Table S4. Collection data, museum numbers, and altitude of localities of the specimens used in the DNA amplification and physiological measurements. Latitude and longitude coordinates are provided in references (1-4).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Genus** | **Species** | **Museum** | **Country** | **Locality**  **(sequences and physiology)** | **Altitude (m)** | **Other Localities**  **(physiology)** | **Altitude (m)** |
| *Ademomera* | *andreae* | QCAZ15998  (Outgroup) | Ecuador | Zamora Chinchipe: near Zamora | 980 | NA |  |
| *Bufo* | *nebulifer* | TNHC 62000 (Outgroup) | USA | Texas: San Saba County, Colorado Bend State Park | -- | NA |  |
| *Centrolene* | *grandisonae* | QCAZ16512  (Outgroup) | Ecuador | Pichincha: Manuel Cornejo A (Tandapi), via Atenas | 950 | NA |  |
| *Ceratophrys* | *cornuta* | KU202561  (Outgroup) | Perú | Madre de Dios: Cusco Amazónico | 200 | NA |  |
| *Crossodactylus* | *schmidti* | MLPA 1414  (Outgroup) | Argentina | Misiones: Aristobulo del Valle, Balneario Cunapirú | 450 | NA |  |
| *Lithodytes* | *lineatus* | QCAZ16621  (Outgroup) | Ecuador | Morona Santiago: Méndez | 550 | NA |  |
| *Allobates* | *femoralis* | QCAZ16484 | Ecuador | Francisco de Orellana: Parque Nacional Yasuní-Estación PUCE | 230 | Colombia: Amazonas: Leticia  Ecuador: Sucumbíos: Lumbaqui | 83  260 |
| *Allobates* | *insperatus* | QCAZ16533 | Ecuador | Francisco de Orellana: Parque Nacional Yasuní-Estación PUCE | 230 | -- |  |
| *Allobates* | *juanii* | TNHCFS4978 | Colombia | Meta: Villavicencio, Villavicencio-Restrepo road | 411 | -- |  |
| *Allobates* | *kingsburyi* | QCAZ16523 | Ecuador | Zamora Chinchipe: Río Chicaña | 1085 | Ecuador: Zamora Chinchipe: Panguitza | 870 |
| *Allobates* | *algorei* | TNHCFS5551 | Venezuela | Táchira: road from San Cristobal to Río Negro via el Piñal | 529 | -- |  |
| *Allobates* | *talamancae* | QCAZ16551 | Ecuador | Pichincha: Río Sábalo, ca. Pedro Vicente Maldonado | 191 | Panamá: Panamá: Lago Bayano  Colombia: Chocó: Quibdó | 60  50 |
| *Allobates* | *zaparo* | QCAZ16603 | Ecuador | Napo: Jatun Sacha, via Ahuano | 390 | -- |  |
| *Ameerega* | *bilinguis* | QCAZ28835 | Ecuador | Sucumbíos: Laguna Grande-Neotropic, Reserva de Producción Faunística Cuyabeno | 260 | Ecuador: Fco. Orellana: Parque Nacional Yasuní-Estación PUCE | 230 |
| *Ameerega* | *hahneli* | QCAZ19240 | Ecuador | Francisco de Orellana: Parque Nacional Yasuní-Estación PUCE | 230 | Ecuador: Pastaza: Canelos | 631 |
| *Ameerega* | *parvula* | QCAZ16584 | Ecuador | Morona Santiago: near Méndez | 550 | Ecuador: Napo: Jatun Sacha, Ahuano | 390 |
| *Ameerega* | *trivittata* | TNHCFS4966 | Colombia | Amazonas: Leticia, Cerca Viva | 83 | -- |  |

Table S4 (Cont.). Collection data, museum numbers, and altitude of localities of the specimens used in the DNA amplification and physiological measurements. Latitude and longitude coordinates are provided in references (1-4).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Genus** | **Species** | **Museum** | **Country** | **Locality**  **(sequences and physiology)** | **Altitude (m)** | **Other Localities**  **(physiology)** | **Altitude (m)** |
| *Anomaloglossus* | *verbeeksnyderorum* | TNHCFS5631 | Venezuela | Amazonas: Puerto Ayacucho, Tobogán | 81 | -- |  |
| *Aromobates* | aff. *alboguttatus* | TNHCFS5540 | Venezuela | Mérida: Santa Cruz de Mora via Los Ranchos | 1193 | -- |  |
| *Aromobates* | *saltuensis* | TNHCFS5541 | Venezuela | Táchira: San Félix, San Juan de Colón | 751 | -- |  |
| *Colostethus* | *fugax* | QCAZ16513 | Ecuador | Morona Santiago: 2 km E Santiago | 495 | -- |  |
| *Colostethus* | *panamansis* | TNHCFS4810 | Panamá | Colón: Fort Sherman | 189 | -- |  |
| *Colostethus* | *pratti* | TNHCFS4807 | Panamá | Colón: Parque Nacional Portobello | 50 | -- |  |
| *Dendrobates* | *auratus* | TNHCFS4811 | Panamá | Coclé: El Cope, Parque Nacional General de División Omar Torrijos Herrera | 782 | Panamá: Colón: Fort Sherman | 189 |
| *Dendrobates* | *bombetes* | TNHCFS4946 | Colombia | Quindío: Barbas, Finlandia, Hacienda Lusitania | 1958 | Colombia: Valle: Buga-Buenaventura road | 1610 |
| *Dendrobates* | *captivus* | QCAZ27442 | Ecuador | Zamora Chinchipe: near Panguitza | 870 | -- |  |
| *Dendrobates* | *claudiae* | KS9 | Panamá | Bocas del Toro: Isla Colón, Bocas del Drago | 11 | -- |  |
| *Dendrobates* | *duellmani* | QCAZ16559 | Ecuador | Francisco de Orellana: Parque Nacional Yasuní-Estación PUCE | 230 | -- |  |
| *Dendrobates* | *galactonotus* | TNHCFS4889 | Brazil | Pet Trade | n.d. | -- |  |
| *Dendrobates* | *histrionicus* | TNHCFS4985 | Colombia | Chocó: Quibdó, La Troje | 50 | -- |  |
| *Dendrobates* | *lamasi* | JCS | Perú | Pet Trade | n.d. | -- |  |
| *Dendrobates* | *leucomelas* | TNHCFS5639 | Venezuela | Amazonas: Puerto Ayacucho, Tobogán | 81 | -- |  |
| *Dendrobates* | *pumilio* | TNHCFS4814 | Panamá | Bocas del Toro: Isla Colón, Bocas del Drago (Dragomar) | 11 | -- |  |
| *Dendrobates* | sp*.* Quibdo | TNHCFS4943 | Colombia | Chocó: Quibdó, La Troje | 50 | -- |  |
| *Dendrobates* | *sylvaticus* | QCAZ16563 | Ecuador | Esmeraldas: near Quingue | 306 | Ecuador: Sto. Domingo: near Santo Domingo de los Colorados | 604 |
| *Dendrobates* | *tinctorius* | TNHC64416 | Surinam | Pet Trade | n.d. | -- |  |
| *Dendrobates* | *truncatus* | TNHCFS4979 | Colombia | Tolima: Mariquita, vereda Malabares | 587 | -- |  |

