**Supplementary Table S1.** Species names, accession numbers and genomic fragments used for the concatenated phylogenetic analysis.

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| Species | 18S | 28S D2-D3 |
| *Aphelenchoides besseyi* | AY508035 | AY508109 |
| *Bursaphelenchus abietinus* | AY508011 | AY508074 |
| *B. abruptus* | AY508010 | AY508073 |
| *B. africanus africanus* | JF317266 | AM397024 |
| *B. africanus rossicus* | – | AM623784 |
| *B. anamurius* | – | FJ643489 |
| *B. anatolius* | AY508025 | AY508093 |
| *B. andrassyi* | KF164829 | KF164833 |
| *B. antoniae* | AM279709 | AM279710 |
| *B. arthuri* | AM397010 | AM396564 |
| *B. arthuroides* | HQ599188 | HQ599190 |
| *B. braaschae* | GQ845409 | GQ845408 |
| *B. burgermeisteri* | JF317267 | EU159109 |
| *B. carpini* | LC425133 | LC425133 |
| *B. chengi* | KT599480 | EU107359 |
| *B. clavicaudatus* | AB299221 | AB299222 |
| *B. cocophilus* | AY509153 | AY508076 |
| *B. conicaudatus* | AB067757 | AM396565 |
| *B. corneolus corneolus* | JQ765873 | JQ765871 |
| *B. corneolus taiwanensis* | HQ407406 | HQ407405 |
| *B. crenati* | KU683736 | KU683737 |
| *B. cryphali okhotskensis* | LC425131 | LC425131 |
| *B. debrae* | – | EF488813 |
| *B. decraemerae* | MF800855 | MF807220 |
| *B. doui* | AB299224 | AM396567 |
| *B. eggersi* | AY508013 | AY508078 |
| *B. eremus* | – | AM396568 |
| *B. fagi* | – | JX683686 |
| *B. firmae* | AB650015 | AB650014 |
| *B. fraudulentus* | AY508015 | AY508081 |
| *B. fuchsi* | AY508012 | AY508075 |
| *B. fungivorus* | AY508016 | AY508082 |
| *B. geraerti* | MG264562 | MG264565 |
| *B. gerberae* | AY508024 | AY508092 |
| *B. gillanii* | KJ653442 | KJ653443 |
| *B. hellenicus* | AY508017 | AY508083 |
| *B. hildegardae* | AM397013 | AM396569 |
| *B. hirsutae* | LC269966 | LC269966 |
| *B. hofmanni* | AY508018 | AY508084 |
| *B. hylobianum* | AY508019 | KT806476 |
| *B. irokophilus* | MK544843 | MK544842 |
| *B. kesiyae* | LC087116 | LC087116 |
| *B. kevini* | AY753531 | AY753532 |
| *B. kiyoharai* | AB597255 | AB597254 |
| *B. koreanus* | JX154585 | JX154584 |
| *B. laciniatae* | LC425132 | LC425132 |
| *B. leoni* | MN419334 | MH457128 |
| *B. luxuriosae* | AB097864 | AM396571 |
| *B. macromucronatus* | – | EU256382 |
| *B. masseyi* | – | JQ287495 |
| *B. mazandaranense* | JN153102 | JN153103 |
| *B. michalskii* | – | MH457128 |
| *B. moensi* | MG205600 | MF952873 |
| *B. mucronatus* | AY508023 | AM396573 |
| *B. niphades* | AB849465 | AB849475 |
| *B. obeche* | – | EU159108 |
| *B. okinawaensis* | AB358983 | AB358982 |
| *B. paraburgeri* | HQ727727 | HQ727725 |
| *B. paracorneolus* | AY508027 | AY508095 |
| *B. paraleoni* n. sp. | MT990734 | MT990736 |
| *B. paraluxuriosae* | JF966206 | JF966204 |
| *B. parantoniae* | KT223041 | KT223042 |
| *B. paraparvispicularis* | GQ421483 | GQ429010 |
| *B. parapinasteri* | KT878515 | KT878516 |
| *B. parathailandae* | JN377724 | JN377722 |
| *B. parvispicularis* | AB218829 | AB368537 |
| *B. penai* | AB901293 | AB901292 |
| *B. piceae* | KT315781 | KF772174 |
| *B. pinasteri* | AM397016 | AM396574 |
| *B. platzeri* | AY508026 | AY508094 |
| *B. poligraphi* | AY508028 | AY508096 |
| *B. populi* | HQ699855 | FJ998281 |
| *B. posterovulvus* | KF314804 | KF314807 |
| *B. pterocarpus* | MF800855 | MF807220 |
| *B. rainulfi* | AM397017 | AM396575 |
| *B. ratzeburgii* | MG264564 | MG264569 |
| *B. rockyi* | MH393459 | MH396411 |
| *B. rufipennis* | AB368529 | AB368530 |
| *B. sakishimanus* | LC027461 | LC027462 |
| *B. saudi* | KT806480 | KT806482 |
| *B. seani* | AY508029 | AY508098 |
| *B. sexdentati* | AY508031 | AY508103 |
| *B. sinensis* | AB232162 | EU752257 |
| *B. singaporensis* | AM397018 | AM396576 |
| *B. sycophilus* | AB901291 | AB901290 |
| *B. tadamiensis* | AB635399 | AB635398 |
| *B. taphrorychi* | – | MF422692 |
| *B. thailandae* | AM397019 | AM396577 |
| *B. tiliae* | – | KF736955 |
| *B. tokyoensis* | AB430445 | AB430446 |
| *B. trypophloei* | – | FJ998283 |
| *B. tusciae* | AY508033 | AY508104 |
| *B. ulmophilus* | KR011752 | KP331049 |
| *B. vallesianus* | AM397020 | AM396578 |
| *B. willibaldi* | AM397021 | AM396579 |
| *B. wuae* | AB918706 | AB918707 |
| *B. xylophilus* | AM397022 | AM396580 |
| *B. yongensis* | AM397023 | AM396581 |