Table S1. Voucher data for treefrogs used in this study. Samples in bold were used in mutlilocus species tree analyses. Abbreviations as follows: Chihuahuan Desert (CD), Colorado Plateau (CP), Central Mexican Plateau (CMP), southwestern Central Mexican Plateau (CMPsw), Durango (DGO), Eastern (E), southern Sierra Madre Occidental (OcS), southern Sierra Madre Oriental (OrS), Sonoran Desert (SD), and Western (W). Museum codes follow Leviton *et al.* (1985). Nonstandard abbreviations are as follows: AMCC, Ambrose Monell Cryo Collection at the AMNH; MZFC, Museo de Zoología 'Alfonso L. Herrera', Facultad de Ciencias, Universidad Nacional Autónoma de México; UANL, Universidad Autónoma de Nuevo León; ANMO, Adrián Nieto-Montes de Oca; EMD, Estrella Mociño-Deloya; EMO, Eric O'Neill; FRMP, Fernando Ricardo Mendoza-Paz; FMQ, Fernando Mendoza-Quijano; HEL, Hector Elioso León; JAC, Jonathan A. Campbell; JJ, Jeremy Jungles; JJW, John J. Wiens; KK, Katy Klymus; OFV, Oscar Flores-Villela; PB, Paul Barber; RWB, Robert W. Bryson, Jr.; UOGV, Uri Omar García-Vázquez.

Sample number (MX)	Voucher number	Biological species	mtDNA lineage	Locality
135	LSU H-19830	*cinerea*	*cinerea*	USA: Louisiana
136	LSU H-2531	*versicolor*	*versicolor*	USA: Alabama
232	UOGV 778	*arboricola*	*arboricola*	Mexico: Guerrero: Parque Ecológico Laguna de San Isidro, Mpio de Chilpancingo
233	HEL (8)	*arboricola*	*arboricola*	Mexico: Guerrero: Omiltemi
150	RWB 07322	*arenicolor*	*arenicolor* CD	Mexico: DGO: SE Mesa de las Navar
157	RWB 07276	*arenicolor*	*arenicolor* CD	Mexico: Chihuahua: Rancho El Nido, Sierra del Nido
158	PB 27/130	*arenicolor*	*arenicolor* CD	USA: New Mexico: Grant Co: Mogollon Creek, Pinos Altos Mountains
178	PB 123/24	*arenicolor*	*arenicolor* CD	USA: Arizona: Cochise Co: Price Canyon, Chiricahua Mountains

222	RWB 07328	*arenicolor*	*arenicolor* CD	Mexico: Chihuahua: E Mesa de Agostadero
223	RWB uncat.	*arenicolor*	*arenicolor* CD	USA: Texas: Jeff Davis Co: Musquiz Canyon, Hwy 118
247	RWB 07293	*arenicolor*	*arenicolor* CD	Mexico: Chihuahua: N Creel
248	MVZ 133015	*arenicolor*	*arenicolor* CD	Mexico: Chihuahua: 1.3 mi E (by road) Chuhuichupa
329	RWB uncat.	*arenicolor*	*arenicolor* CD	USA: New Mexico: Hidalgo Co: Coronado National Forest, W Cloverdale
330	PB 94/17	*arenicolor*	*arenicolor* CD	USA: Arizona: Gila Co: Houston Creek
361	JAC 29275	*arenicolor*	*arenicolor* CD	Mexico: Chihuahua: approx. 23 km S Hidalgo de Parral on Hwy 45
376	PB 125/25	*arenicolor*	*arenicolor* CD	USA: New Mexico: Grant Co: Gallinas Creek, Black Mountains
378	PB 32/28	*arenicolor*	*arenicolor* CD	USA: New Mexico: Catron Co: Pueblo Creek, San Francisco Mountains
384	PB 96/18	*arenicolor*	*arenicolor* CD	USA: Arizona: Coconino Co: E Clear Creek
151	UANL uncat.	*arenicolor*	*arenicolor* CMP	Mexico: Jalisco: Vaquerias
152	RWB 07216	*arenicolor*	*arenicolor* CMP	Mexico: Guanajuato: Sierra Santa Rosa
155	FMQ 7238	*arenicolor*	*arenicolor* CMP	Mexico: Zacatecas: Sierra de Organos
156	FMQ 4460	*arenicolor*	*arenicolor* CMP	Mexico: Querétaro: Zamorano
249	FRMP 171	*arenicolor*	*arenicolor* CMP	Mexico: DGO: Rancho Santa Bárbara
250	ANMO 1337	*arenicolor*	*arenicolor* CMP	Mexico: Guanajuato: km 25, Hwy 57 between La Sauceda and San Miguel de Allende
251	OFV 289	*arenicolor*	*arenicolor* CMP	Mexico: Hidalgo: 3 km N Epazoyucan
252	AMNO 1341	*arenicolor*	*arenicolor* CMP	Mexico: Jalisco: approx. 30.5 km NE Lagos de Moreno on Hwy 80
256	MZFC 9245	*arenicolor*	*arenicolor* CMP	Mexico: Querétaro: Pueblo Nuevo, approx. 2 km E Cadereyta de Montes
257	MZFC 9365	*arenicolor*	*arenicolor* CMP	Mexico: Querétaro: Chiteje de la Cruz, Mpo. Amealco
258	MZFC 11078	*arenicolor*	*arenicolor* CMP	Mexico: San Luis Potosí: 2 km W Álvarez
259	MZFC 11215	*arenicolor*	*arenicolor* CMP	Mexico: San Luis Potosí: Colonia Insurgentes, ca. 2.5 km W San Luis Potosí on Hwy 80
261	RWB 06121	*arenicolor*	*arenicolor* CMP	Mexico: Zacatecas: N Ejido Mimbres, ca. 15 mi N Valpariaso