Table S4 (Cont.). Collection data, museum numbers, and altitude of localities of the specimens used in the DNA amplification and physiological measurements. Latitude and longitude coordinates are provided in references (1-4).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Genus** | **Species** | **Museum** | **Country** | **Locality**  **(sequences and physiology)** | **Altitude (m)** | **Other Localities**  **(physiology)** | **Altitude (m)** |
| *Dendrobates* | *ventrimaculatus* | JCS | Surinam | Pet Trade | n.d. | Colombia: Amazonas: Leticia  Ecuador: Francisco de Orellana: Parque Nacional Yasuní-Estación PUCE | 83  230 |
| *Dendrobates* | *virolinensis* | TNHCFS4950 | Colombia | Santander: Virolín, Costilla de Fara | 1767 | -- |  |
| *Epipedobates* | *anthonyi* | QCAZ16597 | Ecuador | Loja: Macará-Catacocha | 1135 | Ecuador: El Oro: Pasaje-Girón | 1512 |
| *Epipedobates* | *boulengeri* | QCAZ16574 | Ecuador | Esmeraldas: A 3 Km de Durango, road to San Lorenzo | 253 | -- |  |
| *Epipedobates* | *machalilla* | QCAZ16527 | Ecuador | Manabí: Río Ayampe | 70 | -- |  |
| *Epipedobates* | sp. F | QCAZ16590 | Ecuador | Pichincha: Unión del Toachi | 694 | Ecuador: Pichincha: Mindo | 1525 |
| *Epipedobates* | *tricolor* | QCAZ21977 | Ecuador | Cotopaxi: Corazón-Moraspungo | 1250 | -- |  |
| *Hyloxalus* | *awa* | QCAZ16502 | Ecuador | Esmeraldas: Laguna de Cubes, Montes del Mache | 350 | Ecuador: Pichincha: Unión del Toachi | 694 |
| *Hyloxalus* | *azureiventris* | KS32 | Perú | San Martín: Cainarachi Valley | 350 | Pet Trade | n.d. |
| *Hyloxalus* | *bocagei* | QCAZ37259 | Ecuador | Sucumbíos: La Libertad road to La Virgen | 1330 | -- |  |
| *Hyloxalus* | *elachyhistus* | QCAZ16517 | Ecuador | El Oro: Torata-Balsas road | 640 | -- |  |
| *Hyloxalus* | *maculosus* | QCAZ37262 | Ecuador | Sucumbíos: Lumbaqui | 260 | Ecuador: Pastaza: Hola Vida Reserve | 631 |
| *Hyloxalus* | *nexipus* | QCAZ16537 | Ecuador | Morona Santiago: Indanza-San Miguel del Conchay | 855 | Ecuador: Morona Santiago: near Méndez | 550 |
| *Hyloxalus* | *sauli* | QCAZ16543 | Ecuador | Francisco de Orellana: Parque Nacional Yasuní-Estación PUCE | 230 | -- |  |
| *Hyloxalus* | *subpunctatus* | TNHCFS4957 | Colombia | Boyacá: Chiquinquira | 2575 | -- |  |
| *Hyloxalus* | *toachi* | QCAZ16549 | Ecuador | Carchi: Río Baboso near Lita | 534 | Ecuador: Pichincha: Unión del Toachi | 694 |
| *Hyloxalus* | *vertebralis* | QCAZ16553 | Ecuador | Azuay: El Jordán (cerca a Paguancay) | 2424 | -- |  |
| *Mannophryne* | *collaris* | TNHCFS5507 | Venezuela | Mérida: El Estanquillo | 1120 | Venezuela: Mérida: road from Pregonero to La Trampa | 1192 |
| *Phyllobates* | *aurotaenia* | TNHCFS4990 | Colombia | Chocó: Quibdó road to Pacuritas | 50 | -- |  |
| *Phyllobates* | *terribilis* | TNHC64420 | Colombia | Pet Trade | n.d. | -- |  |

Table S4 (Cont.). Collection data, museum numbers, and altitude of localities of the specimens used in the DNA amplification and physiological measurements. Latitude and longitude coordinates are provided in references (1-4).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Genus** | **Species** | **Museum** | **Country** | **Locality**  **(sequences and physiology)** | **Altitude (m)** | **Other Localities**  **(physiology)** | **Altitude (m)** |
| *Rheobates* | *palmatus* | TNHCFS4955 | Colombia | Boyacá: Villa de Leiva | 2118 | Colombia: Cundinamarca: Las Brisas | 2005 |
| *Silverstoneia* | *flotator* | TNHCFS4804 | Panamá | Coclé: El Cope, Parque Nacional General de División Omar Torrijos Herrera | 782 | -- |  |
| *Silverstoneia* | *nubicola* | TNHCFS4942 | Colombia | Chocó: Quibdó, La Troje | 50 | -- |  |

Table S4 (Cont.). Metabolic measurements and mass of poison frogs. Species in **Bold** with a \* were used in the multivariate analyses.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Genus | Species |  | Body Mass (g) | | | | RMR (VO2 ml\*h-1) | | | | AMR (VO2 ml\*h-1) | | | | Scope | | Factorial |
|  |  | *N* | Mean | s.e.m. | Min | Max | Mean | s.e.m. | Min | Max | Mean | s.e.m. | Min | Max | Raw | Mass-specific | Scope |
| ***Allobates*** | ***femoralis*\*** | 6 | 1.246 | 0.103 | 0.940 | 1.570 | 0.223 | 0.031 | 0.135 | 0.355 | 1.104 | 0.228 | 0.613 | 2.159 | 0.881 | 0.707 | 4.942 |
| ***Allobates*** | ***insperatus*\*** | 4 | 0.551 | 0.041 | 0.430 | 0.605 | 0.082 | 0.018 | 0.056 | 0.133 | 0.609 | 0.030 | 0.535 | 0.678 | 0.527 | 0.956 | 7.459 |
| *Allobates* | *juanii* | 2 | 0.685 | 0.085 | 0.600 | 0.770 | 0.147 | 0.064 | 0.083 | 0.211 | 0.766 | 0.008 | 0.758 | 0.774 | 0.619 | 0.904 | 5.219 |
| *Allobates* | *kingsburyi* | 8 | 0.875 | 0.102 | 0.595 | 1.300 | 0.126 | 0.016 | 0.054 | 0.219 | 0.644 | 0.032 | 0.546 | 0.786 | 0.518 | 0.592 | 5.103 |
| *Allobates* | *algorei* | 6 | 0.585 | 0.013 | 0.540 | 0.620 | 0.168 | 0.019 | 0.100 | 0.217 | 0.593 | 0.071 | 0.366 | 0.805 | 0.425 | 0.726 | 3.520 |
| ***Allobates*** | ***talamancae*\*** | 5 | 0.880 | 0.087 | 0.605 | 1.150 | 0.080 | 0.014 | 0.049 | 0.126 | 0.714 | 0.050 | 0.578 | 0.797 | 0.634 | 0.720 | 8.890 |
| ***Allobates*** | ***zaparo*\*** | 10 | 1.615 | 0.133 | 1.010 | 2.510 | 0.299 | 0.029 | 0.163 | 0.458 | 1.919 | 0.108 | 1.381 | 2.535 | 1.620 | 1.003 | 6.422 |
| ***Ameerega*** | ***bilinguis*\*** | 11 | 0.949 | 0.077 | 0.570 | 1.515 | 0.180 | 0.011 | 0.128 | 0.260 | 0.974 | 0.051 | 0.691 | 1.213 | 0.794 | 0.837 | 5.408 |
| ***Ameerega*** | ***hahneli*\*** | 6 | 0.343 | 0.020 | 0.295 | 0.405 | 0.100 | 0.011 | 0.075 | 0.138 | 0.516 | 0.013 | 0.466 | 0.550 | 0.416 | 1.213 | 5.146 |
| ***Ameerega*** | ***parvula*\*** | 8 | 1.569 | 0.049 | 1.365 | 1.790 | 0.293 | 0.033 | 0.137 | 0.412 | 1.497 | 0.170 | 0.719 | 2.350 | 1.204 | 0.767 | 5.111 |
| ***Ameerega*** | ***trivittata*\*** | 3 | 5.512 | 0.994 | 4.515 | 7.500 | 0.964 | 0.178 | 0.785 | 1.320 | 6.632 | 0.924 | 5.523 | 8.468 | 5.668 | 1.028 | 6.879 |
| *Anomaloglossus* | *verbeeksnyderorum* | 11 | 0.808 | 0.051 | 0.610 | 1.140 | 0.202 | 0.022 | 0.094 | 0.372 | 0.730 | 0.068 | 0.456 | 1.119 | 0.528 | 0.653 | 3.607 |
| *Aromobates* | *aff. alboguttatus* | 17 | 1.312 | 0.114 | 0.560 | 2.330 | 0.248 | 0.022 | 0.129 | 0.466 | 0.916 | 0.093 | 0.327 | 1.823 | 0.668 | 0.509 | 3.701 |
| *Aromobates* | *saltuensis* | 6 | 1.498 | 0.138 | 1.190 | 1.970 | 0.212 | 0.046 | 0.099 | 0.415 | 1.249 | 0.202 | 0.597 | 2.015 | 1.037 | 0.692 | 5.903 |
| *Colostethus* | *fugax* | 4 | 0.959 | 0.089 | 0.720 | 1.100 | 0.124 | 0.013 | 0.093 | 0.147 | 0.667 | 0.054 | 0.525 | 0.783 | 0.543 | 0.566 | 5.374 |
| ***Colostethus*** | ***panamansis\**** | 5 | 0.973 | 0.093 | 0.693 | 1.167 | 0.096 | 0.004 | 0.088 | 0.109 | 1.159 | 0.085 | 0.971 | 1.412 | 1.063 | 1.092 | 12.122 |
| ***Colostethus*** | ***pratti*\*** | 12 | 0.806 | 0.031 | 0.657 | 0.950 | 0.111 | 0.008 | 0.072 | 0.179 | 1.133 | 0.051 | 0.669 | 1.324 | 1.022 | 1.268 | 10.203 |
| ***Dendrobates*** | ***auratus*\*** | 15 | 1.996 | 0.071 | 1.640 | 2.520 | 0.306 | 0.039 | 0.169 | 0.734 | 2.810 | 0.124 | 2.156 | 3.942 | 2.504 | 1.255 | 9.190 |
| *Dendrobates* | *bombetes* | 8 | 0.528 | 0.036 | 0.400 | 0.680 | 0.085 | 0.007 | 0.062 | 0.118 | 0.885 | 0.056 | 0.612 | 1.084 | 0.800 | 1.515 | 10.469 |
| *Dendrobates* | *captivus* | 6 | 0.484 | 0.025 | 0.405 | 0.565 | 0.087 | 0.014 | 0.061 | 0.154 | 0.602 | 0.039 | 0.487 | 0.719 | 0.515 | 1.064 | 6.952 |
| ***Dendrobates*** | ***claudiae*\*** | 1 | 0.217 | -- | -- | -- | 0.060 | -- | -- | -- | 0.652 | -- | -- | -- | 0.592 | 2.728 | 10.822 |
| *Dendrobates* | *duellmani* | 7 | 0.414 | 0.030 | 0.340 | 0.520 | 0.095 | 0.012 | 0.060 | 0.138 | 0.686 | 0.060 | 0.487 | 0.916 | 0.591 | 1.428 | 7.252 |
| *Dendrobates* | *galactonotus* | 4 | 3.589 | 0.293 | 3.035 | 4.095 | 0.323 | 0.009 | 0.307 | 0.348 | 4.970 | 0.225 | 4.534 | 5.581 | 4.647 | 1.295 | 15.379 |
| ***Dendrobates*** | ***histrionicus*\*** | 4 | 3.320 | 0.119 | 3.140 | 3.670 | 0.205 | 0.021 | 0.167 | 0.257 | 2.496 | 0.301 | 1.788 | 3.105 | 2.291 | 0.690 | 12.156 |
| *Dendrobates* | *lamasi* | 2 | 0.390 | 0.070 | 0.320 | 0.460 | 0.068 | 0.015 | 0.054 | 0.083 | 1.074 | 0.062 | 1.011 | 1.136 | 1.006 | 2.579 | 15.683 |
| *Dendrobates* | *leucomelas* | 12 | 2.243 | 0.138 | 1.323 | 2.990 | 0.414 | 0.055 | 0.134 | 0.819 | 3.167 | 0.273 | 2.000 | 4.672 | 2.753 | 1.227 | 7.648 |
| ***Dendrobates*** | ***pumilio*\*** | 17 | 0.538 | 0.017 | 0.407 | 0.670 | 0.067 | 0.003 | 0.049 | 0.093 | 0.698 | 0.026 | 0.508 | 0.924 | 0.631 | 1.173 | 10.452 |

