Journal of Helminthology

*Fasciola hepatica* in Brazil: genetic diversity provides insights of its origin and geographic dispersion

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Table S1. *Fasciola hepatica* samples with their respective geographic, haplotypic and GenBank accession numbers.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| State | N | City | Number of the sample | Haplotype of COI | Haplotype of nad1 | Genbank COI | Genbank  nad1 |
| Rio Grande do Sul |  | Arroio Grande | 1 | COI\_1 | NAD\_1 | MK838613 | MK838688 |
|  | Arroio Grande | 2 | COI\_1 | NAD\_1 | MK838614 | MK838689 |
|  | Arroio Grande | 3 | COI\_1 | NAD\_1 | MK838615 | MK838690 |
|  | Arroio Grande | 4 | COI\_1 | NAD\_1 | MK838616 | MK838691 |
|  | Arroio Grande | 5 | COI\_2 | NAD\_1 | MK838617 | MK838692 |
|  | Arroio Grande | 6 | COI\_9 | NAD\_2 | MK838618 | MK838693 |
|  | Arroio Grande | 7 | COI\_1 | NAD\_3 | MK838619 | MK838694 |
|  | Arroio Grande | 9 | COI\_1 | NAD\_4 | MK838620 | MK838695 |
|  | Arroio Grande | 10 | COI\_2 | NAD\_5 | MK838621 | MK838696 |
|  | Camaquã | 138 | COI\_3 |  | MK838622 |  |
|  | Camaquã | 139 | COI\_1 | NAD\_6 | MK838623 | MK838697 |
|  | Camaquã | 141 |  | NAD\_7 |  | MK838698 |
|  | Camaquã | 142 | COI\_1 | NAD\_7 | MK838624 | MK838699 |
|  | Camaquã | 145 | COI\_2 |  | MK838625 |  |
|  | Camaquã | 146 | COI\_1 | NAD\_7 | MK838626 | MK838700 |
|  | Canguçu | 22 | COI\_6 | NAD\_8 | MK838627 | MK838701 |
|  | Canguçu | 23 | COI\_6 |  | MK838628 |  |
|  | Canguçu | 24 |  | NAD\_1 |  | MK838702 |
|  | Santa Vitória do Palmar | 177 | COI\_4 | NAD\_1 | MK838629 | MK838749 |
|  | Santa Vitória do Palmar | 178 | COI\_1 | NAD\_7 | MK838630 | MK838750 |
|  | Santa Vitória do Palmar | 179 | COI\_1 | NAD\_7 | MK838631 | MK838751 |
|  | Santa Vitória do Palmar | 180 | COI\_1 | NAD\_7 | MK838632 | MK838752 |
|  | Santa Vitória do Palmar | 181 | COI\_1 | NAD\_7 | MK838633 | MK838753 |
|  | Santa Vitória do Palmar | 182 | COI\_1 | NAD\_7 | MK838634 | MK838754 |
|  | Pejuçara | 195 | COI\_1 | NAD\_1 | MK838635 | MK838733 |
|  | Pejuçara | 196 | COI\_1 |  | MK838636 |  |
|  | Pejuçara | 197 | COI\_1 | NAD\_1 | MK838637 | MK838734 |
|  | Pejuçara | 199 | COI\_1 | NAD\_1 | MK838638 | MK838735 |
|  | Pejuçara | 200 | COI\_1 | NAD\_1 | MK838639 | MK838736 |
|  | Pejuçara | 201 | COI\_1 | NAD\_1 | MK838640 | MK838737 |
|  | São Borja | 202 | COI\_1 | NAD\_1 | MK838641 | MK838757 |