354	JAC 26843	*arenicolor*	*arenicolor* CMP	Mexico: DGO: off rd. from Cd. DGO south to La Flor
362	KK HAR08-3	*arenicolor*	*arenicolor* CMP	Mexico: Guanajuato: Cerro Colorado
153	AQM Ha11	*arenicolor*	*arenicolor* CMPsw	Mexico: Michoacán: Cuenca Rio Chiquito, Morelia
176	AQM Ha24	*arenicolor*	*arenicolor* CMPsw	Mexico: Michoacán: Cuenca Rio Chiquito, Morelia
246	RWB 0699	*arenicolor*	*arenicolor* CMPsw	Mexico: Aguascalientes: W La Congoja, Sierra Fria
253	RWB 0793	*arenicolor*	*arenicolor* CMPsw	Mexico: Michoacán: road to Quitupan south of Hwy 110
355	JAC 26899	*arenicolor*	*arenicolor* CMPsw	Mexico: Zacatecas: Hwy 54 just N Tabasco
356	JAC 26923	*arenicolor*	*arenicolor* CMPsw	Mexico: Jalisco: Tapalpa
357	JAC 26960	*arenicolor*	*arenicolor* CMPsw	Mexico: Michoacán: Hwy 14 W Uruapan
360	JAC 28278	*arenicolor*	*arenicolor* CMPsw	Mexico: Colima: Agua Fria, close to Minatitlan off Hwy 98
159	PB 11/68	*arenicolor*	*arenicolor* CP	USA: Arizona: Coconino Co: Pumphouse Wash
292	PB 75/12	*arenicolor*	*arenicolor* CP	USA: Arizona: Coconino Co: Geronimo Spring
347	KK HAR130	*arenicolor*	*arenicolor* CP	USA: Utah: Kane Co: Oak Creek, Zion
370	PB 77/12	*arenicolor*	*arenicolor* CP	USA: Arizona: Coconino Co: Geronimo Spring
414	KK 153	*arenicolor*	*arenicolor* CP	USA: Colorado: Mesa Co: John Brown Canyon
415	KK 148	*arenicolor*	*arenicolor* CP	USA: Utah: Kane Co: Coyote Gulch
149	RWB 07359	*arenicolor*	*arenicolor* SD	Mexico: Sonora: S Yécora
177	PB 51/8	*arenicolor*	*arenicolor* SD	USA: Arizona: Santa Cruz Co: Madera Canyon, Santa Rita Mountains
260	MZFC 15177	*arenicolor*	*arenicolor* SD	Mexico: Sonora: approx. 1 km N Bacoachi on Hwy 89
293	PB 28/3	*arenicolor*	*arenicolor* SD	USA: Arizona: Graham Co: Tripp Canyon, Pinaleño Mountains
294	PB 39/5	*arenicolor*	*arenicolor* SD	USA: Arizona: Santa Cruz Co: Gardner Canyon, Santa Rita Mountains
368	PB 110/21	*arenicolor*	*arenicolor* SD	USA: Arizona: Pima Co: Molino Canyon, Santa Catalina Mountains
371	PB 42/7	*arenicolor*	*arenicolor* SD	USA: Arizona: Santa Cruz Co: Harshaw Canyon, Patagonia Mountains

