**S3:** **Results of molecular species identification.** Nematodes subjected to molecular analyses and GenBank BLASTn results including the organism with the highest sequence identit. ID = identification of parasite, Organism = species of highest identity in GenBank, % Identity: Pairwise identity of query and organism, E-value = GenBank significance value, Accession = GenBank accession number.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Host** | **ID** | **Length** | **Organism** | **% Identity** |  | **E Value** | **Accession** |
| ***C. wilsoni*** | Cw\_19\_2.2b | 466 | *Contracaecum* cf. *osculatum* D | 98.50 |  | 0 | EU477207 |
| Cw\_22\_2.1 | 452 | *Contracaecum* cf. *osculatum* D | 98.90 |  | 0 | KC412223 |
| Cw\_22\_2b | 469 | *Contracaecum* cf. *osculatum* D | 98.50 |  | 0 | KC412227 |
| Cw\_21\_2 | 468 | *Contracaecum* cf. *osculatum* D | 98.70 |  | 0 | KF771354 |
| Cw\_24\_2.1 | 451 | *Contracaecum* cf. *osculatum* D | 98.70 |  | 0 | KF771354 |
| Cw\_18\_2.1 | 417 | *Contracaecum* cf. *osculatum* D | 99.00 |  | 0 | KF771361 |
| Cw\_19\_2.2a | 475 | *Contracaecum* cf. *osculatum* D | 98.70 |  | 0 | KF771361 |
| Cw\_20\_2 | 469 | *Contracaecum* cf. *osculatum* D | 99.40 |  | 0 | KF771361 |
| Cw\_23\_2.2a | 467 | *Contracaecum* cf. *osculatum* D | 98.90 |  | 0 | KT285806 |
| Cw\_14\_2.4 | 470 | *Contracaecum* cf. *osculatum* E | 99.40 |  | 0 | EU477205 |
| Cw\_23\_2.2b | 471 | *Contracaecum* cf. *osculatum* E | 98.50 |  | 0 | KF771355 |
| Cw\_14\_2c | 438 | *Contracaecum* cf. *osculatum* E | 98.90 |  | 0 | KT285805 |
| Cw\_22\_2e | 457 | *Contracaecum* cf. *osculatum* E | 99.30 |  | 0 | KT285805 |
| Cw\_23\_2 | 438 | *Contracaecum* cf. *osculatum* E | 98.90 |  | 0 | KT285809 |
| Cw\_18\_2.2 | 469 | *Contracaecum osculatum* | 99.10 |  | 0 | KF718939 |
| Cw\_19\_2.3 | 444 | *Contracaecum osculatum* | 98.50 |  | 0 | KF718939 |
| Cw\_20\_5 | 458 | *Contracaecum radiatum* | 98.30 |  | 0 | EU477210 |
| Cw\_12\_3.2 | 458 | *Contracaecum radiatum* | 99.10 |  | 0 | EU477210 |
| Cw\_20\_3.1 | 460 | *Contracaecum radiatum* | 98.90 |  | 0 | EU477210 |
| Cw\_29\_3 | 444 | *Contracaecum radiatum* | 97.70 |  | 0 | EU477210 |
| Cw\_31\_3.1 | 464 | *Contracaecum radiatum* | 97.80 |  | 0 | EU477210 |
| Cw\_32\_4 | 458 | *Contracaecum radiatum* | 98.90 |  | 0 | EU477210 |
| Cw\_4\_5 | 448 | *Contracaecum radiatum* | 98.10 |  | 0 | EU477210 |
| Cw\_12\_5.3 | 546 | *Contracaecum* sp. | 94.10 |  | 0 | KF718911 |
