**Figure 2-source data 1. Nematode taxa used in this study, with isolation details given.** Origins of strains are coded as follows: CGC, Caenorhabditis Genetics Center; JB, Baldwin lab (U. California, Riverside); MV, Viney lab (U. Bristol); NK, Kanzaki lab; RGD, Giblin-Davis lab (U. Florida-IFAS); RS, Sommer lab; SB, Sudhaus lab (Freie Universität Berlin). For other strains, references are given. nc, not culturable.

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| --- | --- | --- | --- | --- |
| Nematode species | Strain | Isolation source | Location | Origin |
| Diplogastridae | | | | |
| *Acrostichus* cf. *nudicapitatus* | RS5083 | Soil | Breitenholz, Germany | RS |
| *Acrostichus halicti* | JB120 | *Halictus ligatus* | Davis, CA, USA | JB |
| *Acrostichus rhynchophori* | RGD193 | *Rhynchophorus cruentatus* | Florida, USA | RGD |
| *Allodiplogaster hylobii* | RS5529 | *Hylobius abietis* | Tübingen, Germany | RS |
| *Allodiplogaster* sp. 1 | RS1982 | *Melolontha melolontha* | Usedom, Germany | RS |
| *Allodiplogaster sudhausi* | SB413 | Soil | Israel | SB |
| *Butlerius* sp. | nc | Frass from passalid beetle | New Caledonia | RS |
| *Diplogasteriana* n. sp. | RS9000 | *Nosodendron unicolor* | Nebraska, USA | RS |
| *Diplogasteriana schneideri* | RS5440 | *Nosodendron fasciculare* | Stuttgart, Germany | RS |
| *Diplogasteroides magnus* | RS1983 | *Melolontha melolontha* | Tübingen, Germany | RS |
| *Diplogasteroides* sp. | RS5444 | *Holotrichia* sp. | Kobe, Japan | RS |
| *Diplogastrellus gracilis* | SB306 | - | Sweden | SB |
| *Diplogastrellus* sp. | RS5608 | Frass from *Leptaulax* sp. | Christmas Island | RS |
| *Eudiplogasterium levidentum* | nc | Cow dung | Tübingen, Germany | RS |
| *Fictor* sp. 1 | RS9001 | *Trox* sp. | Cambodia | RS |
| *Fictor* sp. 2 | RS9002 | *Trox* sp. | Arizona, USA | RS |
| *Fictor stercorarius* | RS9003 | Dung beetle | Tübingen, Germany | RS |
| *Fuchsnema halleri* | RS5531 | *Ips typographus* | Tübingen, Germany | RS |
| *Fuchsnema* sp. | RS5537 | *Gnathotrichus materiarius* | Tübingen, Germany | RS |
| *Koerneria luziae* | RS5613 | Frass from *Dorcus ritsemae* | Indonesia | RS/NK |
| *Koerneria* sp. | RS9004 | Frass from *Dorcus rectus* | Tsukuba, Japan | RS/NK |
| *Leptojacobus dorci* | RS9005 | Frass from *Dorcus ritsemae* | Indonesia | RS/NK |
| *Levipalatum texanum* | RS5280 | *Cyclocephala* sp. | Texas, USA | RS |
| *Mehdinema alii* | nc | *Gryllodes sigillatus* | Riverside, CA, USA | RS |
| *Micoletzkya buetschlii* | RS9006 | *Ips typographus* | Tübingen, Germany | RS |
| *Micoletzkya inedia* | RS5605 | *Dendroctonus ponderosae* | Arizona, USA | RS |
| *Micoletzkya japonica* | RS5524 | *Dryocoetes uniseriatus* | Kasumigaura, Japan | RS |
| *Micoletzkya* sp. | RS5562 | *Dryocoetes autographus* | Tübingen, Germany | RS |
| *Mononchoides* sp. 1 | RS5441 | *Geotrupes* sp. | Corsica, France | RS |
| *Mononchoides* sp. 2 | RS9007 | Scarabaeidae sp. | Mexico | RS |
| *Mononchoides* sp. 3 | RS9008 | - | New Caledonia | RS |
| *Neodiplogaster crenatae* | nc | *Scolytoplatypus daimio* | Shirakami, Japan | (1) |
| *Neodiplogaster* sp. | RS9009 | Lucanidae sp. | Sulawesi | RS |
| *Oigolaimella attenuata* | SB353 | *Reticulitermes lucifugus* | Corsica, France | SB |
| *Oigolaimella* sp. | RS9010 | *Reticulitermes speratus* | Kagoshima, Japan | RS/NK |
| *Parapristionchus giblindavisi* | RS5555 | *Dorcus rubrofemoratus* | Japan | RS |
| *Parasitodiplogaster maxinema* | nc | Syconium, *Ficus maxima* | Panama | (2) |
| *Paroigolaimella micura* | nc | Cow dung | Tübingen, Germany | RS |
| *Paroigolaimella stresemanni* | nc | Cow dung | Tübingen, Germany | RS |
| *Pristionchus elegans* | RS5229 | *Phleotrupes auratus* | Japan | RS |
| *Pristionchus fissidentatus* | RS5133 | Soil | Nepal | RS |