|  | São Borja | 203 | COI\_5 | NAD\_24 | MK838642 | MK838758 |
|  | São Borja | 204 | COI\_1 | NAD\_1 | MK838643 | MK838759 |
|  | São Borja | 205 | COI\_1 | NAD\_1 | MK838644 | MK838760 |
|  | São Borja | 213 | COI\_1 | NAD\_1 | MK838645 | MK838761 |
|  | São Borja | 220 | COI\_5 |  | MK838646 |  |
|  | São Borja | 221 | COI\_1 | NAD\_1 | MK838647 | MK838762 |
|  | São Borja | 223 | COI\_1 | NAD\_1 | MK838648 | MK838763 |
|  | São Borja | 259 | COI\_1 |  | MK838659 |  |
|  | São Borja | 260 | COI\_1 | NAD\_1 | MK838660 | MK838764 |
|  | São Borja | 261 | COI\_1 | NAD\_1 | MK838661 | MK838765 |
|  | São Borja | 262 | COI\_5 | NAD\_24 | MK838662 | MK838766 |
|  | Palmeira das Missões | 229 | COI\_1 |  | MK838649 |  |
|  | Palmeira das Missões | 230 | COI\_1 | NAD\_1 | MK838650 | MK838727 |
|  | Palmeira das Missões | 231 | COI\_1 | NAD\_1 | MK838651 | MK838728 |
|  | Palmeira das Missões | 232 | COI\_1 | NAD\_1 | MK838652 | MK838729 |
|  | Palmeira das Missões | 233 | COI\_1 | NAD\_1 | MK838653 | MK838730 |
|  | Palmeira das Missões | 234 | COI\_1 | NAD\_1 | MK838654 | MK838731 |
|  | Palmeira das Missões | 235 | COI\_1 | NAD\_18 | MK838655 | MK838732 |
|  | Santa Barbara do Sul | 249 | COI\_1 | NAD\_20 | MK838656 | MK838743 |
|  | Santa Barbara do Sul | 250 |  | NAD\_1 |  | MK838744 |
|  | Santa Barbara do Sul | 251 |  | NAD\_7 |  | MK838745 |
|  | Santa Barbara do Sul | 252 |  | NAD\_7 |  | MK838746 |
|  | Santa Barbara do Sul | 253 | COI\_1 | NAD\_21 | MK838657 | MK838747 |
|  | Santa Barbara do Sul | 254 | COI\_1 | NAD\_22 | MK838658 | MK838748 |
|  | Ijuí | 278 | COI\_1 | NAD\_16 | MK838663 | MK838715 |
|  | Júlio de Castilhos | 285 | COI\_1 | NAD\_7 | MK838664 | MK838716 |
|  | Júlio de Castilhos | 288 | COI\_1 |  | MK838665 |  |
|  | Júlio de Castilhos | 289 | COI\_1 |  | MK838666 |  |
|  | Júlio de Castilhos | 290 | COI\_1 | NAD\_17 | MK838667 | MK838717 |
|  | Júlio de Castilhos | 291 | COI\_1 | NAD\_1 | MK838668 | MK838718 |
|  | Júlio de Castilhos | 292 | COI\_5 | NAD\_1 | MK838669 | MK838719 |
|  | Júlio de Castilhos | 293 | COI\_1 | NAD\_7 | MK838670 | MK838720 |
|  | Herval | 314 |  | NAD\_10 |  | MK838707 |
|  | Herval | 316 |  | NAD\_11 |  | MK838708 |
|  | Herval | 317 |  | NAD\_12 |  | MK838709 |
|  | Herval | 318 |  | NAD\_13 |  | MK838710 |
|  | Herval | 319 | COI\_1 | NAD\_14 | MK838678 | MK838711 |
|  | Herval | 320 |  | NAD\_15 |  | MK838712 |
|  | Herval | 321 |  | NAD\_13 |  | MK838713 |