| Cw\_22\_3 | 415 | *Contracaecum* sp. | 93.60 |  | 1.80E-173 | KF718911 |
| Cw\_19\_5 | 451 | *Contracaecum* sp. | 93.10 |  | 0 | KF718924 |
| Cw\_20\_3 | 454 | *Parascaris equorum* | 85.10 |  | 3.21E-126 | AP017696 |
| Cw\_22\_2.1c | 541 | *Parascaris equorum* | 84.80 |  | 4.01E-150 | AP017696 |
| Cw\_22\_2c | 501 | *Parascaris equorum* | 84.20 |  | 6.85E-133 | AP017696 |
| ***C. gunnari*** | Cg\_10\_2.1 | 429 | *Contracaecum* aff. *multipapillatum* A | 86.50 |  | 8.93E-127 | EU852338 |
| Cg\_20\_2a | 429 | *Contracaecum* aff. *multipapillatum* A | 86.50 |  | 3.21E-126 | EU852338 |
| Cg\_12\_2.1 | 371 | *Contracaecum* aff. *multipapillatum* A | 86.90 |  | 1.53E-109 | EU852340 |
| Cg\_16\_2 | 469 | *Contracaecum* cf. *osculatum* D | 99.40 |  | 0 | KF771354 |
| Cg\_4\_2 | 469 | *Contracaecum* cf. *osculatum* E | 99.10 |  | 0 | KT285805 |
| Cg\_4\_2.1 | 469 | *Contracaecum* cf. *osculatum* E | 99.40 |  | 0 | KT285805 |
| Cg\_4\_2.1b | 457 | *Contracaecum* cf. *osculatum* E | 99.30 |  | 0 | KT285805 |
| Cg\_4\_2.1c | 456 | *Contracaecum* cf. *osculatum* E | 99.10 |  | 0 | KT285805 |
| Cg\_2\_2.1 | 471 | *Contracaecum osculatum* | 98.70 |  | 0 | KF718940 |
| Cg\_22\_3 | 469 | *Contracaecum radiatum* | 97.90 |  | 0 | EU477210 |
| Cg\_16\_3 | 546 | *Contracaecum* sp. | 98.50 |  | 0 | KF718906 |
| Cg\_2\_5 | 543 | *Contracaecum* sp. | 99.20 |  | 0 | KF718906 |
| Cg\_13\_3 | 542 | *Contracaecum* sp. | 99.00 |  | 0 | KF718914 |
| Cg\_25\_2 | 542 | *Contracaecum* sp. | 99.00 |  | 0 | KF718914 |
| Cg\_20\_5a | 541 | *Contracaecum* sp. | 99.00 |  | 0 | KF718924 |
| Cg\_25\_2.1 | 536 | *Contracaecum* sp. | 92.60 |  | 0 | KF718927 |
| Cg\_11\_2.1 | 524 | *Parascaris equorum* | 84.90 |  | 1.12E-145 | AP017696 |
| Cg\_15\_3 | 507 | *Parascaris equorum* | 84.70 |  | 1.46E-139 | AP017696 |
| Cg\_18\_4 | 544 | *Parascaris equorum* | 84.20 |  | 4.04E-145 | AP017696 |
| Cg\_20\_2b | 524 | *Parascaris equorum* | 84.90 |  | 1.12E-145 | AP017696 |
| Cg\_20\_2c | 541 | *Parascaris equorum* | 84.30 |  | 4.04E-145 | AP017696 |
| Cg\_20\_5b | 507 | *Parascaris equorum* | 84.20 |  | 5.30E-134 | AP017696 |
| Cg\_21\_3 | 532 | *Parascaris equorum* | 84.70 |  | 1.12E-145 | AP017696 |
| Cg\_23\_3.2a | 559 | *Parascaris equorum* | 84.80 |  | 3.98E-155 | AP017696 |
| Cg\_23\_3.2b | 530 | *Parascaris equorum* | 84.90 |  | 2.41E-147 | AP017696 |
| Cg\_23\_3.2c | 539 | *Parascaris equorum* | 84.70 |  | 5.19E-149 | AP017696 |
