

## Supplemental Tables

**Sup. Table 1.** Samples used in molecular phylogenetic analyses for this study. Abbreviations: *L.*=*Leptobranchella*; *Le.*=*Leptolalax*; *Lb.*=*Leptobranchium*; *M.*=*Megophrys*. \* outgroup.

| ID | GenBank species            | Species                  | Country  |              | Voucher No.    | GenBank No. | References                |
|----|----------------------------|--------------------------|----------|--------------|----------------|-------------|---------------------------|
| 1  | <i>L. korifi</i>           | <i>L. korifi</i>         | Thailand | Chiang Mai   | PR03322        | PV746785    | This study                |
| 2  | <i>L. korifi</i>           | <i>L. korifi</i>         | Thailand | Chiang Mai   | PR03323        | PV746786    | This study                |
| 3  | <i>L. korifi</i>           | <i>L. korifi</i>         | Thailand | Chiang Mai   | PR03324        | PV746787    | This study                |
| 4  | <i>L. korifi</i>           | <i>L. korifi</i>         | Thailand | Chiang Mai   | PR03451.1      | PV746788    | This study                |
| 5  | <i>L. korifi</i>           | <i>L. korifi</i>         | Thailand | Chiang Mai   | PR03451.2      | PV746789    | This study                |
| 6  | <i>L. korifi</i>           | <i>L. korifi</i>         | Thailand | Chiang Mai   | KUHE 19134     | LC741033    | Matsui <i>et al.</i> 2023 |
| 7  | <i>L. sinorensis</i>       | <i>L. sinorensis</i>     | Thailand | Mae Hong Son | KUHE 19809     | LC741034    | Matsui <i>et al.</i> 2023 |
| 8  | <i>L. sinorensis</i>       | <i>L. sinorensis</i>     | Thailand | Mae Hong Son | KUHE 19815     | LC741035    | Matsui <i>et al.</i> 2023 |
| 9  | <i>L. sinorensis</i>       | <i>L. sinorensis</i>     | Thailand | Mae Hong Son | KUHE 19815     | LC741036    | Matsui <i>et al.</i> 2023 |
| 10 | <i>L. murphyi</i>          | <i>L. murphyi</i>        | Thailand | Chiang Mai   | KUHE 19113     | LC741027    | Matsui <i>et al.</i> 2023 |
| 11 | <i>L. murphyi</i>          | <i>L. murphyi</i>        | Thailand | Chiang Mai   | KUHE 19131     | LC741028    | Matsui <i>et al.</i> 2023 |
| 12 | <i>L. murphyi</i>          | <i>L. murphyi</i>        | Thailand | Chiang Mai   | KUHE 19132     | LC741029    | Matsui <i>et al.</i> 2023 |
| 13 | <i>L. murphyi</i>          | <i>L. murphyi</i>        | Thailand | Chiang Mai   | KUHE 19220     | LC741030    | Matsui <i>et al.</i> 2023 |
| 14 | <i>L. murphyi</i>          | <i>L. murphyi</i>        | Thailand | Chiang Mai   | KUHE 19221     | LC741031    | Matsui <i>et al.</i> 2023 |
| 15 | <i>L. murphyi</i>          | <i>L. murphyi</i>        | Thailand | Chiang Mai   | KUHE 19222     | LC741032    | Matsui <i>et al.</i> 2023 |
| 16 | <i>L. bourreti</i>         | <i>L. nyx</i>            | Vietnam  | Ha Giang     | AMNH A163810   | DQ283381    | Frost <i>et al.</i> 2006  |
| 17 | <i>Le. minimus</i>         | <i>L. minima</i>         | Thailand | Chiang Mai   | KUHE 23733     | LC201980    | Matsui <i>et al.</i> 2017 |
| 18 | <i>Le. minimus</i>         | <i>L. minima</i>         | Thailand | Chiang Mai   | KUHE 19201     | LC201981    | Matsui <i>et al.</i> 2017 |
| 19 | <i>L. minima</i>           | <i>L. minima</i>         | Thailand | Chiang Mai   | KUHE 19200     | LC741025    | Matsui <i>et al.</i> 2023 |
| 20 | <i>L. minima</i>           | <i>L. minima</i>         | Thailand | Chiang Mai   | KUHE 19210     | LC741026    | Matsui <i>et al.</i> 2023 |
| 21 | <i>Le. fuliginosus</i>     | <i>L. bourreti</i>       | Vietnam  | Sa Pa        | MNHNP 5659     | LC201983    | Matsui <i>et al.</i> 2017 |
| 22 | <i>Le. pelodytoides</i>    | <i>L. ventripunctata</i> | -        | -            | MVZ 223642     | JX564874    | Zhang <i>et al.</i> 2013  |
| 23 | <i>Le. pelodytoides</i>    | <i>L. ventripunctata</i> | Vietnam  | Vinh Phu     | ROM18282       | EF397244    | Fu <i>et al.</i> 2007     |
| 24 | <i>Le. ventripunctatus</i> | <i>L. ventripunctata</i> | China    | Yunnan       | CIB 201307-062 | LC201978    | Matsui <i>et al.</i> 2017 |
| 25 | <i>Le. ventripunctatus</i> | <i>L. ventripunctata</i> | Laos     | Houapan      | KUHE 32450     | LC201979    | Matsui <i>et al.</i> 2017 |
| 26 | <i>Le. melanoleucus</i>    | <i>L. melanoleuca</i>    | Thailand | Surat Thani  | KUHE 19694     | LC201989    | Matsui <i>et al.</i> 2017 |
| 27 | <i>Le. melanoleucus</i>    | <i>L. melanoleuca</i>    | Thailand | Surat Thani  | KUHE 19719     | LC201990    | Matsui <i>et al.</i> 2017 |
| 28 | <i>Le. melanoleucus</i>    | <i>L. melanoleuca</i>    | Thailand | Surat Thani  | KUHE 19723     | LC201992    | Matsui <i>et al.</i> 2017 |
| 29 | <i>Le. melanoleucus</i>    | <i>L. melanoleuca</i>    | Thailand | Surat Thani  | KUHE 19728     | LC201993    | Matsui <i>et al.</i> 2017 |
| 30 | <i>Le. melanoleucus</i>    | <i>L. melanoleuca</i>    | Thailand | Surat Thani  | KUHE 19732     | LC201994    | Matsui <i>et al.</i> 2017 |
| 31 | <i>Le. melanoleucus</i>    | <i>L. melanoleuca</i>    | Thailand | Surat Thani  | KUHE 23820     | LC201995    | Matsui <i>et al.</i> 2017 |
| 32 | <i>Le. melanoleucus</i>    | <i>L. melanoleuca</i>    | Thailand | Surat Thani  | KUHE 23838     | LC201996    | Matsui <i>et al.</i> 2017 |
| 33 | <i>Le. melanoleucus</i>    | <i>L. melanoleuca</i>    | Thailand | Surat Thani  | KUHE 23845     | LC201999    | Matsui <i>et al.</i> 2017 |