|  | Herval | 322 |  | NAD\_7 |  | MK838714 |
|  | Santo Cristo | 358 | COI\_1 | NAD\_1 | MK838681 | MK838755 |
|  | Santo Cristo | 359 | COI\_1 | NAD\_23 | MK838682 | MK838756 |
|  | Santo Cristo | 360 | COI\_5 |  | MK838683 |  |
|  | Santo Cristo | 361 | COI\_1 |  | MK838684 |  |
|  | Pelotas | 71 | COI\_10 | NAD\_7 | MK838685 | MK838738 |
|  | Pelotas | 73 |  | NAD\_19 |  | MK838739 |
|  | Pelotas | 77 | COI\_1 | NAD\_7 | MK838686 | MK838740 |
|  | Pelotas | 78 | COI\_1 | NAD\_1 | MK838687 | MK838741 |
|  |  | Pelotas | 93 |  | NAD\_1 |  | MK838742 |
| Paraná |  | Curitiba | 297 | COI\_7 | NAD\_9 | MK838671 | MK838703 |
|  | Curitiba | 298 | COI\_7 | NAD\_7 | MK838672 | MK838704 |
|  | Curitiba | 299 | COI\_6 |  | MK838673 |  |
|  | Curitiba | 300 | COI\_7 | NAD\_7 | MK838674 | MK838705 |
|  | Curitiba | 332 | COI\_1 |  | MK838679 |  |
|  | Curitiba | 344 | COI\_1 | NAD\_1 | MK838680 | MK838706 |
|  | Nova Prata do Iguaçu | 301 | COI\_7 | NAD\_7 | MK838675 | MK838721 |
|  | Nova Prata do Iguaçu | 302 |  | NAD\_7 |  | MK838722 |
|  | Nova Prata do Iguaçu | 303 | COI\_7 | NAD\_7 | MK838676 | MK838723 |
|  | Nova Prata do Iguaçu | 304 | COI\_8 | NAD\_7 | MK838677 | MK838724 |
|  | Nova Prata do Iguaçu | 305 |  | NAD\_7 |  | MK838725 |
|  | Nova Prata do Iguaçu | 306 |  | NAD\_7 |  | MK838726 |

Table S2. Sequences of *Fasciola hepatica* for *COI* gene provided GenBank for network analysis.

|  |  |  |  |
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|  | Number of access | Country | Gene |
|  | AB207103.1 | Australia | *COI* |
|  | LC273025.1 | Ecuador | *COI* |
|  | LC273026.1 | Ecuador | *COI* |
|  | LC273027.1 | Ecuador | *COI* |
|  | LC273028.1 | Ecuador | *COI* |
|  | LC273029.1 | Ecuador | *COI* |
|  | LC273030.1 | Ecuador | *COI* |
|  | LC273031.1 | Ecuador | *COI* |
|  | LC273032.1 | Ecuador | *COI* |
|  | LC273033.1 | Ecuador | *COI* |
|  | LC273034.1 | Ecuador | *COI* |
|  | LC273035.1 | Ecuador | *COI* |
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|  | LC273038.1 | Ecuador | *COI* |
|  | LC273039.1 | Ecuador | *COI* |
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|  | MG987190.1 | Iran | *COI* |
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|  | KR422387.1 | Poland | *COI* |
|  | KR422388.1 | United Kingdom | *COI* |
|  | AB207170.1 | Uruguay | *COI* |

Table S3. Sequences of *Fasciola hepatica* for *nad1* gene provided GenBank for network analysis.