387	EMO GC0138	*arenicolor*	*wrightorum*	USA: Arizona: Coconino Co: Shinumu Creek, Grand Canyon
388	EMO GC 0141	*arenicolor*	*wrightorum*	USA: Arizona: Coconino Co: Shinumu Creek, Grand Canyon
389	KK TC71	*arenicolor*	*wrightorum*	USA: Arizona: Coconino Co: Diamond Creek, Grand Canyon
390	KK TC72	*arenicolor*	*wrightorum*	USA: Arizona: Coconino Co: Diamond Creek, Grand Canyon
154	UANL uncat.	Balsas	Balsas	Mexico: Jalisco: 10 mi (by road) S of El Platanar, just north of La Esperanza
254	MZFC (CDR 135)	Balsas	Balsas	Mexico: Puebla: Ejido Maravillas, Mpo. Teotlalco
255	MZFC 13918	Balsas	Balsas	Mexico: Puebla: Zapotitlán de Salinas, Tilapa
348	KK HAR08-2	Balsas	Balsas	Mexico: Oaxaca: Corral de Piedra, SE Huajuapan de León
349	KK HAR08-1	Balsas	Balsas	Mexico: Puebla: Caltepec
358	JAC 27496	Balsas	Balsas	Mexico: Morelos: Puente de Ixtla
359	JAC 27605	Balsas	Balsas	Mexico: Michoacán: ca. 7 km S Tzitzio on Hwy 51
70	AMCC 117817	*euphorbiacea*	*euphorbiacea* E	Mexico: Oaxaca: Carr. Mitla-Ayutla
71	AMCC 117946	*euphorbiacea*	*euphorbiacea* E	Mexico: Oaxaca: 2.9 mi E Mitla
144	RWB 07107	*euphorbiacea*	*euphorbiacea* E	Mexico: Oaxaca: Llano de las Flores
145	RWB 07130	*euphorbiacea*	*euphorbiacea* E	Mexico: Oaxaca: Ixtlan de Juárez
235	ANMO 826	*euphorbiacea*	*euphorbiacea* W	Mexico: Oaxaca: Santa Lucía Monteverde
236	AMNO 1244	*euphorbiacea*	*euphorbiacea* W	Mexico: Oaxaca: Tlaxiaco
237	ANMO 1295	*euphorbiacea*	*euphorbiacea* W	Mexico: Oaxaca: Suchixtlán
143	MZFC (JLAL 305)	*euphorbiacea*	*plicata*	Mexico: Puebla: Carr. Vicente Guerrero-Alcomulga, Sierra Negra
343	UOGV 1685	*euphorbiacea*	*plicata*	Mexico: Veracruz: Acultzingo
34	RWB 0656	*eximia*	*eximia* CMP	Mexico: Michoacán: Zacapu
35	RWB 06108	*eximia*	*eximia* CMP	Mexico: Aguascalientes: Sierra Fria
37	RWB 06234	*eximia*	*eximia* CMP	Mexico: San Luis Potosí: Las Lagunas, Mpo. Guadalcalzar

65	AQM (1)	*eximia*	*eximia* CMP	Mexico: Michoacán: Morelia
68	AQM (4)	*eximia*	*eximia* CMP	Mexico: Michoacán: San Miguel del Monte
127	RWB 0798	*eximia*	*eximia* CMP	Mexico: Michoacán: San Jose de Gracía
128	RWB 07209	*eximia*	*eximia* CMP	Mexico: Guanajuato: Sierra Santa Rosa
131	EMD 257	*eximia*	*eximia* CMP	Mexico: Estado de México: Atlacomulco
170	FMQ 4245	*eximia*	*eximia* CMP	Mexico: Querétaro: Pinal de Amoles
172	MZFC 13791	*eximia*	*eximia* CMP	Mexico: Michoacán: La Quemada
238	HEL 54	*eximia*	*eximia* CMP	Mexico: Aguascalientes: Aguascalientes
239	MZFC 14161	*eximia*	*eximia* CMP	Mexico: Distrito Federal: Xochimilco
240	HEL 144	*eximia*	*eximia* CMP	Mexico: Michoacán: Pátzcuaro
242	RWB 0847	*eximia*	*eximia* CMP	Mexico: Michoacán: Aporo
245	UOGV 1269	*eximia*	*eximia* CMP	Mexico: Guanajuato: San Felipe
345	KK HEX08-3	*eximia*	*eximia* CMP	Mexico: Guanajuato: Cerro Colorado
403	JAC 27281	*eximia*	*eximia* CMP	Mexico: Estado de México: Avandaro
138	UOGV 1280	*eximia*	*eximia* DGO	Mexico: DGO: Pueblo Nuevo
243	MVZ 231752	*eximia*	*eximia* DGO	Mexico: DGO: La Ciudad
436	RWB 0935	*eximia*	*eximia* DGO	Mexico: DGO: La Ermita
38	RWB 06120	*eximia*	*eximia* OcS	Mexico: Zacatecas: Valparaíso
40	UANL uncat.	*eximia*	*eximia* OcS	Mexico: Jalisco: Tapalpa
129	RWB 07237	*eximia*	*eximia* OcS	Mexico: Querétaro: Nuevo San Joaquin
405	JAC 26799	*eximia*	*eximia* OcS	Mexico: DGO: Mezquital
29	UOGV 752	*eximia*	*eximia* OrS	Mexico: Tlaxcala: Santa Anita Huiloac
130	FMQ 4097	*eximia*	*eximia* OrS	Mexico: Hidalgo: Tianguistengo