Table S4 (Cont.). Metabolic measurements and mass of poison frogs. Species in **Bold** with a \* were used in the multivariate analyses.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Genus | Species |  | Body Mass (g) | | | | RMR (VO2 ml\*h-1) | | | | AMR (VO2 ml\*h-1) | | | | Scope | | Factorial |
|  |  | *N* | Mean | s.e.m. | Min | Max | Mean | s.e.m. | Min | Max | Mean | s.e.m. | Min | Max | Raw | Mass-specific | Scope |
| ***Dendrobates*** | **sp. Quibdo\*** | 3 | 0.160 | 0.010 | 0.140 | 0.170 | 0.051 | 0.019 | 0.018 | 0.084 | 0.577 | 0.263 | 0.288 | 1.102 | 0.526 | 3.288 | 11.330 |
| *Dendrobates* | *sylvaticus* | 11 | 2.889 | 0.133 | 2.100 | 3.420 | 0.400 | 0.054 | 0.169 | 0.696 | 3.328 | 0.188 | 2.382 | 4.725 | 2.928 | 1.013 | 8.323 |
| *Dendrobates* | *tinctorius* | 8 | 5.037 | 0.358 | 4.110 | 6.310 | 0.549 | 0.051 | 0.402 | 0.832 | 5.983 | 0.767 | 2.788 | 9.798 | 5.434 | 1.079 | 10.889 |
| *Dendrobates* | *truncatus* | 12 | 1.573 | 0.115 | 1.080 | 2.170 | 0.188 | 0.016 | 0.119 | 0.283 | 1.926 | 0.111 | 1.353 | 2.581 | 1.738 | 1.105 | 10.263 |
| ***Dendrobates*** | ***ventrimaculatus*\*** | 7 | 0.345 | 0.056 | 0.140 | 0.550 | 0.134 | 0.044 | 0.027 | 0.306 | 0.661 | 0.098 | 0.389 | 1.033 | 0.527 | 1.528 | 4.950 |
| *Dendrobates* | *virolinensis* | 8 | 0.475 | 0.051 | 0.330 | 0.730 | 0.094 | 0.006 | 0.067 | 0.120 | 0.639 | 0.030 | 0.556 | 0.818 | 0.545 | 1.147 | 6.800 |
| ***Epipedobates*** | ***anthonyi*\*** | 10 | 1.062 | 0.052 | 0.750 | 1.410 | 0.197 | 0.009 | 0.159 | 0.255 | 1.207 | 0.036 | 1.025 | 1.409 | 1.010 | 0.951 | 6.130 |
| ***Epipedobates*** | ***boulengeri*\*** | 16 | 0.427 | 0.018 | 0.310 | 0.540 | 0.097 | 0.012 | 0.046 | 0.193 | 0.329 | 0.023 | 0.163 | 0.512 | 0.232 | 0.543 | 3.381 |
| *Epipedobates* | *machalilla* | 11 | 0.323 | 0.022 | 0.230 | 0.475 | 0.083 | 0.009 | 0.047 | 0.144 | 0.385 | 0.049 | 0.159 | 0.704 | 0.302 | 0.935 | 4.657 |
| *Epipedobates* | sp. F | 10 | 0.457 | 0.026 | 0.320 | 0.550 | 0.065 | 0.005 | 0.043 | 0.094 | 0.596 | 0.036 | 0.436 | 0.765 | 0.531 | 1.162 | 9.135 |
| *Epipedobates* | *tricolor* | 4 | 0.801 | 0.051 | 0.690 | 0.895 | 0.164 | 0.022 | 0.114 | 0.211 | 0.836 | 0.089 | 0.621 | 1.055 | 0.672 | 0.839 | 5.097 |
| *Hyloxalus* | *awa* | 10 | 0.915 | 0.050 | 0.730 | 1.280 | 0.121 | 0.005 | 0.093 | 0.152 | 0.653 | 0.038 | 0.532 | 0.853 | 0.532 | 0.581 | 5.398 |
| *Hyloxalus* | *azureiventris* | 4 | 1.018 | 0.063 | 0.905 | 1.165 | 0.208 | 0.026 | 0.133 | 0.250 | 1.309 | 0.017 | 1.273 | 1.354 | 1.101 | 1.082 | 6.296 |
| *Hyloxalus* | *bocagei* | 11 | 1.514 | 0.141 | 0.830 | 2.280 | 0.288 | 0.029 | 0.182 | 0.497 | 2.307 | 0.220 | 1.154 | 3.524 | 2.019 | 1.334 | 8.016 |
| *Hyloxalus* | *elachyhistus* | 28 | 0.958 | 0.054 | 0.550 | 1.640 | 0.248 | 0.019 | 0.114 | 0.450 | 0.840 | 0.060 | 0.352 | 1.432 | 0.592 | 0.618 | 3.387 |
| ***Hyloxalus*** | ***maculosus*\*** | 20 | 2.300 | 0.144 | 1.000 | 3.520 | 0.340 | 0.030 | 0.129 | 0.585 | 2.003 | 0.152 | 0.782 | 3.500 | 1.663 | 0.723 | 5.892 |
| *Hyloxalus* | *nexipus* | 3 | 1.066 | 0.181 | 0.705 | 1.263 | 0.264 | 0.092 | 0.124 | 0.438 | 1.236 | 0.084 | 1.147 | 1.403 | 0.972 | 0.912 | 4.684 |
| ***Hyloxalus*** | ***sauli*\*** | 3 | 1.703 | 0.313 | 1.080 | 2.055 | 0.331 | 0.093 | 0.165 | 0.488 | 2.365 | 0.206 | 1.999 | 2.713 | 2.034 | 1.194 | 7.152 |
| *Hyloxalus* | *subpunctatus* | 7 | 0.799 | 0.070 | 0.637 | 1.180 | 0.151 | 0.013 | 0.109 | 0.203 | 0.901 | 0.059 | 0.774 | 1.241 | 0.750 | 0.939 | 5.975 |
| *Hyloxalus* | *toachi* | 5 | 0.680 | 0.082 | 0.520 | 0.970 | 0.117 | 0.017 | 0.070 | 0.168 | 0.872 | 0.074 | 0.611 | 1.028 | 0.755 | 1.110 | 7.481 |
| *Hyloxalus* | *vertebralis* | 8 | 0.698 | 0.051 | 0.515 | 0.960 | 0.127 | 0.021 | 0.063 | 0.236 | 0.567 | 0.052 | 0.340 | 0.719 | 0.440 | 0.630 | 4.452 |
| *Mannophryne* | *collaris* | 35 | 1.833 | 0.144 | 0.620 | 4.420 | 0.362 | 0.042 | 0.086 | 1.007 | 1.502 | 0.159 | 0.444 | 4.399 | 1.140 | 0.622 | 4.151 |
| *Phyllobates* | *aurotaenia* | 3 | 2.017 | 0.447 | 1.290 | 2.830 | 0.184 | 0.074 | 0.096 | 0.332 | 1.347 | 0.252 | 0.940 | 1.809 | 1.163 | 0.577 | 7.329 |
| *Phyllobates* | *terribilis* | 5 | 6.013 | 0.125 | 5.715 | 6.365 | 0.787 | 0.113 | 0.588 | 1.202 | 5.092 | 0.101 | 4.783 | 5.381 | 4.305 | 0.716 | 6.467 |
| *Rheobates* | *palmatus* | 15 | 1.780 | 0.181 | 0.850 | 2.905 | 0.368 | 0.037 | 0.220 | 0.767 | 1.563 | 0.154 | 0.900 | 2.734 | 1.195 | 0.671 | 4.252 |
| *Silverstoneia* | *flotator* | 10 | 0.327 | 0.013 | 0.273 | 0.393 | 0.054 | 0.005 | 0.036 | 0.079 | 0.491 | 0.027 | 0.378 | 0.687 | 0.437 | 1.336 | 9.026 |
| ***Silverstoneia*** | ***nubicola*\*** | 7 | 0.371 | 0.032 | 0.270 | 0.470 | 0.043 | 0.003 | 0.031 | 0.055 | 0.636 | 0.048 | 0.422 | 0.770 | 0.593 | 1.598 | 14.885 |