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|  | Number of access | Country | Gene |
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|  | LC436793.1 | Afghanistan | *nad1* |
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|  | LC436801.1 | Afghanistan | *nad1* |
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|  | MF959499.1 | Argentina | *nad1* |
|  | AB207155.1 | Australia | *nad1* |
|  | AF216697.1 | Australia | *nad1* |
|  | MF287675.1 | Brazil | *nad1* |
|  | AB477357.1 | China | *nad1* |
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|  | AB604930.1 | China | *nad1* |
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|  | LC273150.1 | Ecuador | *nad1* |
|  | LC273151.1 | Ecuador | *nad1* |
|  | LC273152.1 | Ecuador | *nad1* |
|  | LC273153.1 | Ecuador | *nad1* |
|  | LC273154.1 | Ecuador | *nad1* |
|  | LC273155.1 | Ecuador | *nad1* |
|  | LC273156.1 | Ecuador | *nad1* |
|  | LC273157.1 | Ecuador | *nad1* |
|  | LC273158.1 | Ecuador | *nad1* |
|  | LC273159.1 | Ecuador | *nad1* |
|  | LC273160.1 | Ecuador | *nad1* |
|  | LC273161.1 | Ecuador | *nad1* |
|  | LC273162.1 | Ecuador | *nad1* |
|  | LC273163.1 | Ecuador | *nad1* |
|  | LC273164.1 | Ecuador | *nad1* |
|  | LC273165.1 | Ecuador | *nad1* |
|  | LC273166.1 | Ecuador | *nad1* |
|  | LC273167.1 | Ecuador | *nad1* |
|  | LC273168.1 | Ecuador | *nad1* |
|  | LC273169.1 | Ecuador | *nad1* |
|  | LC273170.1 | Ecuador | *nad1* |
|  | LC273171.1 | Ecuador | *nad1* |
|  | LC273172.1 | Ecuador | *nad1* |
|  | LC273173.1 | Ecuador | *nad1* |
|  | LC273174.1 | Ecuador | *nad1* |
|  | LC273176.1 | Ecuador | *nad1* |
|  | LC273177.1 | Ecuador | *nad1* |
|  | LC273178.1 | Ecuador | *nad1* |
|  | LC273179.1 | Ecuador | *nad1* |
|  | LC273180.1 | Ecuador | *nad1* |
|  | LC273181.1 | Ecuador | *nad1* |
|  | LC273182.1 | Ecuador | *nad1* |
|  | LC273183.1 | Ecuador | *nad1* |
|  | LC273184.1 | Ecuador | *nad1* |
|  | LC273185.1 | Ecuador | *nad1* |
|  | LC273186.1 | Ecuador | *nad1* |
|  | LC273187.1 | Ecuador | *nad1* |
|  | LC273188.1 | Ecuador | *nad1* |
|  | LC273189.1 | Ecuador | *nad1* |
|  | LC273190.1 | Ecuador | *nad1* |
|  | LC273191.1 | Ecuador | *nad1* |
|  | LC273192.1 | Ecuador | *nad1* |
|  | LC273193.1 | Ecuador | *nad1* |
|  | LC273194.1 | Ecuador | *nad1* |
|  | LC273195.1 | Ecuador | *nad1* |
|  | LC273196.1 | Ecuador | *nad1* |
|  | LC273197.1 | Ecuador | *nad1* |
|  | LC273198.1 | Ecuador | *nad1* |
|  | LC273199.1 | Ecuador | *nad1* |
|  | LC273200.1 | Ecuador | *nad1* |
|  | LC273201.1 | Ecuador | *nad1* |
|  | LC273202.1 | Ecuador | *nad1* |
|  | AB554177.1 | Egypt | *nad1* |
|  | AB554178.1 | Egypt | *nad1* |
|  | AB554179.1 | Egypt | *nad1* |
|  | AB554180.1 | Egypt | *nad1* |
|  | AB554181.1 | Egypt | *nad1* |
|  | AB554182.1 | Egypt | *nad1* |
|  | AB554183.1 | Egypt | *nad1* |
|  | AB554184.1 | Egypt | *nad1* |
|  | AB554185.1 | Egypt | *nad1* |
|  | AB554186.1 | Egypt | *nad1* |
