	43
<i>Liolaemus bellii</i>	AF099223	43
<i>Liolaemus bibronii</i>	AF099221	43
<i>Liolaemus bitaeniatus</i>	AF099219	43
<i>Liolaemus boulengeri</i> —Mendoza	AF099275	43
<i>Liolaemus buergeri</i>	AF099236	43
<i>Liolaemus capillitas</i>	AF099234	43
<i>Liolaemus ceii</i>	AF099237	43

<i>Liolaemus chacoensis</i>	AF099270	43
<i>Liolaemus [alticolor] chaltin</i>	AF099218	43
<i>Liolaemus chiliensis</i>	AF099224	43
<i>Liolaemus coeruleus</i>	AF099217	43
<i>Liolaemus cuyanus</i>	AF099252	43
<i>Liolaemus cyanogaster</i>	AF099225	43
<i>Liolaemus darwini</i> —La Rioja	AF099274	43
<i>Liolaemus dorbignyi</i>	AF099248	43
<i>Liolaemus elongatus</i> —Mendoza	AF099240	43
<i>Liolaemus famatinae</i>	AF099246	43
<i>Liolaemus fitzingerii</i>	AF099253	43
<i>Liolaemus fuscus</i>	AF099232	43
<i>Liolaemus gracilis</i>	AF099222	43
<i>Liolaemus [darwini—Mendoza] grosseorum</i>	AF099272	43
<i>Liolaemus irregularis</i>	AF099268	43
<i>Liolaemus koslowskyi</i>	AF099264	43
<i>Liolaemus laurenti</i>	AF099273	43
<i>Liolaemus lemniscatus</i>	AF099229	43
<i>Liolaemus leopardinus</i>	AF099235	43
<i>Liolaemus lineomaculatus</i>	AF099241	43
<i>Liolaemus lutzae</i>	AF099255	43
<i>Liolaemus magellanicus</i>	AF099243	43
<i>Liolaemus melanops</i>	AF099261	43

<i>Liolaemus monticola</i>	AF099230	43
<i>Liolaemus multicolor</i>	AF099250	43
<i>Liolaemus multimaculatus</i>	AF099257	43
<i>Liolaemus nigroviridis</i>	AF099233	43
<i>Liolaemus nitidus</i>	AF099231	43
<i>Liolaemus occipitalis</i>	AF099256	43
<i>Liolaemus olongasta</i>	AF099271	43
<i>Liolaemus orientalis</i>	AF099247	43
<i>Liolaemus ornatus</i>	AF099266	43
<i>Liolaemus petrophilus</i>	AF099238	43
<i>Liolaemus pictus</i> —Neuquén	AF099226	43
<i>Liolaemus pictus</i> —Río Negro	LTU82684	43
<i>Liolaemus poecilochromus</i>	AF099249	43
<i>Liolaemus pseudoanomalus</i>	AF099254	43
<i>Liolaemus quilmes</i>	AF099265	43
<i>Liolaemus robertmertensi</i>	AF099220	43
<i>Liolaemus rothi</i>	AF099262	43
<i>Liolaemus ruibali</i>	AF099244	43
<i>Liolaemus salinicola</i>	AF099259	43
<i>Liolaemus scapularis</i>	AF099258	43
<i>Liolaemus somuncurae</i>	AF099242	43
<i>Liolaemus tenuis</i>	AF099228	43
<i>Liolaemus uspallatensis</i>	AF099269	43

<i>Liolaemus wiegmanni</i>	AF099260	43
<i>Liolaemus zapallarensis</i>	AF099227	43
<i>Phymaturus palluma</i>	AF099216	43
<i>Phymaturus somuncurensis</i>	AF049685	40