Table S4 (Cont.). Continuous and binary measurements of conspicuousness and alkaloid profiles in the sampled poison frogs.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Genus | Species | Conspicuous Coloration | | Lipophilic Skin Alkaloids | | | Lipophilic Skin Alkaloid Diversity | | | | | | | | | | | |
|  |  | Cont. | Bin. | Seq. | [ ] | Div. | MON | PTX | HTX | DHQ | 3,5-P | 3,5-I | 5,8-I | 5,6,8-I | QUI | TRI | BTX | Ref./  sample |
| *Allobates* | *femoralis* | 53.074 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | (5) |
| *Allobates* | *insperatus* | 53.721 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | (6) |
| *Allobates* | *juanii* | 52.638 | 0 | ? | ? | ? | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | -- |
| *Allobates* | *kingsburyi* | 53.328 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | 3 skins |
| *Allobates* | *algorei* | 24.179 | 0 | ? | ? | ? | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | -- |
| *Allobates* | *talamancae* | 51.872 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | (7) |
| *Allobates* | *zaparo* | 57.867 | 1 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | (5) |
| *Ameerega* | *bilinguis* | 62.113 | 1 | 1 | 2 | 2 | - | - | + | + | - | - | - | - | - | - | - | (8) |
| *Ameerega* | *hahneli* | 38.212 | 0 | 1 | 2 | 2 | - | - | + | + | - | - | - | - | - | - | - | (9) |
| *Ameerega* | *parvula* | 60.255 | 1 | 1 | 2 | 4 | - | + | + | + | - | - | + | - | - | - | - | (9) |
| *Ameerega* | *trivittata* | 89.778 | 1 | 1 | 3 | 5 | + | - | + | + | - | - | + | + | - | - | - | (8) |
| *Anomaloglossus* | *verbeeksnyderorum* | 33.281 | 0 | ? | ? | ? | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | -- |
| *Aromobates* | aff. *alboguttatus* | 43.589 | 0 | ? | ? | ? | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | -- |
| *Aromobates* | *saltuensis* | 23.456 | 0 | ? | ? | ? | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | -- |
| *Colostethus* | *fugax* | 40.821 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | 5 skins |
| *Colostethus* | *panamansisa* | 43.044 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | (7) |
| *Colostethus* | *pratti* | 45.992 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | (7) |
| *Dendrobates* | *auratus* | 89.171 | 1 | 1 | 3 | 10 | + | + | + | + | + | + | + | + | + | + | - | (9) |
| *Dendrobates* | *bombetes* | 67.145 | 1 | 1 | 2 | 5 | - | + | - | + | - | - | + | + | + | - | - | (9) |
| *Dendrobates* | *captivus* | 64.630 | 1 | 1 | 3 | ? | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | 2 skins |

Abbreviations: Conspicuous coloration: Cons. = continuous, Bin. = binary (1, brightly; 0, cryptically colored); Lipophilic skin alkaloids: Seq. = ability to sequester (0, no; 1, yes), [ ] = quantity per 100 mg of skin (0, no alkaloids detected; 1, < 50 *μ*g, 2, > 50 and < 150 *μ*g; and 3, > 150 *μ*g), Div. = number of structural classes. Diversity of lipophilic skin alkaloids of poison frogs (some grouped under a single structural class for consistency): MON (monocyclics), PXT (all pumiliotoxin classes: PTX, aPTX, hPTX, and deoxy-hPTX), HTX (histrionicotoxins), DHQ (decahydroquinolines), 3,5-P (3,5-disubstituted pyrrolizidines), 3,5-I (3,5-disubstituted indolizidines), 5,8-I (5,8-disubstituted and dehydro-5,8 indolizidines), 5,6,8-I (5,6,8-trisubstituted indolizidines), QUI (4,6-disubstituted and 1,4-disubstituted quinolizidines), TRI (tricyclics), and BTX (batrachotoxins). ?, unknown; -, absent; +, present; and nd, no data.

a *Colostethus panamansis* is the only know species of poison frogs with the TTX hydrophilic neurotoxin which is derived from completely unknown sources (e.g., endosymbiotic bacteria). The mechanism of TTX acquisition in this species is unknown, but it is presumed to be independent from that of lipophilic alkaloids (10).