|    |                          |                        |          |               |                |          |                           |
|----|--------------------------|------------------------|----------|---------------|----------------|----------|---------------------------|
| 34 | <i>Le. melanoleucus</i>  | <i>L. melanoleuca</i>  | Thailand | Ranong        | KUHE 35710     | LC202000 | Matsui <i>et al.</i> 2017 |
| 35 | <i>Le. fuliginosus</i>   | <i>L. fuliginosa</i>   | Thailand | Chiang Mai    | KUHE 19223     | LC201984 | Matsui <i>et al.</i> 2017 |
| 36 | <i>Le. fuliginosus</i>   | <i>L. fuliginosa</i>   | Thailand | Phetchaburi   | KUHE 20172     | LC201985 | Matsui <i>et al.</i> 2017 |
| 37 | <i>Le. fuliginosus</i>   | <i>L. fuliginosa</i>   | Thailand | Phetchaburi   | KUHE 20173     | LC201986 | Matsui <i>et al.</i> 2017 |
| 38 | <i>Le. fuliginosus</i>   | <i>L. fuliginosa</i>   | Thailand | Phetchaburi   | KUHE 20174     | LC201987 | Matsui <i>et al.</i> 2017 |
| 39 | <i>Le. fuliginosus</i>   | <i>L. fuliginosa</i>   | Thailand | Phetchaburi   | KUHE 20197     | LC201988 | Matsui <i>et al.</i> 2017 |
| 40 | <i>Le. heteropus</i>     | <i>L. heteropus</i>    | Malaysia | Larut         | KUHE 15486     | LC202005 | Matsui <i>et al.</i> 2017 |
| 41 | <i>Le. heteropus</i>     | <i>L. heteropus</i>    | Malaysia | Larut         | KUHE 15487     | LC202006 | Matsui <i>et al.</i> 2017 |
| 42 | <i>Le. heteropus</i>     | <i>L. heteropus</i>    | Malaysia | Larut         | KUHE 15490     | AB847561 | Matsui <i>et al.</i> 2014 |
| 43 | <i>Le. solus</i>         | <i>L. sola</i>         | Malaysia | Frazers' Hill | KUHE 53404     | LC202012 | Matsui <i>et al.</i> 2017 |
| 44 | <i>Le. solus</i>         | <i>L. sola</i>         | Thailand | Narathiwat    | KUHE 23261     | LC202007 | Matsui <i>et al.</i> 2017 |
| 45 | <i>Le. solus</i>         | <i>L. sola</i>         | Malaysia | Cameron       | UM D 0113      | LC202008 | Matsui <i>et al.</i> 2017 |
| 46 | <i>Le. solus</i>         | <i>L. sola</i>         | Malaysia | Gombak        | KUHE 52038     | LC202009 | Matsui <i>et al.</i> 2017 |
| 47 | <i>L. alpina</i>         | <i>L. alpina</i>       | China    | Yunnan        | YN20130305001  | NC088425 | Shu <i>et al.</i> 2021    |
| 48 | <i>Le. arayai</i>        | <i>L. arayai</i>       | Malaysia | Sabah         | BORN 22931     | AB847558 | Matsui <i>et al.</i> 2014 |
| 49 | <i>Le. dringi</i>        | <i>L. dringi</i>       | Malaysia | Sarawak       | KUHE 55610     | AB847553 | Matsui <i>et al.</i> 2014 |
| 50 | <i>Le. oshanensis</i>    | <i>L. oshanensis</i>   | China    | -             | CIB20050095    | KC460337 | Xiang <i>et al.</i> 2013  |
| 51 | <i>Le. khasiorum</i>     | <i>L. khasiorum</i>    | India    | Meghalaya     | SDBDU 2009.329 | KY022303 | Mahony <i>et al.</i> 2017 |
| 52 | <i>Le. kecil</i>         | <i>L. kecil</i>        | Malaysia | Cameron       | KUHE 52439     | LC202003 | Matsui <i>et al.</i> 2017 |
| 53 | <i>Le. kecil</i>         | <i>L. kecil</i>        | Malaysia | Cameron       | KUHE 52440     | LC202004 | Matsui <i>et al.</i> 2017 |
| 54 | <i>Le. kajangensis</i>   | <i>L. kajangensis</i>  | Malaysia | Tioman        | LSUHC 4431     | LC202001 | Matsui <i>et al.</i> 2017 |
| 55 | <i>Le. kajangensis</i>   | <i>L. kajangensis</i>  | Malaysia | Tioman        | LSUHC 4439     | LC202002 | Matsui <i>et al.</i> 2017 |
| 56 | <i>L. baluensis</i>      | <i>L. baluensis</i>    | Malaysia | Sabah         | SP 21604       | LC056792 | Eto <i>et al.</i> 2015    |
| 57 | <i>L. parva</i>          | <i>L. parva</i>        | Malaysia | Sarawak       | KUHE 55308     | LC056791 | Eto <i>et al.</i> 2015    |
| 58 | <i>Le. pictus</i>        | <i>L. picta</i>        | Malaysia | Sarawak       | KUHE 39298     | AB847556 | Matsui <i>et al.</i> 2014 |
| 59 | <i>L. parva</i>          | <i>L. juliandringi</i> | Malaysia | Sarawak       | KUHE 55337     | LC056790 | Eto <i>et al.</i> 2015    |
| 60 | <i>L. mjobergi</i>       | <i>L. mjobergi</i>     | Malaysia | Sarawak       | KUHE 43872     | LC056787 | Eto <i>et al.</i> 2015    |
| 61 | <i>Le. marmoratus</i>    | <i>L. marmorata</i>    | Malaysia | Sarawak       | KUHE 53192     | AB969292 | Matsui <i>et al.</i> 2014 |
| 62 | <i>Le. marmoratus</i>    | <i>L. marmorata</i>    | Malaysia | Sarawak       | KUHE 53181     | AB969291 | Matsui <i>et al.</i> 2014 |
| 63 | <i>Le. marmoratus</i>    | <i>L. marmorata</i>    | Malaysia | Sarawak       | KUHE 53227     | AB969289 | Matsui <i>et al.</i> 2014 |
| 64 | <i>Le. marmoratus</i>    | <i>L. marmorata</i>    | Malaysia | Sarawak       | KUHE 53925     | AB969287 | Matsui <i>et al.</i> 2014 |
| 65 | <i>Le. marmoratus</i>    | <i>L. marmorata</i>    | Malaysia | Sarawak       | KUHE 53204     | AB969288 | Matsui <i>et al.</i> 2014 |
| 66 | <i>Le. hamidi</i>        | <i>L. hamidi</i>       | Malaysia | Sarawak       | KUHE 17545     | AB969286 | Matsui <i>et al.</i> 2014 |
| 67 | <i>Le. maurus</i>        | <i>L. maura</i>        | Malaysia | Sarawak       | SP 21450       | AB847559 | Matsui <i>et al.</i> 2014 |
| 68 | <i>Le. fritinniensi</i>  | <i>L. fritinniensi</i> | Malaysia | Sarawak       | KUHE 55371     | AB847557 | Matsui <i>et al.</i> 2014 |
| 69 | <i>Le. sabahmontanus</i> | <i>L. sabahmontana</i> | Malaysia | Sabah         | BORN 12632     | AB847551 | Matsui <i>et al.</i> 2014 |
| 70 | <i>Le. aereus</i>        | <i>L. aerea</i>        | Vietnam  | Quang Nam     | VNMN 2013.70   | LC741037 | Matsui <i>et al.</i> 2023 |
| 71 | <i>Le. laui</i>          | <i>L. laui</i>         | China    | Hongkong      | KUHE 21705     | LC201982 | Matsui <i>et al.</i> 2017 |
| 72 | <i>Le. liui</i>          | <i>L. liui</i>         | China    | Guangxi       | ZYC A100       | EF544238 | Zheng <i>et al.</i> 2008  |

