**Table S1.** Data of specimens of *Zearaja brevicaudata* and *Zearaja chilensis* examined for the present study. F: female, M: male, TL: total length, given in mm, UM: uncatalogued material stored at Laboratorio de biotaxonomia morfológica y molecular de peces, IIMyC (CONICET-UNMdP)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Species | Field Code | Collection Code | Stored | Collection country | Latitude | Longitud | Depth | Sex | TL |
| *Zearaja brevicaudata* | IIPB 696/1987 | IIPB 696/1987 | Instituto de Ciencias del Mar, Barcelona, España | Argentina | 54°48'S | 68°14'O | 135-150m | F | 467 |
| IIPB 699/1987 | IIPB 699/1987 | Instituto de Ciencias del Mar, Barcelona, España | Argentina | 54°55'S | 67°9'O | 30-40m | M | 313 |
| MACN ICT 569 | MACN ICT 569 | Museo Argentino Bernardino Rivadavia, Buenos Aires, Argentina | Argentina | - | - | - | F | 324 |
| RM-130 | UNMDP 5210 | Universidad Nacional de Mar del Plata, Mar del Plata, Argentina | Argentina | - | - | - | M | 440 |
| RM-131 | UNMDP 5211 | Universidad Nacional de Mar del Plata, Mar del Plata, Argentina | Argentina | - | - | - | F | 439 |
| RM-134 | UNMDP 5212 | Universidad Nacional de Mar del Plata, Mar del Plata, Argentina | Argentina | - | - | - | F | 524 |
| RM-141 | UNMDP 5213 | Universidad Nacional de Mar del Plata, Mar del Plata, Argentina | Argentina | - | - | - | M | 479 |
| RM-142 | UNMDP 5214 | Universidad Nacional de Mar del Plata, Mar del Plata, Argentina | Argentina | - | - | - | M | 710 |
| RM-163 | UNMDP 5215 | Universidad Nacional de Mar del Plata, Mar del Plata, Argentina | Argentina | - | - | - | F | 815 |
| RM-166 | UNMDP 5216 | Universidad Nacional de Mar del Plata, Mar del Plata, Argentina | Argentina | - | - | - | F | 830 |
| RM-186 | UNMDP 5217 | Universidad Nacional de Mar del Plata, Mar del Plata, Argentina | Argentina | - | - | - | M | 776 |
| RM- 194 | UNMDP 5218 | Universidad Nacional de Mar del Plata, Mar del Plata, Argentina | Argentina | 53°27,494´ S | 67° 43,607´ W | 52 m | M | 228 |
| RM-81 | UNMDP 5220 | Universidad Nacional de Mar del Plata, Mar del Plata, Argentina | Argentina | 53° 28.035 | 67° 47.254 | 35 | M | 617 |
| RM-90 | UNMDP 5221 | Universidad Nacional de Mar del Plata, Mar del Plata, Argentina | Argentina | 54° 31.075 | 65° 43.469 | 63 | F | 477 |
| RM-83 | UNMDP 5222 | Universidad Nacional de Mar del Plata, Mar del Plata, Argentina | Argentina | **-** | **.** | **.** | F | 493 |
| RM-82 | UNMDP 5223 | Universidad Nacional de Mar del Plata, Mar del Plata, Argentina | Argentina | 53 27.835 | 67 47.175 | 35 | M | 489 |
| RM-70 | UNMDP 5224 | Universidad Nacional de Mar del Plata, Mar del Plata, Argentina | Argentina | 46°18,05' | 64°18,05' | 119 | F | 254 |
| RM-91 | UNMDP 5225 | Universidad Nacional de Mar del Plata, Mar del Plata, Argentina | Argentina | 54 29.502 | 65 59.393 | 150 | F | 481 |