| *Pristionchus maupasi* | RS0143 | *Melolontha melolontha* | Tübingen, Germany | RS |
| *Pristionchus pacificus* | PS312 | Soil | Pasadena, CA, USA | RS |
| *Pristionchus uniformis* | RS0141 | *Melolontha melolontha* | Menz, Germany | RS |
| *Pseudodiplogasteroides* sp. | SB257 | Rotten cacti | Arizona, USA | SB |
| *Rhabditidoides* sp. | RS5443 | *Geotrupes* sp. | Tübingen, Germany | RS |
| *Rhabditolaimus* sp. 1 | RSA134 | *Euplatypus parallelus* | La Réunion Island | RS |
| *Rhabditolaimus* sp. 2 | RS5442 | Prioninaesp*.* | Ghana | RS |
| *Sachsia zurstrasseni* | nc | Cow dung | Tübingen, Germany | RS |
| *Sudhausia aristotokia* | RS9011 | *Onthophagus* sp. | Ghana | RS |
| *Sudhausia crassa* | RS9012 | *Onthophagus* sp. | Pretoria, South Africa | RS |
| *Teratodiplogaster* sp. 1 | nc | Syconium, *Ficus variegata* | Okinawa, Japan | RS/NK |
| *Teratodiplogaster* sp. 2 | nc | Syconium, *Ficus* sp. | Vietnam | RS |
| *Tylopharynx foetida* | nc | *Geotrupes* sp. | Corsica | RS |
| Non-diplogastrid Rhabditina and outgroups | | | | |
| *Brevibucca saprophaga* | SB261 | - | - | (3) |
| *Bunonema reticulatum* | RS9013 | Moss | Tübingen, Germany | RS |
| *Bunonema* sp. | RS9014 | - | New Caledonia | RS |
| *Caenorhabditis angaria* | PS1010 | *Metamasius hemipterus* | Florida, USA | (4) |
| *Caenorhabditis briggsae* | AF16 | Soil | Ahmedabad, India | CGC |
| *Caenorhabditis elegans* | N2 | Mushroom compost | Bristol, UK | CGC |
| *Choriorhabditis cristata* | RS5618 | Basidiomycota mushroom | Tübingen, Germany | RS |
| *Cruznema tripartitum* | - | Soil | Campillo de Arenas, Spain | (5) |
| *Diploscapter* sp. | RS1965 | Compost | Tübingen, Germany | RS |
| *Distolabrellus veechi* | - | Decaying organic substrate | India | (6) |
| *Heterorhabditis bacteriophora* | - | *Heliothis punctigera* | South Australia | CGC |
| *Mesorhabditis acidophila* | - | Snottites | Tabasco, Mexico | (7) |
| *Myolaimus byersi* | RGD233 | *Hyophorbe verschaffeltii* | Florida, USA | (8) |
| *Odontopharynx longicaudata* | - | Soil | Netherlands | (9) |
| *Oscheius carolinensis* | - | Vermicompost | North Carolina, USA | (10) |
| *Oscheius guentheri* | - | Decaying rice plants | Hau Giang, Vietnam | (11) |
| *Oscheius myriophila* | RS1964 | Soil | Oahu, HI, USA | RS |
| *Oscheius tipulae* | RS1990 | - | Bogota, Colombia | RS |
| *Panagrellus redivivus* | PS1163 | - | Harpenden, UK | CGC |
| *Parasitorhabditis obtusa* | RS5586 | *Ips typographus* | Tübingen, Germany | RS |
| *Pelodera cylindrica* | RS5097 | *Geotrupes* sp. | Tübingen, Germany | RS |
| *Pelodera strongyloides* | DF5022 | Cow skin | Illinois, USA | CGC |
| *Pelodera teres* | - | Manure | Kashmir, India | (12) |
| *Pellioditis* sp. | RS5624 | Basidiomycota mushroom | Tübingen, Germany | RS |
| *Poikilolaimus floridensis* | RGD617R | *Neotermes jouteli* | Florida, USA | (13) |
| *Poikilolaimus oxycercus* | SB200 | Compost | Belgium | SB |
| *Protorhabditis* sp. | RS9015 | Frass from *Dorcus rectus* | Tsukuba, Japan | RS |
| *Rhabditis brassicae* | RS5617 | Basidiomycota mushroom | Tübingen, Germany | RS |
| *Rhabditis colombiana* | - | *Cyrtomenus bergi* | Cauca Valley, Colombia | (14) |
| *Rhabditis rainai* | - | *Coptotermes formosanus* | Louisiana, USA | (15) |
| *Rhabditoides inermis* | SB328 | - | - | SB |
| *Strongyloides ratti* | ED321 | *Rattus norvegicus* | Philadelphia, USA | MV |
| *Teratorhabditis mariannae* | RS0136 | - | Tübingen, Germany | RS |
| *Teratorhabditis palmarum* | - | *Rhynchophorus palmarum* | Trinidad | (16) |
| *Teratorhabditis synpapillata* | - | *Rhynchophorus ferrugineus* | Kagoshima, Japan | (17) |
| *Zeldia punctata* | JB15 | Soil | Riverside, CA, USA | JB |

**Supplementary references for Figure 2-source data 1:**

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