|    |                      |                      |           |            |            |           |                           |
|----|----------------------|----------------------|-----------|------------|------------|-----------|---------------------------|
| 73 | <i>L. sungi</i>      | <i>L. sungi</i>      | Vietnam   | Tam Dao    | KUHE 55242 | LC741038  | Matsui <i>et al.</i> 2023 |
| 74 | <i>Le. gracilis</i>  | <i>L. gracilis</i>   | Malaysia  | Sarawak    | KUHE 55624 | AB847560  | Matsui <i>et al.</i> 2014 |
| 75 | <i>Lb. hasseltii</i> | <i>Le. hasseltii</i> | Indonesia | Java       | KUHE 42820 | AB530424* | Matsui <i>et al.</i> 2010 |
| 76 | <i>Lb. smithi</i>    | <i>Le. smithi</i>    | Thailand  | Loei       | KUHE 19281 | AB530432* | Matsui <i>et al.</i> 2010 |
| 77 | <i>Lb. chapaense</i> | <i>Le. chapaense</i> | Thailand  | Chiang Mai | -          | AB530444* | Hamidy <i>et al.</i> 2012 |
| 78 | <i>M. nasuta</i>     | <i>M. nasuta</i>     | Malaysia  | Sarawak    | KUHE 53577 | LC202013* | Matsui <i>et al.</i> 2017 |