| RM-22 | UNMDP 5226 | Universidad Nacional de Mar del Plata, Mar del Plata, Argentina | Argentina | 36º54´ | 54º39´ | 63 | M | 491 |
| HoL-05-L13 | HoL-05-L13 | Instituto Nacional de Desarrollo Pesquero, Mar del Plata, Argentina | Argentina | 45,542 | 66,101 | - | F | 700 |
| INIDEP 816 | INIDEP 816 | Instituto Nacional de Desarrollo Pesquero, Mar del Plata, Argentina | Argentina | -47.6 | -63.6 | - | F | 646 |
| INIDEP 547 | INIDEP 547 | Instituto Nacional de Desarrollo Pesquero, Mar del Plata, Argentina | Argentina | - | - | - | F | 512 |
| INIDEP 575 | INIDEP 575 | Instituto Nacional de Desarrollo Pesquero, Mar del Plata, Argentina | Argentina | -36.87 | -54.48 | - | M | 474 |
| INIDEP 576 | INIDEP 576 | Instituto Nacional de Desarrollo Pesquero, Mar del Plata, Argentina | Argentina | -36.87 | -54.48 | - | M | 360 |
| INIDEP 353 | INIDEP 353 | Instituto Nacional de Desarrollo Pesquero, Mar del Plata, Argentina | Argentina | -54.83 | -68.18 | - | M | 216 |
| RM-132 | - | no | Argentina | - | - | - | M | 547 |
| RM-133 | - | no | Argentina | - | - | - | M | 462 |
| RM-143 | - | no | Argentina | - | - | - | M | 492 |
| RM-144 | - | no | Argentina | - | - | - | F | 482 |
| RM-147 | - | no | Argentina | - | - | - | F | 501 |
| RM-150 | - | no | Argentina | - | - | - | M | 511 |
| RM-151 | - | no | Argentina | - | - | - | M | 523 |
| RM-152 | - | no | Argentina | - | - | - | M | 570 |
| RM-153 | - | no | Argentina | - | - | - | F | 695 |
| RM-154 | - | no | Argentina | - | - | - | F | 843 |
| RM-155 | - | no | Argentina | - | - | - | F | 681 |
| RM-156 | - | no | Argentina | - | - | - | F | 644 |
| RM-157 | - | no | Argentina | - | - | - | M | 466 |
| RM-158 | - | no | Argentina | - | - | - | M | 310 |
| RM-159 | - | no | Argentina | - | - | - | M | 329 |
| RM-161 | - | no | Argentina | - | - | - | F | 942 |
| RM-162 | - | no | Argentina | - | - | - | M | 884 |
| RM-164 | - | no | Argentina | - | - | - | M | 541 |
| RM-165 | - | no | Argentina | - | - | - | F | 1017 |
| RM-167 | - | no | Argentina | - | - | - | F | 688 |
| RM-168 | - | no | Argentina | - | - | - | F | 561 |
| RM-169 | - | no | Argentina | - | - | - | M | 543 |
| RM-170 | - | no | Argentina | 53° 27.237 | 64° 55.675 | 127 | F | 943 |
| RM-187 | - | no | Argentina | 40°29,896´ | 59°1,336´ | 87 | M | 783 |
| RM-188 | - | no | Argentina | 40°29,896´ | 59°1,336´ | 87 | F | 830 |
| RM-195 | - | no | Argentina | 40°29,896´ | 59°1,336´ | - | F | 350 |
| RM-196 | - | no | Argentina | 39°28,648´ | 56°33,835 | - | F | 690 |
| RM-197 | - | no | Argentina | 39°28,648´ | 56°33,835 | - | F | 705 |
| RM 275 | - | no | Argentina | - | - | - | M | 750 |
| RM 276 | - | no | Argentina | - | - | - | M | 787 |
| RM 277 | - | no | Argentina | - | - | - | F | 805 |