Table S4 (Cont.). Continuous and binary measurements of conspicuousness and alkaloid profiles in the sampled poison frogs.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Genus | Species | Conspicuous Coloration | | Lipophilic Skin Alkaloids | | | Lipophilic Skin Alkaloid Diversity | | | | | | | | | | | |
|  |  | Cont. | Bin. | Seq. | [ ] | Div. | MON | PTX | HTX | DHQ | 3,5-P | 3,5-I | 5,8-I | 5,6,8-I | QUI | TRI | BTX | Ref./  sample |
| *Dendrobates* | *claudiae* | 77.153 | 1 | 1 | 2 | 6 | + | + | - | + | + | - | + | - | + | - | - | (9) |
| *Dendrobates* | *duellmani* | 74.567 | 1 | ? | ? | ? | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | -- |
| *Dendrobates* | *galactonotus* | 82.880 | 1 | 1 | 3 | 7 | - | + | + | + | + | - | + | + | - | + | - | (8) |
| *Dendrobates* | *histrionicus* | 64.644 | 1 | 1 | 3 | 9 | + | + | + | + | + | + | + | + | + | - | - | (9) |
| *Dendrobates* | *lamasi* | 89.438 | 1 | ? | ? | ? | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | -- |
| *Dendrobates* | *leucomelas* | 72.065 | 1 | 1 | 2 | 4 | - | + | + | - | + | - | - | - | + | - | - | (9) |
| *Dendrobates* | *pumilio* | 63.236 | 1 | 1 | 3 | 10 | + | + | + | + | + | + | + | + | + | + | - | (11) |
| *Dendrobates* | sp. Quibdo | 65.783 | 1 | 1 | 1 | 3 | - | + | - | - | + | - | + | - | - | - | - | (9) |
| *Dendrobates* | *sylvaticus* | 63.055 | 1 | 1 | 3 | 6 | - | + | + | + | - | - | + | + | + | - | - | (9) |
| *Dendrobates* | *tinctorius* | 75.005 | 1 | 1 | 2 | 4 | - | + | + | + | - | - | - | + | - | - | - | (9) |
| *Dendrobates* | *truncatus* | 102.808 | 1 | 1 | 3 | 5 | - | - | + | + | + | - | + | + | - | - | - | (9) |
| *Dendrobates* | *ventrimaculatus* | 67.774 | 1 | 1 | 2 | 7 | - | + | + | + | + | + | - | + | + | - | - | (9) |
| *Dendrobates* | *virolinensis* | 57.892 | 1 | ? | ? | ? | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | -- |
| *Epipedobates* | *anthonyi* | 74.186 | 1 | 1 | 3 | 4 | - | + | - | - | - | - | + | + | + | - | - | (9) |
| *Epipedobates* | *boulengeri* | 55.322 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | (6) |
| *Epipedobates* | *machalilla* | 59.140 | 1 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | 2 skins |
| *Epipedobates* | sp. F | 65.122 | 1 | 1 | 1 | 5 | - | + | + | - | - | - | + | + | + | - | - | (9) |
| *Epipedobates* | *tricolor* | 69.720 | 1 | ? | ? | ? | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | -- |
| *Hyloxalus* | *awa* | 52.780 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | (12) |
| *Hyloxalus* | *azureiventrisb* | 68.512 | 1 | 1 | 1 | ? | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | (10) |

Abbreviations: Conspicuous coloration: Cons. = continuous, Bin. = binary (1, brightly; 0, cryptically colored); Lipophilic skin alkaloids: Seq. = ability to sequester (0, no; 1, yes), [ ] = quantity per 100 mg of skin (0, no alkaloids detected; 1, < 50 *μ*g, 2, > 50 and < 150 *μ*g; and 3, > 150 *μ*g), Div. = number of structural classes. Diversity of lipophilic skin alkaloids of poison frogs (some grouped under a single structural class for consistency): MON (monocyclics), PXT (all pumiliotoxin classes: PTX, aPTX, hPTX, and deoxy-hPTX), HTX (histrionicotoxins), DHQ (decahydroquinolines), 3,5-P (3,5-disubstituted pyrrolizidines), 3,5-I (3,5-disubstituted indolizidines), 5,8-I (5,8-disubstituted and dehydro-5,8 indolizidines), 5,6,8-I (5,6,8-trisubstituted indolizidines), QUI (4,6-disubstituted and 1,4-disubstituted quinolizidines), TRI (tricyclics), and BTX (batrachotoxins). ?, unknown; -, absent; +, present; and nd, no data.

b See note at the end of conspicuousness and alkaloid profiles table (next page).

Table S4 (Cont.). Continuous and binary measurements of conspicuousness and alkaloid profiles in the sampled poison frogs.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Genus | Species | Conspicuousness | | Lipophilic Skin Alkaloids | | | Lipophilic Skin Alkaloid Diversity | | | | | | | | | | | |
|  |  | Cont. | Bin. | Seq. | [ ] | Div. | MON | PTX | HTX | DHQ | 3,5-P | 3,5-I | 5,8-I | 5,6,8-I | QUI | TRI | BTX | Ref./  sample |
| *Hyloxalus* | *bocagei* | 42.288 | 0 | ? | ? | ? | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | -- |
| *Hyloxalus* | *elachyhistus* | 49.151 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | (7) |
| *Hyloxalus* | *maculosus* | 31.288 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | (6) |
| *Hyloxalus* | *nexipus* | 66.929 | 1 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | 3 skins |
| *Hyloxalus* | *sauli* | 38.131 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | (6) |
| *Hyloxalus* | *subpunctatus* | 54.270 | 0 | ? | ? | ? | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | -- |
| *Hyloxalus* | *toachi* | 36.654 | 0 | ? | ? | ? | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | -- |
| *Hyloxalus* | *vertebralis* | 32.728 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | 5 skins |
| *Mannophryne* | *collaris* | 39.034 | 0 | ? | ? | ? | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | -- |
| *Phyllobates* | *aurotaenia* | 77.901 | 1 | 1 | 2 | 5 | - | + | + | + | - | + | - | - | - | - | + | (9) |
| *Phyllobates* | *terribilis* | 77.260 | 1 | 1 | 3 | 2 | - | - | - | - | - | + | - | - | - | - | + | (9) |
| *Rheobates* | *palmatus* | 25.686 | 0 | ? | ? | ? | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | nd | -- |
| *Silverstoneia* | *flotator* | 52.693 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | (13) |
| *Silverstoneia* | *nubicola* | 41.807 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | (14) |

Abbreviations: Conspicuous coloration: Cons. = continuous, Bin. = binary (1, brightly; 0, cryptically colored); Lipophilic skin alkaloids: Seq. = ability to sequester (0, no; 1, yes), [ ] = quantity per 100 mg of skin (0, no alkaloids detected; 1, < 50 *μ*g, 2, > 50 and < 150 *μ*g; and 3, > 150 *μ*g), Div. = number of structural classes. Diversity of lipophilic skin alkaloids of poison frogs (some grouped under a single structural class for consistency): MON (monocyclics), PXT (all pumiliotoxin classes: PTX, aPTX, hPTX, and deoxy-hPTX), HTX (histrionicotoxins), DHQ (decahydroquinolines), 3,5-P (3,5-disubstituted pyrrolizidines), 3,5-I (3,5-disubstituted indolizidines), 5,8-I (5,8-disubstituted and dehydro-5,8 indolizidines), 5,6,8-I (5,6,8-trisubstituted indolizidines), QUI (4,6-disubstituted and 1,4-disubstituted quinolizidines), TRI (tricyclics), and BTX (batrachotoxins). ?, unknown; -, absent; +, present; and nd, no data.

b The ability to sequester alkaloids among brightly colored members of *Hyloxalus* is controversial. *Hyloxalus azureiventris* demonstrated to be able to sequester lipophilic alkaloids from oral methanol-saline solution as well-know as other alkaloid sequestering poison frogs: *Dendrobates*, *Phyllobates*, and *Epipedobates* (Saporito *et al*., 2009: note 33). Later experiments using alkaloid dusted fruit flies showed that *H. azureiventis* was unable to sequester alkaloids from this artificial dietary source (Daly, 1998), but details on the sample number and methodology were not provided. However, no natural populations of *H. azureiventis* were surveyed and the presence of lipophilic alkaloids in wild-caught individuals is unknown. Unpublished data from Daly's group was presented by Grant et al. (2006: page 138) suggesting that wild-caught individuals from the sister species of *H. azureiventris* (i.e., *H. chlorocraspedus*) lacked detectable levels of alkaloids, but details on the sample number and methodology were not provided. More explicit analyzes are required, but the current evidence does not invalidate that *H. azureiventis* is able to sequester alkaloids in the wild or contradict its ability to sequester lipophilic alkaloids (10, 15, 16).