| Cg\_24\_3a | 545 | *Parascaris equorum* | 84.20 |  | 1.12E-145 | AP017696 |
| Cg\_24\_3b | 566 | *Parascaris equorum* | 84.50 |  | 1.43E-154 | AP017696 |
| Cg\_8\_5 | 515 | *Parascaris equorum* | 84.50 |  | 1.46E-139 | AP017696 |
| ***N. ionah*** | Ni\_3\_2a | 435 | *Contracaecum* cf. *osculatum* D | 98.90 |  | 0 | KF771361 |
| Ni\_3\_2b | 436 | *Contracaecum* cf. *osculatum* D | 98.90 |  | 0 | KF771361 |
| Ni\_2\_2 | 468 | *Contracaecum* cf. *osculatum* D | 98.70 |  | 0 | KT285808 |
| Ni\_1\_2.1 | 468 | *Contracaecum* cf. *osculatum* E | 99.50 |  | 0 | KF771355 |
| Ni\_1\_2 | 456 | *Contracaecum* cf. *osculatum* E | 98.70 |  | 0 | KT285809 |
| Ni\_2\_3 | 468 | *Contracaecum radiatum* | 98.70 |  | 0 | EU477210 |
| ***P. macropterus*** | Pm\_3\_2.1g | 421 | *Contracaecum* cf. *osculatum* D | 98.80 |  | 0 | KC412223 |
| Pm\_4\_9.2a | 460 | *Contracaecum* cf. *osculatum* D | 99.10 |  | 0 | KC412223 |
| Pm\_1\_2b | 459 | *Contracaecum* cf. *osculatum* D | 98.70 |  | 0 | KC412227 |
| Pm\_4\_2n | 446 | *Contracaecum* cf. *osculatum* D | 98.70 |  | 0 | KF771354 |
| Pm\_3\_2.1f | 445 | *Contracaecum* cf. *osculatum* D | 98.20 |  | 0 | KF771356 |
| Pm\_1\_2a | 452 | *Contracaecum* cf. *osculatum* D | 98.90 |  | 0 | KF771361 |
| Pm\_2\_2 | 458 | *Contracaecum* cf. *osculatum* D | 98.70 |  | 0 | KF771361 |
| Pm\_3\_2.1d | 441 | *Contracaecum* cf. *osculatum* D | 99.50 |  | 0 | KF771361 |
| Pm\_4\_2a | 448 | *Contracaecum* cf. *osculatum* D | 98.90 |  | 0 | KF771361 |
| Pm\_4\_2e | 448 | *Contracaecum* cf. *osculatum* D | 99.30 |  | 0 | KF771361 |
| Pm\_4\_2c | 463 | *Contracaecum* cf. *osculatum* D | 99.40 |  | 0 | KT285804 |
| Pm\_4\_2b | 459 | *Contracaecum* cf. *osculatum* E | 98.90 |  | 0 | EU477205 |
| Pm\_3\_2.1b | 465 | *Contracaecum* cf. *osculatum* E | 99.60 |  | 0 | KC412229 |
| Pm\_4\_2j | 457 | *Contracaecum* cf. *osculatum* E | 98.70 |  | 0 | KF771355 |
| Pm\_4\_2k | 457 | *Contracaecum* cf. *osculatum* E | 98.70 |  | 0 | KF771355 |
| Pm\_1\_2c | 469 | *Contracaecum* cf. *osculatum* E | 99.40 |  | 0 | KT285805 |
| Pm\_3\_2.1e | 465 | *Contracaecum* cf. *osculatum* E | 99.10 |  | 0 | KT285805 |
| Pm\_3\_9 | 459 | *Contracaecum* cf. *osculatum* E | 99.10 |  | 0 | KT285805 |
| Pm\_4\_2d | 458 | *Contracaecum* cf. *osculatum* E | 97.40 |  | 0 | KT285805 |
| Pm\_4\_2g | 433 | *Contracaecum* cf. *osculatum* E | 99.10 |  | 0 | KT285805 |
| Pm\_4\_2h | 467 | *Contracaecum* cf. *osculatum* E | 98.90 |  | 0 | KT285805 |
