

附录 3 *rpoC1* 基因分子进化速率表Appendix 3 Molecular evolution rate of *rpoC1* gene

| Species | E_t | E_v | <i>trsv/trst</i> | <i>trst</i> | <i>trsv</i> | d_N | d_S | ω |
|------------------------------------|-------------|-----------|------------------|-------------|-------------|-------------|-------------|-------------|
| <i>Asplenium pekinense</i> | 0.019783075 | 0.0049432 | 0.122930458 | 0.080525608 | 0.00989905 | 0.041938484 | 0.179908473 | 0.233110112 |
| <i>Asplenium prolongatum</i> | 0.01951061 | 0.007575 | 0.191011907 | 0.079416558 | 0.015169508 | 0.066439699 | 0.140779692 | 0.471940929 |
| <i>Hymenasplenium unilaterale</i> | 0.034372135 | 0.0030222 | 0.043257542 | 0.139909343 | 0.006052134 | 0.072886809 | 0.237027485 | 0.30750362 |
| <i>Athyrium anisopterum</i> | 0.005782812 | 0.0004778 | 0.040649165 | 0.023538529 | 0.000956822 | 0.008718516 | 0.047255892 | 0.184495844 |
| <i>Athyrium opacum</i> | 0.011338694 | 0.0023935 | 0.103853103 | 0.046153352 | 0.004793169 | 0.022578427 | 0.094330851 | 0.239353583 |
| <i>Athyrium sheareri</i> | 0.011461857 | 0.000956 | 0.041035688 | 0.046654678 | 0.001914507 | 0.005917513 | 0.121367266 | 0.048757072 |
| <i>Athyrium sinense</i> | 0.002359254 | 0 | 0 | 0.009603175 | 0 | 0.004321427 | 0.015395068 | 0.280702033 |
| <i>Diplazium bellum</i> | 0.011754764 | 0.0014348 | 0.060051459 | 0.047846936 | 0.002873278 | 0.024596608 | 0.091128812 | 0.269910335 |
| <i>Diplazium dilatatum</i> | 0.003999262 | 0 | 0 | 0.016278714 | 0 | 0.011601179 | 0.014747756 | 0.786640281 |
| <i>Diplazium dushanense</i> | 0.010991797 | 0.0050003 | 0.223806346 | 0.044741331 | 0.010013394 | 0.029071386 | 0.109625606 | 0.265187915 |
| <i>Deparia lancea</i> | 0.009138218 | 0.0010203 | 0.054929253 | 0.037196469 | 0.002043174 | 0.021681688 | 0.058832288 | 0.368533819 |
| <i>Deparia pycnosora</i> | 0.004773219 | 0.0008921 | 0.091948903 | 0.019429051 | 0.00178648 | 0.008208174 | 0.043286971 | 0.18962228 |
| <i>Diplazium striatum</i> | 0.008033164 | 0 | 0 | 0.032698427 | 0 | 0.012363044 | 0.058766413 | 0.210376021 |
| <i>Diplazium unilobum</i> | 0.015655719 | 0.0021254 | 0.066789717 | 0.063725495 | 0.004256208 | 0.028205803 | 0.12315394 | 0.229028827 |
| <i>Deparia viridifrons</i> | 0.015073196 | 0.0005424 | 0.017702608 | 0.061354376 | 0.001086132 | 0.037720224 | 0.077988177 | 0.483665921 |
| <i>Austroblechnum melanocaulon</i> | 0.037311112 | 0.0009573 | 0.012622709 | 0.151872242 | 0.001917039 | 0.078120661 | 0.223227504 | 0.349959838 |
| <i>Woodwardia unigemmata</i> | 0.027397736 | 0.0023953 | 0.043012583 | 0.111520544 | 0.004796787 | 0.060140146 | 0.185628539 | 0.323981141 |
| <i>Cibotium barometz</i> | 0.016668853 | 0.0028129 | 0.083021021 | 0.067849387 | 0.005632925 | 0.037248159 | 0.126478571 | 0.29450174 |
| <i>Alsophila podophylla</i> | 0.01070015 | 0.0018735 | 0.086139627 | 0.043554202 | 0.003751743 | 0.026481972 | 0.075616919 | 0.350212265 |
| <i>Alsophila spinulosa</i> | 0.005008491 | 0.001043 | 0.102457447 | 0.02038671 | 0.00208877 | 0.011549569 | 0.038969156 | 0.296377192 |