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**Sup. Table 2.** Uncorrected p-distances of *korifi* clade, comparing between 12S rRNA (lower) and 16S rRNA (upper) genes that was used in phylogenetic studies (high to low divergences are indicated by the colors from red to blue).

|    |          |                      | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   |
|----|----------|----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1  | PV746785 | <i>L. korifi</i>     |      | 0.01 | 0.02 | 0.02 | 0.02 | 0.01 | 0.10 | 0.10 | 0.10 | 0.12 | 0.12 | 0.12 | 0.12 | 0.13 | 0.12 | 0.12 | 0.12 | 0.11 | 0.11 | 0.14 |
| 2  | PV746786 | <i>L. korifi</i>     | 0.00 |      | 0.02 | 0.01 | 0.01 | 0.01 | 0.09 | 0.09 | 0.10 | 0.11 | 0.11 | 0.11 | 0.11 | 0.13 | 0.11 | 0.11 | 0.11 | 0.11 | 0.10 | 0.13 |
| 3  | PV746787 | <i>L. korifi</i>     | 0.00 | 0.00 |      | 0.02 | 0.01 | 0.01 | 0.10 | 0.10 | 0.10 | 0.12 | 0.12 | 0.12 | 0.11 | 0.13 | 0.11 | 0.12 | 0.12 | 0.11 | 0.11 | 0.14 |
| 4  | PV746788 | <i>L. korifi</i>     | 0.00 | 0.00 | 0.00 |      | 0.01 | 0.01 | 0.10 | 0.10 | 0.11 | 0.12 | 0.12 | 0.12 | 0.12 | 0.13 | 0.12 | 0.12 | 0.12 | 0.11 | 0.11 | 0.14 |
| 5  | PV746789 | <i>L. korifi</i>     | 0.00 | 0.00 | 0.00 | 0.00 |      | 0.01 | 0.10 | 0.10 | 0.10 | 0.11 | 0.11 | 0.12 | 0.11 | 0.13 | 0.11 | 0.12 | 0.12 | 0.11 | 0.11 | 0.13 |
| 6  | LC741033 | <i>L. korifi</i>     | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |      | 0.09 | 0.09 | 0.09 | 0.11 | 0.11 | 0.11 | 0.11 | 0.12 | 0.11 | 0.11 | 0.11 | 0.10 | 0.10 | 0.13 |
| 7  | LC741036 | <i>L. sinorensis</i> | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 |      | 0.00 | 0.01 | 0.13 | 0.13 | 0.13 | 0.13 | 0.15 | 0.13 | 0.11 | 0.11 | 0.11 | 0.11 | 0.13 |
| 8  | LC741035 | <i>L. sinorensis</i> | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.00 |      | 0.01 | 0.12 | 0.12 | 0.13 | 0.13 | 0.14 | 0.13 | 0.11 | 0.11 | 0.11 | 0.11 | 0.13 |
| 9  | LC741034 | <i>L. sinorensis</i> | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.00 | 0.00 |      | 0.13 | 0.13 | 0.13 | 0.13 | 0.15 | 0.13 | 0.12 | 0.12 | 0.12 | 0.11 | 0.14 |
| 10 | LC741032 | <i>L. murphyi</i>    | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |      | 0.00 | 0.00 | 0.01 | 0.03 | 0.01 | 0.11 | 0.11 | 0.12 | 0.11 | 0.13 |
| 11 | LC741031 | <i>L. murphyi</i>    | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.00 |      | 0.00 | 0.01 | 0.03 | 0.01 | 0.11 | 0.11 | 0.12 | 0.11 | 0.13 |
| 12 | LC741030 | <i>L. murphyi</i>    | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.13 | 0.12 | 0.13 | 0.00 | 0.00 |      | 0.01 | 0.03 | 0.01 | 0.11 | 0.11 | 0.12 | 0.11 | 0.14 |
| 13 | LC741029 | <i>L. murphyi</i>    | 0.13 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.13 | 0.12 | 0.13 | 0.01 | 0.01 | 0.01 |      | 0.02 | 0.00 | 0.11 | 0.11 | 0.12 | 0.11 | 0.13 |
| 14 | LC741028 | <i>L. murphyi</i>    | 0.14 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.14 | 0.13 | 0.14 | 0.04 | 0.04 | 0.04 | 0.04 |      | 0.02 | 0.13 | 0.13 | 0.13 | 0.12 | 0.15 |
| 15 | LC741027 | <i>L. murphyi</i>    | 0.13 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.01 | 0.01 | 0.01 | 0.00 | 0.03 |      | 0.11 | 0.11 | 0.12 | 0.11 | 0.13 |
| 16 | KC460337 | <i>L. oshanensis</i> | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.11 | 0.11 | 0.11 | 0.13 | 0.13 | 0.13 | 0.13 | 0.14 | 0.13 |      | 0.00 | 0.08 | 0.07 | 0.12 |
| 17 | NC020610 | <i>L. oshanensis</i> | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.11 | 0.11 | 0.11 | 0.13 | 0.13 | 0.13 | 0.13 | 0.14 | 0.13 | 0.00 |      | 0.08 | 0.07 | 0.12 |
| 18 | NC088425 | <i>L. alpina</i>     | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.11 | 0.11 | 0.11 | 0.14 | 0.14 | 0.14 | 0.14 | 0.15 | 0.13 | 0.09 | 0.09 |      | 0.07 | 0.12 |
| 19 | LC201983 | <i>L. bourretti</i>  | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.13 | 0.13 | 0.13 | 0.13 | 0.15 | 0.13 | 0.06 | 0.06 | 0.09 |      | 0.11 |
| 20 | KY022303 | <i>L. khasiorum</i>  | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.11 | 0.11 | 0.11 | 0.13 | 0.13 | 0.13 | 0.13 | 0.15 | 0.13 | 0.11 | 0.11 | 0.10 | 0.12 |      |