|  | AB554187.1 | Egypt | *nad1* |
|  | AB554188.1 | Egypt | *nad1* |
|  | AB554189.1 | Egypt | *nad1* |
|  | AB554190.1 | Egypt | *nad1* |
|  | AB554191.1 | Egypt | *nad1* |
|  | AB554192.1 | Egypt | *nad1* |
|  | AB554193.1 | Egypt | *nad1* |
|  | LC076248.1 | Egypt | *nad1* |
|  | LC076249.1 | Egypt | *nad1* |
|  | LC076250.1 | Egypt | *nad1* |
|  | LC076251.1 | Egypt | *nad1* |
|  | LC076252.1 | Egypt | *nad1* |
|  | LC076253.1 | Egypt | *nad1* |
|  | LC076254.1 | Egypt | *nad1* |
|  | LC076255.1 | Egypt | *nad1* |
|  | LC076256.1 | Egypt | *nad1* |
|  | LC076257.1 | Egypt | *nad1* |
|  | LC076258.1 | Egypt | *nad1* |
|  | LC076259.1 | Egypt | *nad1* |
|  | LC076260.1 | Egypt | *nad1* |
|  | LC076261.1 | Egypt | *nad1* |
|  | GQ175362.1 | Iran | *nad1* |
|  | GQ175363.1 | Iran | *nad1* |
|  | GQ175364.1 | Iran | *nad1* |
|  | GQ356033.1 | Iran | *nad1* |
|  | KF992222.1 | Iran | *nad1* |
|  | KF992223.1 | Iran | *nad1* |
|  | KF992224.1 | Iran | *nad1* |
|  | KF992225.1 | Iran | *nad1* |
|  | KF992226.1 | Iran | *nad1* |
|  | KT893726.1 | Iran | *nad1* |
|  | KT893727.1 | Iran | *nad1* |
|  | KT893728.1 | Iran | *nad1* |
|  | KT893729.1 | Iran | *nad1* |
|  | KT893730.1 | Iran | *nad1* |
|  | KT893731.1 | Iran | *nad1* |
|  | KT893732.1 | Iran | *nad1* |
|  | KT893733.1 | Iran | *nad1* |
|  | KT893734.1 | Iran | *nad1* |
|  | KT893735.1 | Iran | *nad1* |
|  | KT893736.1 | Iran | *nad1* |
|  | KT893737.1 | Iran | *nad1* |
|  | KT893738.1 | Iran | *nad1* |
|  | KT893739.1 | Iran | *nad1* |
|  | KT893740.1 | Iran | *nad1* |
|  | KT893741.1 | Iran | *nad1* |
|  | KT893742.1 | Iran | *nad1* |
|  | KT893743.1 | Iran | *nad1* |
|  | KT893744.1 | Iran | *nad1* |
|  | KX712321.1 | Iran | *nad1* |
|  | KX712322.1 | Iran | *nad1* |
|  | MF428470.1 | Iran | *nad1* |
|  | MF428471.1 | Iran | *nad1* |
|  | MF428473.1 | Iran | *nad1* |
|  | MF428475.1 | Iran | *nad1* |
|  | MF428476.1 | Iran | *nad1* |
|  | MF428477.1 | Iran | *nad1* |
|  | MF628261.1 | Iran | *nad1* |
|  | MF628262.1 | Iran | *nad1* |
|  | MF628263.1 | Iran | *nad1* |
|  | MF628264.1 | Iran | *nad1* |
|  | MF628265.1 | Iran | *nad1* |
|  | MF628266.1 | Iran | *nad1* |
|  | MF628267.1 | Iran | *nad1* |
|  | MF628268.1 | Iran | *nad1* |
|  | MG926383.1 | Iran | *nad1* |
|  | MG926384.1 | Iran | *nad1* |
|  | MG926385.1 | Iran | *nad1* |
|  | MG926386.1 | Iran | *nad1* |
|  | MG926387.1 | Iran | *nad1* |
|  | MG926388.1 | Iran | *nad1* |
|  | MG926389.1 | Iran | *nad1* |
|  | MG926390.1 | Iran | *nad1* |
|  | MG926391.1 | Iran | *nad1* |
|  | MG926392.1 | Iran | *nad1* |
|  | AB207156.1 | Ireland | *nad1* |
|  | JF824675.1 | Italy | *nad1* |
|  | JF824676.1 | Italy | *nad1* |
|  | JF824677.1 | Italy | *nad1* |
|  | JF824678.1 | Italy | *nad1* |
|  | JF824679.1 | Italy | *nad1* |
|  | KJ716895.1 | Peru | *nad1* |
|  | KJ716896.1 | Peru | *nad1* |
|  | KJ716897.1 | Peru | *nad1* |
|  | KJ716898.1 | Peru | *nad1* |
|  | KJ716899.1 | Peru | *nad1* |