| <i>Cystopteris chinensis</i> | 0.034971662 | 0.0052813 | 0.074297299 | 0.142349674 | 0.010576196 | 0.054664231 | 0.323054624 | 0.169210488 |
| <i>Pteridium aquilinum</i> | 0.03888016 | 0.0071637 | 0.090647624 | 0.158258939 | 0.014345797 | 0.067409195 | 0.389891048 | 0.17289239 |

| | | | | | | | | |
|-----------------------------------|-------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|
| <i>Diplaziopsis cavaleriana</i> | 0.008794142 | 0 | 0 | 0.035795933 | 0 | 0.015250552 | 0.057932617 | 0.263246393 |
| <i>Diplaziopsis javanica</i> | 0.004237746 | 0.0004777 | 0.055463752 | 0.017249446 | 0.000956719 | 0.004349515 | 0.042401614 | 0.102578989 |
| <i>Homalosorus pycnocarpus</i> | 0.006015327 | 0.0014347 | 0.117343737 | 0.024484961 | 0.002873157 | 0.015413352 | 0.041563364 | 0.370839857 |
| <i>Cyrtomium devexiscapulae</i> | 0 | 0.0004873 | null | 0 | 0.000975908 | 0.002220957 | 0 | null |
| <i>Cyrtomium falcatum</i> | 0 | 0 | null | 0 | 0 | 0 | 0 | null |
| <i>Cyrtomium fortunei</i> | 0.000490155 | 0 | 0 | 0.001995143 | 0 | 0.002233162 | 0 | null |
| <i>Dryopteris decipiens</i> | 0.01274359 | 0.0004906 | 0.018939314 | 0.051871881 | 0.000982418 | 0.002220525 | 0.145647069 | 0.01524593 |
| <i>Dryopteris fragrans</i> | 0.010140352 | 0.0004899 | 0.023769753 | 0.041275586 | 0.00098111 | 0 | 0.117352474 | 0 |
| <i>Equisetum arvense</i> | 0.015235895 | 0.0097899 | 0.316121669 | 0.062016632 | 0.019604801 | 0.044106627 | 0.136862344 | 0.322269992 |
| <i>Equisetum hyemale</i> | 0.016518348 | 0.0215879 | 0.642968721 | 0.067236767 | 0.043231138 | 0.09622629 | 0.272658978 | 0.352918104 |
| <i>Callistopteris apiifolia</i> | 0.045158091 | 0.0133355 | 0.145284694 | 0.183812814 | 0.026705188 | 0.079605786 | 0.531152835 | 0.149873597 |
| <i>Hymenophyllum holochilum</i> | 0.037661332 | 0.0133724 | 0.174686889 | 0.153297787 | 0.026779113 | 0.093756884 | 0.350972093 | 0.267134869 |
| <i>Vandenboschia speciosa</i> | 0.046146451 | 0.0134148 | 0.143018075 | 0.187835862 | 0.026863923 | 0.086839101 | 0.514921742 | 0.16864524 |
| <i>Hypodematium crenatum</i> | 0.029251672 | 0.0053241 | 0.089544987 | 0.119066858 | 0.01066184 | 0.045768352 | 0.264932913 | 0.172754498 |
| <i>Angiopteris angustifolia</i> | 0.000689204 | 0 | 0 | 0.002805357 | 0 | 0 | 0.001378882 | 0 |
| <i>Angiopteris evecta</i> | 0.001786092 | 0.0004855 | 0.133730269 | 0.007270161 | 0.000972241 | 0.004469782 | 0.021289593 | 0.209951496 |
| <i>Marsilea crenata</i> | 0.040340888 | 0.0084126 | 0.102596105 | 0.164204728 | 0.016846765 | 0.06126126 | 0.399124033 | 0.15348928 |
| <i>Pilularia americana</i> | 0.02156959 | 0.0084464 | 0.192651996 | 0.087797487 | 0.016914361 | 0.034620586 | 0.292586284 | 0.118326073 |
| <i>Matteuccia struthiopteris</i> | 0.014841369 | 0 | 0 | 0.06041074 | 0 | 0.038763944 | 0.061158293 | 0.633829722 |
| <i>Onoclea sensibilis</i> | 0.021620692 | 0.0023942 | 0.054479552 | 0.088005496 | 0.0047945 | 0.052255419 | 0.141468139 | 0.369379419 |
| <i>Botrychium ternatum</i> | 0.063190702 | 0.0054648 | 0.042546993 | 0.257213279 | 0.010943652 | 0.129008019 | 0.457378093 | 0.282059899 |