Table S4 (Cont.). Dietary profiles of the sampled poison frogs including the number of individual reported, number prey per stomach (prey/individuals), percentage of individuals per prey category, and niche breadth.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Genus | Species | *N* | Total Prey | Prey /ind | Ants & Mites | Ortho. | Coleo. | Colle. | Dipt. | Isopt. | Araneae | Larvae | Other | Niche Breath | Ref. |
| *Allobates* | *femoralis* | 15 | 60 | 4.000 | 0.367 | 0.000 | 0.117 | 0.033 | 0.083 | 0.017 | 0.050 | 0.033 | 0.300 | 0.750 | (6) |
| *Allobates* | *insperatus* | 12 | 74 | 6.167 | 0.514 | 0.000 | 0.068 | 0.068 | 0.014 | 0.000 | 0.095 | 0.081 | 0.162 | 0.352 | (6) |
| *Allobates* | *juanii* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Allobates* | *kingsburyi* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Allobates* | *algorei* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Allobates* | *talamancae* | 19 | 262 | 13.90 | 0.305 | 0.019 | 0.046 | 0.263 | 0.149 | 0.015 | 0.027 | 0.027 | 0.149 | 0.614 | (17) |
| *Allobates* | *zaparo* | 20 | 180 | 9.000 | 0.283 | 0.011 | 0.178 | 0.044 | 0.033 | 0.167 | 0.017 | 0.078 | 0.189 | 0.815 | (6) |
| *Ameerega* | *bilinguis* | 24 | 1676 | 69.83 | **0.735** | 0.013 | 0.000 | 0.013 | 0.001 | 0.036 | 0.004 | 0.180 | 0.018 | 0.106 | (6) |
| *Ameerega* | *hahneli* | 11 | 229 | 20.82 | **0.808** | 0.000 | 0.061 | 0.004 | 0.004 | 0.031 | 0.009 | 0.022 | 0.061 | 0.074 | (6) |
| *Ameerega* | *parvula* | 12 | 587 | 48.92 | **0.841** | 0.000 | 0.036 | 0.003 | 0.002 | 0.017 | 0.003 | 0.075 | 0.023 | 0.057 | (6) |
| *Ameerega* | *trivittata* | -- | -- | 77.20 | 0.593 | 0.000 | 0.071 | 0.018 | 0.018 | 0.035 | 0.018 | 0.212 | 0.035 | 0.211 | (18) |
| *Anomaloglossus* | *verbeeksnyderorum* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Aromobates* | aff. *alboguttatus* | 104 | 1255 | 5.200 | 0.137 | 0.009 | 0.127 | 0.004 | 0.109 | 0.000 | 0.022 | 0.478 | 0.114 | 0.375 | (19)a |
| *Aromobates* | *saltuensis* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Colostethus* | *fugax* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Colostethus* | *panamansis* | 12 | 80 | 7.300 | 0.370 | 0.230 | 0.120 | 0.021 | 0.021 | 0.000 | 0.021 | 0.000 | 0.218 | 0.552 | (20) |
| *Colostethus* | *pratti* | 8 | 26 | 5.100 | 0.060 | 0.780 | 0.090 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.070 | 0.088 | (20) |
| *Dendrobates* | *auratus* | 23 | 4291 | 186.5 | **0.946** | 0.000 | 0.014 | 0.006 | 0.004 | 0.006 | 0.003 | 0.011 | 0.010 | 0.017 | (17) |
| *Dendrobates* | *bombetes* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Dendrobates* | *captivus* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Dendrobates* | *claudiae* | 26 | 458 | 24.10 | **0.810** | 0.000 | 0.000 | 0.000 | 0.000 | 0.020 | 0.000 | 0.170 | 0.000 | 0.066 | (20)b |
| *Dendrobates* | *duellmani* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Dendrobates* | *galactonotus* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Dendrobates* | *histrionicus* | 7 | 704 | 100.6 | **0.933** | 0.000 | 0.034 | 0.000 | 0.000 | 0.007 | 0.000 | 0.014 | 0.011 | 0.021 | (21) |
| *Dendrobates* | *lamasi* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

Abbreviations: Ortho., orthopterans; Coleo., coleopterans; Colle., collembolans; Dipt., dipterans; Isopt., isopterans; Araneae, spiders. **Bold** indicates that ant & mite category was > 0.70. a. only females, b. as *minutus*, c. as *fulguritus*.

Table S4 (Cont.). Dietary profiles of the sampled poison frogs including the number of individual reported, number prey per stomach (prey/individuals), percentage of individuals per prey category, and niche breadth.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Genus | Species | *N* | Total Prey | Prey /indiv. | Ants & Mites | Ortho. | Coleo. | Colle. | Dipt. | Isopt. | Araneae | Larvae | Other | Niche Breath | Ref. |
| *Dendrobates* | *leucomelas* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Dendrobates* | *pumilio* | 33 | 2783 | 84.400 | **0.878** | 0.000 | 0.008 | 0.070 | 0.004 | 0.001 | 0.000 | 0.015 | 0.024 | 0.041 | (17) |
| *Dendrobates* | sp*.* Quibdo | 4 | 122 | 25.800 | **0.970** | 0.000 | 0.000 | 0.010 | 0.010 | 0.000 | 0.010 | 0.000 | 0.000 | 0.009 | (20)c |
| *Dendrobates* | *sylvaticus* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Dendrobates* | *tinctorius* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Dendrobates* | *truncatus* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Dendrobates* | *ventrimaculatus* | 5 | 354 | 70.800 | **0.734** | 0.000 | 0.008 | 0.006 | 0.011 | 0.000 | 0.006 | 0.215 | 0.020 | 0.101 | (17) |
| *Dendrobates* | *virolinensis* | 165 | 8993 | 56.000 | **0.884** | 0.000 | 0.010 | 0.053 | 0.004 | 0.000 | 0.002 | 0.029 | 0.018 | 0.039 | (22) |
| *Epipedobates* | *anthonyi* | 10 | 288 | 28.800 | **0.889** | 0.004 | 0.031 | 0.004 | 0.024 | 0.000 | 0.010 | 0.017 | 0.021 | 0.037 | (6) |
| *Epipedobates* | *boulengeri* | 32 | 903 | 28.200 | 0.279 | 0.000 | 0.012 | 0.319 | 0.091 | 0.000 | 0.003 | 0.230 | 0.065 | 0.450 | (17) |
| *Epipedobates* | *machalilla* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Epipedobates* | sp. F | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Epipedobates* | *tricolor* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Hyloxalus* | *awa* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Hyloxalus* | *azureiventris* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Hyloxalus* | *bocagei* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Hyloxalus* | *elachyhistus* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Hyloxalus* | *maculosus* | 22 | 241 | 10.955 | 0.216 | 0.000 | 0.079 | 0.000 | 0.017 | 0.008 | 0.017 | 0.556 | 0.108 | 0.251 | (6) |
| *Hyloxalus* | *nexipus* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Hyloxalus* | *sauli* | 9 | 42 | 4.667 | 0.595 | 0.024 | 0.071 | 0.000 | 0.000 | 0.000 | 0.024 | 0.071 | 0.214 | 0.248 | (6) |
| *Hyloxalus* | *subpunctatus* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Hyloxalus* | *toachi* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Hyloxalus* | *vertebralis* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Mannophryne* | *collaris* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

Abbreviations: Ortho., orthopterans; Coleo., coleopterans; Colle., collembolans; Dipt., dipterans; Isopt., isopterans; Araneae, spiders. **Bold** indicates that ant & mite category was > 0.70. a. only females, b. as *minutus*, c. as *fulguritus*.