**Sup. Table 3.** Measurements (in mm) of the adult specimens of *L. korifi* in Doi Inthanon National Park, Chaing Mai Province, northern Thailand“–” data unavailable.

| Localit<br>y | Doi Inthanon National Park |                  |             |             |             |             |             |                    |                    |                    |                    |                    |                    |                    |
|--------------|----------------------------|------------------|-------------|-------------|-------------|-------------|-------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|              | Ang Kha Luang              |                  |             |             |             |             |             | Kiew<br>Mae<br>Pan | Huay Mae Rake      |                    |                    |                    |                    |                    |
| Coll<br>No.  | holotype                   | PR<br>03323<br>* | PR<br>03324 | PR<br>03501 | PR<br>03502 | PR<br>03321 | PR<br>03322 | PR<br>03504        | THN<br>HM<br>09480 | THN<br>HM<br>09482 | THN<br>HM<br>09483 | THN<br>HM<br>09484 | THN<br>HM<br>09485 | THN<br>HM<br>09481 |
| Sex          | female                     | male             | male        | male        | male        | female      | female      | male               | male               | male               | male               | male               | male               | female             |
| SVL          | 22.7                       | 21.5             | 20.2        | 23.3        | 26.5        | 27.8        | 28.2        | 22.7               | 21.4               | 21.1               | 25.2               | 23.6               | 22.1               | 28.8               |
| HW           | 8.5                        | 6.6              | 6.8         | 7.9         | 8.7         | 9.5         | 9.8         | 8.0                | 7.4                | 7.3                | 9.9                | 8.1                | 7.6                | 9.8                |
| HL           | 9.2                        | 7.7              | 7.2         | 8.1         | 10.0        | 9.0         | 9.0         | 9.3                | 7.9                | 8.1                | 10.9               | 8.8                | 8.0                | 10.3               |
| MN           | –                          | 6.7              | 6.1         | 7.2         | 8.8         | 8.4         | 8.2         | 8.4                | 7.1                | 7.1                | 9.6                | 7.3                | 7.1                | 9.1                |
| MFE          | –                          | 5.2              | 4.8         | 6.0         | 7.7         | 6.6         | 6.7         | 6.7                | 5.9                | 5.7                | 7.6                | 5.9                | 5.6                | 7.6                |
| MBE          | –                          | 2.8              | 2.4         | 2.4         | 4.2         | 3.3         | 3.5         | 4.4                | 2.2                | 2.5                | 3.7                | 2.5                | 2.6                | 3.7                |
| IFE          | –                          | 3.6              | 3.2         | 3.2         | 3.6         | 3.7         | 4.1         | 3.0                | 3.5                | 3.5                | 4.2                | 3.6                | 3.4                | 4.2                |
| IBE          | –                          | 6.3              | 6.2         | 6.6         | 6.7         | 6.8         | 7.1         | 5.9                | 6.5                | 6.3                | 7.9                | 6.6                | 6.3                | 7.7                |
| FLL          | –                          | 4.8              | 4.9         | 5.5         | 6.3         | 5.9         | 6.4         | 5.3                | 4.0                | 5.4                | 7.2                | 5.4                | 5.0                | 7.0                |
| HAL          | –                          | 5.6              | 5.2         | 5.9         | 6.6         | 6.4         | 7.2         | 5.9                | 5.5                | 5.7                | 7.2                | 6.2                | 6.1                | 7.5                |
| TFL          | –                          | 3.0              | 2.9         | 2.7         | 3.5         | 4.3         | 3.8         | 2.8                | 4.1                | 3.9                | 4.8                | 4.2                | 4.5                | 5.2                |
| TL           | –                          | 10.3             | 10.2        | 10.7        | 12.4        | 12.2        | 12.1        | 10.9               | 4.9                | 5.5                | 6.7                | 6.6                | 4.6                | 7.2                |
| FOL          | 11.0                       | 11.4             | 10.0        | 10.1        | 11.6        | 10.0        | 12.3        | 8.0                | 10.5               | 10.9               | 13.0               | 10.9               | 10.8               | 14.0               |
| FTL          | –                          | 4.6              | 5.1         | 6.2         | 6.6         | 6.1         | 7.0         | 4.1                | 5.4                | 5.6                | 7.6                | 6.1                | 6.0                | 7.3                |
| IN           | 2.8                        | 2.1              | 2.3         | 2.1         | 2.5         | 2.8         | 2.8         | 2.0                | 1.7                | 1.7                | 2.2                | 2.0                | 18                 | 2.3                |
| EN           | –                          | 1.7              | 1.0         | 1.4         | 1.3         | 1.7         | 2.3         | 1.8                | 1.2                | 1.3                | 1.9                | 1.3                | 1.3                | 2.1                |
| EL           | 3.7                        | 2.5              | 2.5         | 3.1         | 3.5         | 3.6         | 3.2         | 3.3                | 3.2                | 3.2                | 4.0                | 3.8                | 3.2                | 3.5                |
| TYD          | 1.7                        | 1.2              | 1.1         | 1.0         | 1.8         | 1.6         | 1.6         | 1.4                | 1.1                | 1.3                | 1.9                | 1.7                | 1.3                | 1.9                |
| TYE          | 0.6                        | 0.9              | 0.5         | 0.8         | 0.9         | 0.9         | 3.1         | 0.2                | 0.4                | 0.5                | 1.3                | 0.4                | 0.7                | 1.0                |
| IUE          | 2.8                        | 2.8              | 3.1         | 2.5         | 3.6         | 3.3         | 2.3         | 3.1                | 2.9                | 3.0                | 3.0                | 2.9                | 2.5                | 3.0                |
| UEW          | 2.1                        | 2.0              | 2.2         | 2.2         | 2.3         | 2.1         | 0.7         | 2.1                | 1.9                | 2.4                | 2.5                | 2.4                | 2.5                | 3.1                |
| WTF          | –                          | 1.2              | 1.2         | 1.0         | 1.2         | 0.6         | 0.9         | 0.9                | 0.9                | 1.1                | 1.5                | 0.9                | 0.8                | 1.1                |