148	FMQ (GQM 049)	*eximia*	*eximia* OrS	Mexico: Hidalgo: Tlahuiltepa
175	FMQ 4114	*eximia*	*eximia* OrS	Mexico: Hidalgo: Palo Gacho
241	HEL 139	*eximia*	*eximia* OrS	Mexico: Puebla: Cd. Puebla
132	MZFC 4813	*eximia*	*plicata*	Mexico: Puebla: Chignahuapan
173	MZFC 4807	*eximia*	*plicata*	Mexico: Tlaxcala: Tlaxco
31	RWB 06152	*eximia*	*wrightorum*	Mexico: DGO: Rancho Santa Barbara
33	RWB 0681	*plicata*	*plicata*	Mexico: Estado de México: Los Tachos
134	MVZ 149755	*plicata*	*plicata*	Mexico: Estado de México: Río Frio
139	AQM HP10	*plicata*	*plicata*	Mexico: Michoacán: Los Azufres
140	RWB 0763	*plicata*	*plicata*	Mexico: Morelos: Zempoala
141	MZFC 11089	*plicata*	*plicata*	Mexico: Veracruz: Las Vigas
142	MXFC 1393	*plicata*	*plicata*	Mexico: Estado de México: Zoquiapán
174	MZFC 11819	*plicata*	*plicata*	Mexico: Estado de México: Ocuilan
234	UOGV 1670	*plicata*	*plicata*	Mexico: Distrito Federal: La Magdalena Contreras
344	FMQ 3711	*plicata*	*plicata*	Mexico: Veracruz: Volcán Orizaba
353	FMQ 4309	*plicata*	*plicata*	Mexico: Hidalgo: El Chico
326	JJW 2260	*walkeri*	*walkeri*	Mexico: Chiapas: San Cristóbal de la Casas
435	RWB uncat.	*walkeri*	*walkeri*	Mexico: Chiapas: 16 km SE San Cristóbal de la Casas
32	UANL 6748	*wrightorum*	*wrightorum*	Mexico: Chihuahua: El Pima, Mpo. Temosachic
39	FRMP 208	*wrightorum*	*wrightorum*	Mexico: Chihuahua: Mojarachic
121	RWB 07330	*wrightorum*	*wrightorum*	USA: Arizona: Coconino Co: near Bellemont
122	RWB 07379	*wrightorum*	*wrightorum*	USA: Arizona: Cochise Co: Scotia Canyon
123	JJ uncat.	*wrightorum*	*wrightorum*	USA: New Mexico: Grant Co: Mogollon Mountains

124	RWB 07338	*wrightorum*	*wrightorum*	Mexico: Sonora: Yécora
125	RWB 07295	*wrightorum*	*wrightorum*	Mexico: Chihuahua: near Guachoci
126	RWB 07304	*wrightorum*	*wrightorum*	Mexico: DGO: SE Mesa de las Navar
146	MVZ 231744	*wrightorum*	*wrightorum*	Mexico: Chihuahua: Chuhuichupa
147	MVZ 231750	*wrightorum*	*wrightorum*	Mexico: Chihuahua: El Vergel
340	RWB 08100	*wrightorum*	*wrightorum*	Mexico: Chihuahua: Ejido Zorillo
341	FMQ 4303	*wrightorum*	*wrightorum*	Mexico: Chihuahua: Colonia García

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