Table S4 (Cont.). Dietary profiles of the sampled poison frogs including the number of individual reported, number prey per stomach (prey/individuals), percentage of individuals per prey category, and niche breadth.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Genus | Species | *N* | Total Prey | Prey /indiv. | Ants & Mites | Ortho. | Coleo. | Colle. | Dipt. | Isopt. | Araneae | Larvae | Other | Niche Breath | Ref. |
| *Phyllobates* | *aurotaenia* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Phyllobates* | *terribilis* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Rheobates* | *palmatus* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Silverstoneia* | *flotator* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *Silverstoneia* | *nubicola* | 30 | 336 | 11.600 | 0.400 | 0.080 | 0.090 | 0.055 | 0.055 | 0.000 | 0.055 | 0.128 | 0.136 | 0.571 | (20) |

Abbreviations: Ortho., orthopterans; Coleo., coleopterans; Colle., collembolans; Dipt., dipterans; Isopt., isopterans; Araneae, spiders. **Bold** indicates that ant & mite category was > 0.70. a. only females, b. as *minutus*, c. as *fulguritus*.

Table S4 (Cont.). Accession numbers for the genes used to infer the phylogeny of the poison frogs.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Genus | Species | 12S – ND2 | CYTB | BDNF | BMP2 | NACA |
| *Ademomera* | *andreae* | HQ290944 | HQ290524 | HQ290584 | HQ291007 | HQ290704 |
| *Bufo* | *nebulifer* | HQ290945 | HQ290525 | HQ290585 | HQ291008 | HQ290705 |
| *Centrolene* | *grandisonae* | HQ290946 | HQ290526 | HQ290586 | HQ291009 | HQ290706 |
| *Ceratophrys* | *cornuta* | HQ290947 | HQ290527 | HQ290587 | HQ291010 | HQ290707 |
| *Crossodactylus* | *schmidti* | HQ290948 | HQ290528 | HQ290588 | HQ291011 | HQ290708 |
| *Lithodytes* | *lineatus* | HQ290949 | HQ290529 | HQ290589 | HQ291012 | HQ290709 |
| *Allobates* | *femoralis* | HQ290951 | HQ290531 | HQ290591 | HQ291014 | HQ290711 |
| *Allobates* | *insperatus* | HQ290959 | HQ290539 | HQ290599 | HQ291022 | HQ290719 |
| *Allobates* | *juanii* | HQ290960-2 | HQ290540 | HQ290600 | HQ291023 | HQ290720 |
| *Allobates* | *kingsburyi* | HQ290963 | HQ290541 | HQ290601 | HQ291024 | HQ290721 |
| *Allobates* | *algorei* | HQ290950 | HQ290530 | HQ290590 | HQ291013 | HQ290710 |
| *Allobates* | *talamancae* | HQ290974 | HQ290552 | HQ290612 | HQ291035 | HQ290732 |
| *Allobates* | *zaparo* | HQ291003 | HQ290580 | HQ290640 | HQ291063 | HQ290760 |
| *Ameerega* | *bilinguis* | HQ290996 | HQ290573 | HQ290633 | HQ291056 | HQ290753 |
| *Ameerega* | *hahneli* | HQ290998 | HQ290575 | HQ290635 | HQ291058 | HQ290755 |
| *Ameerega* | *parvula* | HQ290999 | HQ290576 | HQ290636 | HQ291059 | HQ290756 |
| *Ameerega* | *trivittata* | HQ291002 | HQ290579 | HQ290639 | HQ291062 | HQ290759 |
| *Anomaloglossus* | *verbeeksnyderorum* | HQ290952 | HQ290532 | HQ290592 | HQ291015 | HQ290712 |
| *Aromobates* | aff. *alboguttatus* | HQ290953 | HQ290533 | HQ290593 | HQ291016 | HQ290713 |
| *Aromobates* | *saltuensis* | HQ290970 | HQ290548 | HQ290608 | HQ291031 | HQ290728 |
| *Colostethus* | *fugax* | HQ290958 | HQ290538 | HQ290598 | HQ291021 | HQ290718 |
| *Colostethus* | *panamansis* | HQ290968 | HQ290546 | HQ290606 | HQ291029 | HQ290726 |
| *Colostethus* | *pratti* | HQ290969 | HQ290547 | HQ290607 | HQ291030 | HQ290727 |
| *Dendrobates* | *auratus* | HQ290980 | HQ290557 | HQ290617 | HQ291040 | HQ290737 |
| *Dendrobates* | *bombetes* | HQ290981 | HQ290558 | HQ290618 | HQ291041 | HQ290738 |
| *Dendrobates* | *captivus* | HQ290982 | HQ290559 | HQ290619 | HQ291042 | HQ290739 |
| *Dendrobates* | *claudiae* | HQ290983 | HQ290560 | HQ290620 | HQ291043 | HQ290740 |

Table S4 (Cont.). Accession numbers for the genes used to infer the phylogeny of the poison frogs.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Genus | Species | 12S – ND2 | CYTB | BDNF | BMP2 | NACA |
| *Dendrobates* | *duellmani* | HQ290979 | HQ290556 | HQ290616 | HQ291039 | HQ290736 |
| *Dendrobates* | *galactonotus* | HQ290984 | HQ290561 | HQ290621 | HQ291044 | HQ290741 |
| *Dendrobates* | *histrionicus* | HQ290985 | HQ290562 | HQ290622 | HQ291045 | HQ290742 |
| *Dendrobates* | *lamasi* | HQ290986 | HQ290563 | HQ290623 | HQ291046 | HQ290743 |
| *Dendrobates* | *leucomelas* | HQ290987 | HQ290564 | HQ290624 | HQ291047 | HQ290744 |
| *Dendrobates* | *pumilio* | HQ290988 | HQ290565 | HQ290625 | HQ291048 | HQ290745 |
| *Dendrobates* | sp*.* Quibdo | HQ290989 | HQ290566 | HQ290626 | HQ291049 | HQ290746 |
| *Dendrobates* | *sylvaticus* | HQ290990 | HQ290567 | HQ290627 | HQ291050 | HQ290747 |
| *Dendrobates* | *tinctorius* | HQ290991 | HQ290568 | HQ290628 | HQ291051 | HQ290748 |
| *Dendrobates* | *truncatus* | HQ290992 | HQ290569 | HQ290629 | HQ291052 | HQ290749 |
| *Dendrobates* | *ventrimaculatus* | HQ290993 | HQ290570 | HQ290630 | HQ291053 | HQ290750 |
| *Dendrobates* | *virolinensis* | HQ290994 | HQ290571 | HQ290631 | HQ291054 | HQ290751 |
| *Epipedobates* | *anthonyi* | HQ290995 | HQ290572 | HQ290632 | HQ291055 | HQ290752 |
| *Epipedobates* | *boulengeri* | HQ290997 | HQ290574 | HQ290634 | HQ291057 | HQ290754 |
| *Epipedobates* | *machalilla* | HQ290964 | HQ290542 | HQ290602 | HQ291025 | HQ290722 |
| *Epipedobates* | sp. F | HQ291000 | HQ290577 | HQ290637 | HQ291060 | HQ290757 |
| *Epipedobates* | *tricolor* | HQ291001 | HQ290578 | HQ290638 | HQ291061 | HQ290758 |
| *Hyloxalus* | *awa* | HQ290954 | HQ290534 | HQ290594 | HQ291017 | HQ290714 |
| *Hyloxalus* | *azureiventris* | HQ290977-8 | HQ290555 | HQ290615 | HQ291038 | HQ290735 |
| *Hyloxalus* | *bocagei* | HQ290955 | HQ290535 | HQ290595 | HQ291018 | HQ290715 |
| *Hyloxalus* | *elachyhistus* | HQ290956 | HQ290536 | HQ290596 | HQ291019 | HQ290716 |
| *Hyloxalus* | *maculosus* | HQ290972 | HQ290550 | HQ290610 | HQ291033 | HQ290730 |
| *Hyloxalus* | *nexipus* | HQ290965 | HQ290543 | HQ290603 | HQ291026 | HQ290723 |
| *Hyloxalus* | *sauli* | HQ290971 | HQ290549 | HQ290609 | HQ291032 | HQ290729 |
| *Hyloxalus* | *subpunctatus* | HQ290973 | HQ290551 | HQ290611 | HQ291034 | HQ290731 |
| *Hyloxalus* | *toachi* | HQ290975 | HQ290553 | HQ290613 | HQ291036 | HQ290733 |
| *Hyloxalus* | *vertebralis* | HQ290976 | HQ290554 | HQ290614 | HQ291037 | HQ290734 |