|             |     |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|
| <b>WFF</b>  | –   | 0.9  | 0.7  | 1.0  | 0.6  | 0.8  | 0.2  | 0.5  | 0.5  | 1.0  | 1.0  | 1.5  | 1.1  | 1.2  |
| <b>WI</b>   | –   | 1.2  | 0.5  | 0.6  | 0.5  | 0.3  | 0.4  | 0.3  | 0.8  | 0.9  | 1.0  | 0.4  | 0.4  | 1.0  |
| <b>WH</b>   | –   | 0.9  | 0.6  | 0.5  | 0.7  | 0.7  | 1.3  | 0.5  | 0.5  | 0.6  | 0.7  | 0.6  | 1.0  | 0.73 |
| <b>IMT</b>  | 1.0 | 0.5  | 0.7  | 0.7  | 0.9  | 0.8  | 2.1  | 0.6  | 1.2  | 1.4  | 1.0  | 1.4  | 1.0  | 1.15 |
| <b>ITL</b>  | –   | 1.3  | 1.6  | 1.5  | 2.1  | 2.3  | 2.3  | 2.0  | 1.6  | 1.9  | 2.2  | 1.7  | 2.0  | 2.6  |
| <b>MTTF</b> | –   | 3.8  | 3.8  | 3.6  | 3.5  | 4.0  | 3.8  | 3.2  | 3.8  | 3.9  | 4.5  | 3.6  | 4.0  | 5.4  |
| <b>MTFF</b> | –   | 3.3  | 4.4  | 3.5  | 4.4  | 3.9  | 6.8  | 3.2  | 3.5  | 3.5  | 4.4  | 3.4  | 4.0  | 5.3  |
| <b>TFTF</b> | –   | 5.9  | 6.4  | 5.8  | 7.4  | 6.3  | 6.7  | 4.8  | 5.7  | 6.0  | 7.3  | 7.2  | 5.01 | 7.5  |
| <b>FFTF</b> | –   | 5.9  | 5.9  | 6.6  | 6.9  | 8.9  | 8.0  | 4.0  | 6.5  | 6.8  | 7.6  | 7.2  | 6.6  | 8.4  |
| <b>FL</b>   | –   | 10.5 | 10.9 | 10.7 | 11.9 | 11.6 | 11.3 | 10.4 | 10.2 | 10.1 | 13.6 | 8.0  | 9.8  | 13.4 |
| <b>SL</b>   | 3.6 | 3.0  | 3.3  | 2.7  | 3.7  | 3.6  | 3.4  | 3.2  | 3.0  | 2.5  | 3.6  | 2.9  | 2.7  | 3.1  |
| <b>NS</b>   | –   | 1.3  | 1.1  | 0.9  | 1.1  | 1.3  | 1.7  | 1.4  | 1.3  | 1.0  | 1.3  | 1.6  | 1.7  | 1.3  |
| <b>TW</b>   | –   | 1.6  | 1.5  | 1.3  | 1.5  | 2.0  | 1.8  | 1.7  | 2.0  | 2.3  | 2.0  | 1.9  | 1.6  | 2.3  |
| <b>TFOL</b> | –   | 15.2 | 17.2 | 16.3 | 19.2 | 17.8 | 18.9 | 14.5 | 15.9 | 16.2 | 20.1 | 16.6 | 15.5 | 21.2 |

**Sup. Table 4.** Measurements (in mm) of *L. korifi* tadpoles from Doi Inthanon National Park, Chaing Mai Province, northern Thailand