|  | KJ716900.1 | Peru | *nad1* |
|  | KJ716901.1 | Peru | *nad1* |
|  | KJ716902.1 | Peru | *nad1* |
|  | KJ716903.1 | Peru | *nad1* |
|  | KJ716904.1 | Peru | *nad1* |
|  | KJ716905.1 | Peru | *nad1* |
|  | KJ716906.1 | Peru | *nad1* |
|  | KJ716907.1 | Peru | *nad1* |
|  | KJ716908.1 | Peru | *nad1* |
|  | KJ716909.1 | Peru | *nad1* |
|  | KJ852771.1 | Peru | *nad1* |
|  | LC070666.1 | Peru | *nad1* |
|  | LC070667.1 | Peru | *nad1* |
|  | LC070668.1 | Peru | *nad1* |
|  | LC070669.1 | Peru | *nad1* |
|  | LC070670.1 | Peru | *nad1* |
|  | LC070671.1 | Peru | *nad1* |
|  | LC070672.1 | Peru | *nad1* |
|  | LC070673.1 | Peru | *nad1* |
|  | KR422389.1 | Poland | *nad1* |
|  | KR422390.1 | Poland | *nad1* |
|  | KR422391.1 | Poland | *nad1* |
|  | KR422392.1 | Poland | *nad1* |
|  | KR422393.1 | Poland | *nad1* |
|  | KR422394.1 | Poland | *nad1* |
|  | KR422395.1 | Poland | *nad1* |
|  | KR422396.1 | Poland | *nad1* |
|  | KR422397.1 | United Kingdom | *nad1* |
|  | AB207154.1 | Uruguay | *nad1* |

Table S4. Population pairwise FSTs for *COI* gene of *Fasciola hepatica*.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 RS | 2 RS | 3 RS | 4 RS | 5 RS | 6 RS | 7 RS | 8 RS | 9 RS | 10 RS | 11 RS | 12 RS | 13 RS | 14 PR | 15 PR |
| 1 RS | 0 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 RS | -0.14446 | 0 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 RS | 0.3151 | 0.28571 | 0 |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 RS | 0.05263 | 0.02793 | 0.77099 | 0 |  |  |  |  |  |  |  |  |  |  |  |
| 4 RS | 0.00991 | -0.03261 | 0.71084 | 0.01935 | 0 |  |  |  |  |  |  |  |  |  |  |
| 6 RS | -0.77778 | -1 | 1 | -1 | -1 | 0 |  |  |  |  |  |  |  |  |  |
| 7 RS | -0.01613 | -0.07143 | 0.67568 | 0.06897 | 0.01449 | -1 | 0 |  |  |  |  |  |  |  |  |
| 8 RS | 0.07004 | 0.05255 | 0.79361 | 0.00201 | -0.19658 | -1 | 0.09677 | 0 |  |  |  |  |  |  |  |
| 9 RS | -0.77778 | -1 | 1 | -1 | -1 | 0 | -1 | -1 | 0 |  |  |  |  |  |  |
| 10 RS | -0.08068 | -0.13208 | 1 | -0.15385 | -0.09091 | 0 | 0 | -0.16667 | 0 | 0 |  |  |  |  |  |
| 11 RS | 0.07374 | 0.07285 | 1 | 0.02778 | 0.15152 | 0 | 0.3 | 0 | 0 | 0 | 0 |  |  |  |  |
| 12 RS | 0.15196 | 0.14773 | 0.71765 | 0.09848 | -0.2 | -0.63636 | 0.15152 | -0.08896 | -0.63636 | -0.02857 | 0.10954 | 0 |  |  |  |
| 13 RS | 0.05029 | 0.04 | 1 | 0 | 0.11111 | 0 | 0.25 | -0.02439 | 0 | 0 | 0 | 0.08861 | 0 |  |  |
| 14 PR | 0.38537 | 0.36556 | 0.8125 | 0.70652 | 0.64021 | 0.5 | 0.6 | 0.73206 | 0.5 | 0.75 | 0.86538 | 0.7065 | 0.8481 | 0 |  |
| 15 PR | 0.16439 | 0.13505 | 0.46835 | 0.24 | 0.18904 | -0.4 | 0.16923 | 0.26431 | -0.4 | 0.14286 | 0.33333 | 0.31924 | 0.3 | 0.16923 | 0 |

1 RS: Arroio Grande; 2 RS: Camaquã; 3 RS: Canguçu; 4 RS: Herval; 5 RS: Ijui; 6 RS: Julio de Castilhos; 7 RS: Palmeira das Missões; 8 RS: Pejuçara; 9 RS: Pelotas; 10 RS: Santa Bárbara do Sul; 11 RS: Santa Vitória do Palmar; 12 RS: Santo Cristo; 13 RS: São Borja; 14 PR: Curitiba; 15 PR: Nova Prata do Iguaçu.