| RM 278 | - | no | Argentina | 40°29,896´ | 59°1,336´ | 87 | F | 455 |
| RM 279 | - | no | Argentina | 40°29,896´ | 59°1,336´ | 87 | M | 441 |
| RM 286 | - | no | Argentina | - | - | - | F | 392 |
| RM 287 | - | no | Argentina | - | - | - | M | 500 |
| RM 308 | - | no | Argentina | - | - | - | F | 978 |
| RM 309 | - | no | Argentina | - | - | - | F | 760 |
| RM 312 | - | no | Argentina | 45.447 | 64.501 | 85 | F | 427 |
| RM 317 | - | no | Argentina | 52.115 | 64.216 | 174 | F | 740 |
| RM 318 | - | no | Argentina | 46.223 | 63.543 | 101 | F | 625 |
| RM 337 | - | no | Argentina | 46.135 | 64.086 | 105 | M | 645 |
| RM 338 | - | no | Argentina | 45.447 | 64.501 | 85 | M | 514 |
| RM 346 | - | no | Argentina | 45.298 | 65.098 | 82 | M | 525 |
| RM 347 | - | no | Argentina | 45.478 | 60.307 | 120 | M | 469 |
| *Zearaja chilensis* | MNHN cl- ict 6915 | MNHN cl- ict 6915 | Museo Nacional de Historia Natural, Santiago de Chile | Chile | 37°42´ | 73°5´ | - | M | 532 |
| MNHN cl ict 6920 | MNHN cl ict 6920 | Museo Nacional de Historia Natural, Santiago de Chile | Chile | 37°42´ | 73°5´ | - | M | 534 |
| MNHN cl.ict 5621 | MNHN cl.ict 5621 | Museo Nacional de Historia Natural, Santiago de Chile | Chile | 30° | 71°25´4´´ | 77 | F | 369 |
| MNHN cl.ict 6911 | MNHN cl.ict 6911 | Museo Nacional de Historia Natural, Santiago de Chile | Chile | 37°42´ | 72°5´ | - | M | 505 |
| MNHN cl-ict 5604 | MNHN cl-ict 5604 | Museo Nacional de Historia Natural, Santiago de Chile | Chile, Horcon Valparaiso | 32°40´8´´ | 71°30´ | - | M | 325 |
| MNHN cl-ict 5609 | MNHN cl-ict 5609 | Museo Nacional de Historia Natural, Santiago de Chile | Chile | 37°42´ | 73°50´4´ | - | M | 294 |
| MNHN cl-ict 5651 | MNHN cl-ict 5651 | Museo Nacional de Historia Natural, Santiago de Chile | Chile | 34°54´ | 72°6´ | 55 | F | 409 |
| MNHN cl-ict 5697 | MNHN cl-ict 5697 | Museo Nacional de Historia Natural, Santiago de Chile | Chile Sur Isla Mocha | 38°57.1´S | 73°38´S | - | F | 407 |
| MNHN cl-ict 5908 | MNHN cl-ict 5908 | Museo Nacional de Historia Natural, Santiago de Chile | Chile | 37°42´ | 73°5´ | - | F | 305 |
| MNHN cl-ict 6907 | MNHN cl-ict 6907 | Museo Nacional de Historia Natural, Santiago de Chile | Chile | 37°42' | 73°51´ | - | F | 507 |
| MNHN cl-ict 6909 | MNHN cl-ict 6909 | Museo Nacional de Historia Natural, Santiago de Chile | Chile | 37°42´ | 73°5´ | - | F | 382 |
| MNHN cl-ict 6919 | MNHN cl-ict 6919 | Museo Nacional de Historia Natural, Santiago de Chile | Chile | 37°42´ | 73°5´ | - | M | 469 |
| MNHN cl-ict 6925 | MNHN cl-ict 6925 | Museo Nacional de Historia Natural, Santiago de Chile | Chile | 51°00.6 | 75°44.2 | 122-124 | M | 525 |
| ZchUV06 | MNHN cl-ict 7612 | Museo Nacional de Historia Natural, Santiago de Chile | Chile | - | - | - | M | 869 |
| ZchUV07 | - | no | Chile | - | - | - | M | 374 |