| Locality  | Ang Kha Luang |             |             |             |             | Kiew Mae Pan |             |
|-----------|---------------|-------------|-------------|-------------|-------------|--------------|-------------|
| Coll. No. | PR 03451.3    | PR 03451.4  | PR 03451.5  | PR 03503.2  | PR 03451.1* | PR 03451.2   | PR 03503.1  |
| Stage     | 26            | 26          | 26          | 26          | 34          | 27           | 35          |
| BH        | 4.8           | 5.6         | 3.6         | 5.2         | 5.6         | 3.7          | 4.7         |
| BL        | 13.2          | 12.8        | 11.1        | 12.4        | 15.4        | 11.2         | 15.2        |
| BW        | 5.8           | 6.9         | 5.0         | 6.3         | 8.8         | 4.9          | 6.8         |
| ED        | 0.7           | 0.7         | 0.7         | 0.7         | 0.9         | 0.9          | 1.2         |
| LF        | 1.3           | 1.3         | 1.2         | -           | -           | -            | 1.3         |
| MTH       | 11.3          | 4.6         | 4.6         | 3.0         | 5.0         | -            | 7.0         |
| ND        | 2.2           | 2.5         | 2.1         | 2.5         | 2.8         | 0.6          | 0.8         |
| NN        | 0.5           | 0.5         | 0.4         | 0.5         | 0.7         | 2.3          | 3.0         |
| NP        | 1.2           | 1.2         | 0.9         | 1.2         | 1.4         | 1.0          | 1.0         |
| PP        | 2.6           | 3.0         | 2.4         | 2.9         | 3.3         | 2.0          | 2.9         |
| RN        | 1.6           | 1.2         | 1.0         | 0.9         | 1.3         | 1.7          | 2.7         |
| SD        | 0.5           | 0.5         | 0.5         | 0.7         | 0.5         | 0.5          | 0.7         |
| SU        | 11.6          | 11.3        | 10.3        | 13.3        | 13.3        | 9.6          | 14.4        |
| TAL       | 39.9          | 40.1        | 25.8        | 21.5        | 24.8        | 15.2         | 48.7        |
| TL        | 26.3          | 27.7        | 16.4        | 9.5         | 9.8         | 4.3          | 34.9        |
| TMH       | 2.7           | 2.7         | 2.3         | 3.0         | 3.3         | 2.8          | 3.8         |
| TMW       | 1.9           | 2.1         | 1.7         | 2.4         | 2.5         | 2.1          | 3.1         |
| UF        | 1.0           | 0.9         | 0.8         | -           | -           | -            | 2.0         |
| AL        | 0.8           | 1.0         | 0.8         | 1.0         | 0.9         | 1.3          | 1.4         |
| PL        | 1.3           | 1.2         | 0.9         | 0.7         | 1.3         | 1.0          | 0.9         |
| ODW       | 2.9           | 3.3         | 2.4         | 3.4         | 3.4         | 2.3          | 3.8         |
| KTD       | 1:3+3/2+2:1   | 1:3+3/2+2:1 | 1:3+3/2+2:1 | 1:3+3/2+2:1 | 1:3+3/2+2:1 | 1:3+3/2+2:1  | 1:3+3/2+2:1 |
| CIL       | 12/12         | 13/13       | 13/12       | 12/13       | 18/18       | 15/16        | 16/17       |
| SOL       | 7/7           | 7/7         | 7/7         | 7/9         | 6/7         | 7/8          | 6/5         |
| IOL       | 20/21         | 21/21       | 21/21       | 20/22       | 22/22       | 20/21        | 22/22       |
| LL        | 15/15         | 15/15       | 15/15       | 17/17       | 14/14       | 16/16        | 18/18       |
| DL        | 87/87         | 85/86       | 84/84       | 45/46       | 30/31       | 85/77        | 35/35       |
| DLL       | 54/53         | 53/53       | 55/55       | 50/52       | 57/59       | 55/46        | 58/56       |
| AL        | 16/16         | 15/16       | 17/17       | 16/17       | 18/18       | 15/16        | 11/13       |
| ML        | 30/30         | 31/31       | 31/31       | 19/20       | 31/31       | 32/33        | 30/30       |
| VL        | 18/18         | 18/18       | 18/18       | 18/18       | 18/18       | 18/18        | 18/18       |

Note. “-“=data unavailable; CIL= Canthoinfraorbital line; SOL=Supraorbital line; IOL=Infraorbital line; LL= longitudinal oral; DL=Dorsal line; DLL=Dorsolateral line; AL=Angular line; ML=Medial line; VL=Ventral line.

**Sup. Table 5.** Comparison of key characteristics of tadpoles within the genus *Leptobrachella*. Note: “–” data unavailable