Table S5. Population pairwise FSTs for *Nad1* gene for *Fasciola hepatica*.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 RS | 2 RS | 3 RS | 4 RS | 5 RS | 6 RS | 7 RS | 8 RS | 9 RS | 10 RS | 11 RS | 12 RS | 13 RS | 14 PR | 15 PR |
| 1 RS | 0 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 RS | 0.20165 | 0 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 RS | -0.12372 | -0.03226 | 0 |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 RS | 0.10246 | 0.05524 | -0.02524 | 0 |  |  |  |  |  |  |  |  |  |  |  |
| 4 RS | 0.47297 | -0.11111 | 0.71429 | 0.12442 | 0 |  |  |  |  |  |  |  |  |  |  |
| 6 RS | 0.05044 | -0.04214 | -0.18077 | -0.04813 | -0.08 | 0 |  |  |  |  |  |  |  |  |  |
| 7 RS | -0.02857 | 0.28144 | 0.53846 | 0.14334 | 1 | 0.07692 | 0 |  |  |  |  |  |  |  |  |
| 8 RS | -0.05596 | 0.23077 | 0.47368 | 0.11833 | 1 | 0.03571 | 0 | 0 |  |  |  |  |  |  |  |
| 9 RS | 0.04539 | 0.03377 | 0.02077 | 0.01733 | 0.53333 | -0.03659 | 0.16832 | 0.125 | 0 |  |  |  |  |  |  |
| 10 RS | 0.2206 | 0.01124 | 0.12658 | -0.03957 | 0.18095 | -0.03987 | 0.33846 | 0.29929 | 0.05926 | 0 |  |  |  |  |  |
| 11 RS | 0.30441 | 0.06103 | 0.64179 | 0.08345 | 0.84615 | 0.06975 | 0.8 | 0.78102 | 0.12916 | 0.0069 | 0 |  |  |  |  |
| 12 RS | -0.12372 | -0.03226 | 0 | -0.02524 | 0.71429 | -0.18077 | 0.53846 | 0.47368 | 0.02077 | 0.12658 | 0.64179 | 0 |  |  |  |
| 13 RS | 0.04782 | 0.37231 | 0.28082 | 0.22576 | 0.88889 | 0.17112 | 0.04 | 0.01235 | 0.20863 | 0.40295 | 0.66437 | 0.28082 | 0 |  |  |
| 14 PR | 0.19205 | -0.04348 | 0.33333 | 0.00523 | 0.6 | -0.0371 | 0.59322 | 0.55224 | -0.00939 | -0.05051 | -0.09804 | 0.33333 | 0.52654 | 0 |  |
| 15 PR | 0.41935 | 0.11111 | 0.87755 | 0.151 | 1 | 0.14286 | 1 | 1 | 0.34375 | 0.04444 | 0 | 0.87755 | 0.81538 | 0.11111 | 0 |

1 RS: Arroio Grande; 2 RS: Camaquã; 3 RS: Canguçu; 4 RS: Herval; 5 RS: Ijui; 6 RS: Julio de Castilhos; 7 RS: Palmeira das Missões; 8 RS: Pejuçara; 9 RS: Pelotas; 10 RS: Santa Bárbara do Sul; 11 RS: Santa Vitória do Palmar; 12 RS: Santo Cristo; 13 RS: São Borja; 14 PR: Curitiba; 15 PR: Nova Prata do Iguaçu.