Table S4 (Cont.). Accession numbers for the genes used to infer the phylogeny of the poison frogs.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Genus | Species | 12S – ND2 | CYTB | BDNF | BMP2 | NACA |
| *Mannophryne* | *collaris* | HQ291004 | HQ290581 | HQ290641 | HQ291064 | HQ290761 |
| *Phyllobates* | *aurotaenia* | HQ291005 | HQ290582 | HQ290642 | HQ291065 | HQ290762 |
| *Phyllobates* | *terribilis* | HQ291006 | HQ290583 | HQ290643 | HQ291066 | HQ290763 |
| *Rheobates* | *palmatus* | HQ290967 | HQ290545 | HQ290605 | HQ291028 | HQ290725 |
| *Silverstoneia* | *flotator* | HQ290957 | HQ290537 | HQ290597 | HQ291020 | HQ290717 |
| *Silverstoneia* | *nubicola* | HQ290966 | HQ290544 | HQ290604 | HQ291027 | HQ290724 |

Table S4 (Cont.). Accession numbers for the genes used to infer the phylogeny of the poison frogs.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Genus | Species | NF3 | TYR | POMC | ZFX |
| *Ademomera* | *andreae* | HQ290764 | HQ290884 | HQ290824 | HQ290644 |
| *Bufo* | *nebulifer* | HQ290765 | HQ290885 | HQ290825 | HQ290645 |
| *Centrolene* | *grandisonae* | HQ290766 | HQ290886 | HQ290826 | HQ290646 |
| *Ceratophrys* | *cornuta* | HQ290767 | HQ290887 | HQ290827 | HQ290647 |
| *Crossodactylus* | *schmidti* | HQ290768 | HQ290888 | HQ290828 | HQ290648 |
| *Lithodytes* | *lineatus* | HQ290769 | HQ290889 | HQ290829 | HQ290649 |
| *Allobates* | *femoralis* | HQ290771 | HQ290891 | HQ290831 | HQ290651 |
| *Allobates* | *insperatus* | HQ290779 | HQ290899 | HQ290839 | HQ290659 |
| *Allobates* | *juanii* | HQ290780 | HQ290900 | HQ290840 | HQ290660 |
| *Allobates* | *kingsburyi* | HQ290781 | HQ290901 | HQ290841 | HQ290661 |
| *Allobates* | *algorei* | HQ290770 | HQ290890 | HQ290830 | HQ290650 |
| *Allobates* | *talamancae* | HQ290792 | HQ290912 | HQ290852 | HQ290672 |
| *Allobates* | *zaparo* | HQ290820 | HQ290940 | HQ290880 | HQ290700 |
| *Ameerega* | *bilinguis* | HQ290813 | HQ290933 | HQ290873 | HQ290693 |
| *Ameerega* | *hahneli* | HQ290815 | HQ290935 | HQ290875 | HQ290695 |
| *Ameerega* | *parvula* | HQ290816 | HQ290936 | HQ290876 | HQ290696 |
| *Ameerega* | *trivittata* | HQ290819 | HQ290939 | HQ290879 | HQ290699 |
| *Anomaloglossus* | *verbeeksnyderorum* | HQ290772 | HQ290892 | HQ290832 | HQ290652 |
| *Aromobates* | aff. *alboguttatus* | HQ290773 | HQ290893 | HQ290833 | HQ290653 |
| *Aromobates* | *saltuensis* | HQ290788 | HQ290908 | HQ290848 | HQ290668 |
| *Colostethus* | *fugax* | HQ290778 | HQ290898 | HQ290838 | HQ290658 |
| *Colostethus* | *panamansis* | HQ290786 | HQ290906 | HQ290846 | HQ290666 |
| *Colostethus* | *pratti* | HQ290787 | HQ290907 | HQ290847 | HQ290667 |
| *Dendrobates* | *auratus* | HQ290797 | HQ290917 | HQ290857 | HQ290677 |
| *Dendrobates* | *bombetes* | HQ290798 | HQ290918 | HQ290858 | HQ290678 |
| *Dendrobates* | *captivus* | HQ290799 | HQ290919 | HQ290859 | HQ290679 |
| *Dendrobates* | *claudiae* | HQ290800 | HQ290920 | HQ290860 | HQ290680 |

Table S4 (Cont.). Accession numbers for the genes used to infer the phylogeny of the poison frogs.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Genus | Species | NF3 | TYR | POMC | ZFX |
| *Dendrobates* | *duellmani* | HQ290796 | HQ290916 | HQ290856 | HQ290676 |
| *Dendrobates* | *galactonotus* | HQ290801 | HQ290921 | HQ290861 | HQ290681 |
| *Dendrobates* | *histrionicus* | HQ290802 | HQ290922 | HQ290862 | HQ290682 |
| *Dendrobates* | *lamasi* | HQ290803 | HQ290923 | HQ290863 | HQ290683 |
| *Dendrobates* | *leucomelas* | HQ290804 | HQ290924 | HQ290864 | HQ290684 |
| *Dendrobates* | *pumilio* | HQ290805 | HQ290925 | HQ290865 | HQ290685 |
| *Dendrobates* | sp*.* Quibdo | HQ290806 | HQ290926 | HQ290866 | HQ290686 |
| *Dendrobates* | *sylvaticus* | HQ290807 | HQ290927 | HQ290867 | HQ290687 |
| *Dendrobates* | *tinctorius* | HQ290808 | HQ290928 | HQ290868 | HQ290688 |
| *Dendrobates* | *truncatus* | HQ290809 | HQ290929 | HQ290869 | HQ290689 |
| *Dendrobates* | *ventrimaculatus* | HQ290810 | HQ290930 | HQ290870 | HQ290690 |
| *Dendrobates* | *virolinensis* | HQ290811 | HQ290931 | HQ290871 | HQ290691 |
| *Epipedobates* | *anthonyi* | HQ290812 | HQ290932 | HQ290872 | HQ290692 |
| *Epipedobates* | *boulengeri* | HQ290814 | HQ290934 | HQ290874 | HQ290694 |
| *Epipedobates* | *machalilla* | HQ290782 | HQ290902 | HQ290842 | HQ290662 |
| *Epipedobates* | sp. F | HQ290817 | HQ290937 | HQ290877 | HQ290697 |
| *Epipedobates* | *tricolor* | HQ290818 | HQ290938 | HQ290878 | HQ290698 |
| *Hyloxalus* | *awa* | HQ290774 | HQ290894 | HQ290834 | HQ290654 |
| *Hyloxalus* | *azureiventris* | HQ290795 | HQ290915 | HQ290855 | HQ290675 |
| *Hyloxalus* | *bocagei* | HQ290775 | HQ290895 | HQ290835 | HQ290655 |
| *Hyloxalus* | *elachyhistus* | HQ290776 | HQ290896 | HQ290836 | HQ290656 |
| *Hyloxalus* | *maculosus* | HQ290790 | HQ290910 | HQ290850 | HQ290670 |
| *Hyloxalus* | *nexipus* | HQ290783 | HQ290903 | HQ290843 | HQ290663 |
| *Hyloxalus* | *sauli* | HQ290789 | HQ290909 | HQ290849 | HQ290669 |
| *Hyloxalus* | *subpunctatus* | HQ290791 | HQ290911 | HQ290851 | HQ290671 |
| *Hyloxalus* | *toachi* | HQ290793 | HQ290913 | HQ290853 | HQ290673 |
| *Hyloxalus* | *vertebralis* | HQ290794 | HQ290914 | HQ290854 | HQ290674 |

Table S4 (Cont.). Accession numbers for the genes used to infer the phylogeny of the poison frogs.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Genus | Species | NF3 | TYR | POMC | ZFX |
| *Mannophryne* | *collaris* | HQ290821 | HQ290941 | HQ290881 | HQ290701 |
| *Phyllobates* | *aurotaenia* | HQ290822 | HQ290942 | HQ290882 | HQ290702 |
| *Phyllobates* | *terribilis* | HQ290823 | HQ290943 | HQ290883 | HQ290703 |
| *Rheobates* | *palmatus* | HQ290785 | HQ290905 | HQ290845 | HQ290665 |
| *Silverstoneia* | *flotator* | HQ290777 | HQ290897 | HQ290837 | HQ290657 |
| *Silverstoneia* | *nubicola* | HQ290784 | HQ290904 | HQ290844 | HQ290664 |

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