| Species                 | Stage        | BL (mm)                  | KRF                                                                   | Lateral line | Gut tube  | Coloration                                                                         | References                                                       |
|-------------------------|--------------|--------------------------|-----------------------------------------------------------------------|--------------|-----------|------------------------------------------------------------------------------------|------------------------------------------------------------------|
| <i>L. korifi</i>        | 26–35<br>n=7 | 13.0±1.60<br>(11.1–15.4) | 1:3+3/2+2:1                                                           | Visible      | Visible   | Beige with brown blotches on body, tail and fin                                    | This study                                                       |
| <i>L. aerea</i>         | 25–38        | 12.9–16.9                | 1:3+3/2+2:1, 1:3+3/3+3:1,<br>1:4+4/3+3:1, 1:5+5/2+2:1,<br>1:5+5/3+3:1 | Visible      | Visible   | Brown to beige with dark dots                                                      | Ohler <i>et al.</i> , 2011;<br>Vassilieva, 2021                  |
| <i>L. arayai</i>        | 30           | –                        | 1/0                                                                   | –            | Visible   | Brownish with pale speckling                                                       | Malkmus <i>et al.</i> ,<br>1999; Vassilieva,<br>2021             |
| <i>L. baluensis</i>     | –            | –                        | 0/0                                                                   | Visible      | Visible   | Uniformly dark brown above and unpigmented, semitranslucent below                  | Haas <i>et al.</i> , 2022                                        |
| <i>L. bourretti</i>     | 25–30        | 18.9                     | 1:3+3/2+2:1, 1:4+4/2+2:1                                              | Visible      | Visible   | Brown olive with lighter spot                                                      | Ohler <i>et al.</i> , 2011;<br>Vassilieva, 2021                  |
| <i>L. bashaensis</i>    | –            | –                        | 1:3+3/1+1:2                                                           | –            | Visible   | Dark brown with small brown, irregularly shaped spot                               | Lyu <i>et al.</i> , 2020                                         |
| <i>L. bidoupensis</i>   | 25–36        | 14.3 (11.0–<br>17.2)     | 1+1/0                                                                 | Visible      | Visible   | Pale brown                                                                         | Vassilieva, 2021                                                 |
| <i>L. brevicrus</i>     | 25           | 9.1±3.93<br>(5.28–14.88) | 0/0                                                                   | Visible      | Visible   | The brown pigmentation of head, body and tail disappear                            | Oberhummer <i>et al.</i> ,<br>2014                               |
| <i>L. botsfordi</i>     | 25–36        | 28.3–39.7                | 3+3/3+3:1                                                             | Visible      | Visible   | Whitish brown to gray                                                              | Nguyen <i>et al.</i> , 2020;<br>Vassilieva, 2021                 |
| <i>L. dringi</i>        | 25           | 6.3±6.33 (3.8–<br>8.9)   | 1:4+4/3+3, 1:3+3/2+2:1                                                | Invisible    | Visible   | Pigmented brown                                                                    | Oberhummer <i>et al.</i> ,<br>2014; Haas <i>et al.</i> ,<br>2022 |
| <i>L. gracilis</i>      | 25–37        | –                        | 1:3+3/2+2:1, 1:4+4/2+2:1,<br>1:6+6/2+2:1                              | Invisible    | Visible   | Gray with a bluish-white sheen                                                     | Inger, 1985; Haas <i>et al.</i> , 2022                           |
| <i>L. itiokai</i>       | 25           | –                        | 0/0                                                                   | Visible      | Visible   | Translucent brown                                                                  | Oberhummer <i>et al.</i> ,<br>2014; Haas <i>et al.</i> ,<br>2022 |
| <i>L. kajangensis</i>   | 30–38        | 26.0±3.22<br>(23.3–31.9) | 4:1+1/3+3:1, 2:4+4/3+3:2,<br>1:5+5/4+4:1                              | Visible      | Visible   | Dusky brown with darker mottling                                                   | Grismer <i>et al.</i> , 2004                                     |
| <i>L. kalonensis</i>    | 26           | 14.1±1.73<br>(12.4–16.3) | 2+2/1+1, 2+2/2+2                                                      | Visible      | Invisible | Brown dorsally and laterally pale ventrally, tail is brown                         | Le <i>et al.</i> , 2023                                          |
| <i>L. mangshanensis</i> | –            | 14.4                     | ≥4/3                                                                  | –            | Visible   | Brown                                                                              | Hou <i>et al.</i> , 2018                                         |
| <i>L. melanoleuca</i>   | 26–39        | 15.0±1.22<br>(12.0–16.9) | 1:2+2/0, 2+2/0                                                        | Visible      | Invisible | Brown anterodorsally, dark laterally and anteriorly, gray tail with brown blotches | Rongchapho <i>et al.</i> ,<br>2024                               |



|                          |       |                          |                                                       |           |         |                                                                                                                 |                                        |
|--------------------------|-------|--------------------------|-------------------------------------------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------|----------------------------------------|
| <i>L. mJORBERGI</i>      | 25–41 | –                        | 0/0                                                   | Visible   | Visible | in dorsal<br>Uniformly dark brown above and unpigmented, semitranslucent below                                  | Inger, 1985; Haas <i>et al.</i> , 2022 |
| <i>L. minima</i>         | 25–37 | 14.4                     | 1:4+4/3+3:1                                           | Visible   | Visible | Grey olive with black spots on caudal muscle                                                                    | Ohler <i>et al.</i> , 2011             |
| <i>L. oshanensis</i>     | 25–36 | 17.1±1.49<br>(13.4–18.6) | 1:3+3/2+2:1, 1:3+3/3+3:1                              | Visible   | Visible | Uniformly rufous                                                                                                | Shi <i>et al.</i> , 2021               |
| <i>L. pelodytoides</i>   | –     | –                        | 2:4+4/3+3:1                                           | –         | Visible | Dark brown with speckled and spotted with black                                                                 | Smith, 1917                            |
| <i>L. petrops</i>        | 25–45 | –                        | 1:3+3/2+2:1                                           | Invisible | Visible | Olive brown to orangish brown with distinct whitish golden speckling, caudal muscle with some large black spots | Le <i>et al.</i> , 2021                |
| <i>L. rowleyae</i>       | 25–38 | 12.0±1.72<br>(9.2–13.8)  | 1:3+3/2+2:1                                           | –         | Visible | Olive-brown to grey with distinct whitish-golden speckling                                                      | Nguyen <i>et al.</i> , 2018            |
| <i>L. ventripunctata</i> | 25–36 | 16.1                     | 1:3+3/2+2:1, 1:3+3/2+2:1,<br>1:3+3/3+3:1, 1:4+4/2+2:1 | Visible   | Visible | Reddish dorsally with indistinct spots or uniformly greyish brown                                               | Ohler <i>et al.</i> , 2011             |
| <i>L. yeae</i>           | 25–37 | 16.1±1.79<br>(12.9–18.6) | 1:2+2/2+2:1                                           | Visible   | Visible | Translucent light brown                                                                                         | Shi <i>et al.</i> , 2021               |
| <i>L. juliandringi</i>   | –     | –                        | 0/0                                                   | Visible   | Visible | Pinkish gray or uniformly dark brown                                                                            | Haas <i>et al.</i> , 2022              |