| Pm\_4\_2i | 457 | *Contracaecum* cf. *osculatum* E | 98.70 |  | 0 | KT285805 |
| Pm\_4\_2m | 457 | *Contracaecum* cf. *osculatum* E | 98.90 |  | 0 | KT285805 |
| Pm\_3\_2.1c | 433 | *Contracaecum* cf. *osculatum* E | 99.10 |  | 0 | KT285809 |
| Pm\_4\_2l | 438 | *Contracaecum* cf. *osculatum* E | 98.90 |  | 0 | KT285809 |
| Pm\_2\_4 | 454 | *Contracaecum osculatum* | 98.90 |  | 0 | KF718939 |
| Pm\_4\_1 | 467 | *Contracaecum osculatum* | 98.70 |  | 0 | KF718940 |
| Pm\_4\_9.2b | 419 | *Contracaecum radiatum* | 97.90 |  | 0 | EU477210 |
| Pm\_3\_2.1a | 532 | *Contracaecum* sp. | 94.20 |  | 0 | KF718925 |
| ***P. georgianus*** | Pg\_15\_2.7 | 471 | *Contracaecum* cf. *osculatum* D | 99.40 |  | 0 | KC412223 |
| Pg\_1\_2.1b | 473 | *Contracaecum* cf. *osculatum* D | 99.20 |  | 0 | KF771354 |
| Pg\_12\_2.2 | 468 | *Contracaecum* cf. *osculatum* D | 98.50 |  | 0 | KF771356 |
| Pg\_8\_2 | 468 | *Contracaecum* cf. *osculatum* D | 98.10 |  | 0 | KF771356 |
| Pg\_10\_2.6a | 471 | *Contracaecum* cf. *osculatum* D | 98.90 |  | 0 | KF771361 |
| Pg\_10\_9.1 | 460 | *Contracaecum* cf. *osculatum* D | 98.60 |  | 0 | KF771361 |
| Pg\_11\_4.2c | 456 | *Contracaecum* cf. *osculatum* D | 98.90 |  | 0 | KF771361 |
| Pg\_1\_2.1a | 458 | *Contracaecum* cf. *osculatum* E | 98.70 |  | 0 | KT285805 |
| Pg\_2\_4.1 | 464 | *Contracaecum* cf. *osculatum* E | 99.40 |  | 0 | KT285805 |
| Pg\_3\_2.1 | 460 | *Contracaecum* cf. *osculatum* E | 99.60 |  | 0 | KT285809 |
| Pg\_15\_2.8 | 464 | *Contracaecum osculatum* | 98.90 |  | 0 | KF718939 |
| Pg\_5\_2.1 | 471 | *Contracaecum osculatum* | 98.70 |  | 0 | KF718939 |
| Pg\_7\_2 | 469 | *Contracaecum osculatum* | 98.50 |  | 0 | KF718939 |
| Pg\_10\_2.3b | 466 | *Contracaecum radiatum* | 97.90 |  | 0 | EU477210 |
| Pg\_11\_1.1 | 452 | *Contracaecum radiatum* | 98.70 |  | 0 | EU477210 |
| Pg\_2\_3.1 | 466 | *Contracaecum radiatum* | 97.60 |  | 0 | EU477210 |
| Pg\_9\_2.2a | 458 | *Contracaecum radiatum* | 97.70 |  | 0 | EU477210 |
| Pg\_10\_5 | 534 | *Contracaecum* sp. | 93.50 |  | 0 | KF718907 |
| Pg\_8\_3.1 | 537 | *Contracaecum* sp*.* | 98.90 |  | 0 | KF718911 |
| Pg\_9\_3 | 554 | *Contracaecum* sp. | 93.00 |  | 0 | KF718911 |
| Pg\_3\_5.1 | 542 | *Contracaecum* sp. | 93.20 |  | 0 | KF718912 |
| Pg\_6\_3.2 | 534 | *Contracaecum* sp. | 92.70 |  | 0 | KF718920 |
| Pg\_11\_1 | 488 | *Contracaecum* sp. | 92.60 |  | 0 | KF718928 |
| Pg\_11\_4b | 470 | *Pseudoterranova* sp. | 97.30 |  | 0 | KF718941 |