| <i>Helminthostachys zeylanica</i> | 0.051945186 | 0.0114502 | 0.108446082 | 0.211439202 | 0.022929753 | 0.119067961 | 0.462371474 | 0.257515803 |
| <i>Mankyua chejuensis</i> | 0.052808832 | 0.0141296 | 0.13163468 | 0.214954611 | 0.028295481 | 0.123189177 | 0.608368417 | 0.202491079 |

| | | | | | | | | |
|------------------------------------|-------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|
| <i>Osmundastrum cinnamomeum</i> | 0.07184959 | 0.0058191 | 0.039845441 | 0.292458669 | 0.011653145 | 0.12338075 | 0.39243074 | 0.31440134 |
| <i>Lepisorus clathratus</i> | 0.024082458 | 0.0060763 | 0.124131635 | 0.098025941 | 0.01216812 | 0.050322459 | 0.226022141 | 0.222643934 |
| <i>Polypodium glycyrrhiza</i> | 0.017926686 | 0.0009777 | 0.026832907 | 0.072969307 | 0.001957979 | 0.012089808 | 0.181587723 | 0.066578332 |
| <i>Psilotum nudum</i> | 0.075707348 | 0.0406432 | 0.264116397 | 0.308161399 | 0.081390478 | 0.205209917 | 1.252844215 | 0.163795239 |
| <i>Adiantum shastense</i> | 0.03784276 | 0.0068289 | 0.088779522 | 0.154036276 | 0.013675267 | 0.085937239 | 0.27649272 | 0.31081194 |
| <i>Ceratopteris richardii</i> | 0.072506778 | 0.0413519 | 0.280584037 | 0.295133705 | 0.082809807 | 0.20005925 | 1.139486672 | 0.175569627 |
| <i>Myriopteris lindheimeri</i> | 0.031493677 | 0.003503 | 0.054722414 | 0.128192784 | 0.007015019 | 0.05501335 | 0.268447301 | 0.204931656 |
| <i>Rhachidosorus consimilis</i> | 0.029937311 | 0.0047991 | 0.078866636 | 0.121857706 | 0.009610507 | 0.052198262 | 0.251493992 | 0.207552718 |
| <i>Schizaea elegans</i> | 0.060306548 | 0.0879444 | 0.717446767 | 0.245473534 | 0.176114194 | 0.522212834 | 0.631003425 | 0.827591125 |
| <i>Schizaea pectinata</i> | 0.03476127 | 0.0047359 | 0.067026803 | 0.141493289 | 0.009483843 | 0.060870073 | 0.17574802 | 0.346348556 |
| <i>Ampelopteris prolifera</i> | 0.01058974 | 0.0014307 | 0.066469589 | 0.043104788 | 0.002865157 | 0.013082667 | 0.100594538 | 0.13005345 |
| <i>Christella appendiculata</i> | 0.018573318 | 0.0033446 | 0.088593336 | 0.075601377 | 0.006697778 | 0.021791594 | 0.192702949 | 0.113083865 |
| <i>Macrothelypteris torresiana</i> | 0.01964748 | 0.0028624 | 0.071674274 | 0.079973675 | 0.005732055 | 0.037444725 | 0.160021088 | 0.233998687 |
| <i>Pseudophegopteris aurita</i> | 0.015274778 | 0.0014333 | 0.046163102 | 0.062174904 | 0.002870186 | 0.026170643 | 0.119761501 | 0.218523007 |
| <i>Stegnogramma sagittifolia</i> | 0.010917477 | 0.0014348 | 0.064655907 | 0.044438817 | 0.002873232 | 0.026522873 | 0.07256113 | 0.365524531 |
| <i>Woodsia macrochaena</i> | 0.006144902 | 0 | 0 | 0.025012389 | 0 | 0.017768852 | 0.023137479 | 0.76796837 |
| <i>Woodsia polystichoides</i> | 0.010430924 | 0.0009562 | 0.045098545 | 0.042458338 | 0.001914809 | 0.006563726 | 0.109546796 | 0.059917097 |
| <i>Lygodium japonicum</i> | 0.012620766 | 0.002184 | 0.085137798 | 0.051371935 | 0.004373693 | 0.009981026 | 0.139788785 | 0.071400766 |
| <i>Lygodium microphyllum</i> | 0.015815489 | 0.0048207 | 0.149960796 | 0.064375827 | 0.00965385 | 0.033587504 | 0.154364141 | 0.217586182 |
