**Supplementary Table 1 Comparison1 of the mt genome of *Parascaris univalens* with those of other ascaridoid nematodes.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Gene | Parascaris univalens | Anisakis simplex | Ascaridia columbae | Ascaridia galli | Ascaris lumbricoides |
| Length (aa) | Ini/Ter codons | Length (aa) | Ini/Ter codons | Length (aa) | Ini/Ter codons | Length (aa) | Ini/Ter codons | Length (aa) | Ini/Ter codons |
|  |  |  |  |  |  |  |  |  |  |  |
| *cox*1 | 521 | TTG/TAG | 525 | TTG/T | 520 | ATG/TAA | 520 | ATG/TAA | 525 | ATT/TAG |
| *trn*C |  |  |  |  |  |  |  |  |  |  |
| *trn*M |  |  |  |  |  |  |  |  |  |  |
| *trn*D |  |  |  |  |  |  |  |  |  |  |
| *trn*G |  |  |  |  |  |  |  |  |  |  |
| *cox*2 | 232 | TTG/TAG | 232 | TTG/TAG | 231 | TTG/TAG | 231 | TTG/TAG | 232 | TTG/TAG |
| *trn*H |  |  |  |  |  |  |  |  |  |  |
| *rrn*L |  |  |  |  |  |  |  |  |  |  |
| *nad*3 | 111 | TTG/TAG | 111 | TTG/TAG | 111 | ATA/TAA | 111 | TTG/TAA | 111 | TTG/TAG |
| *nad*5 | 528 | ATT/T | 527 | ATT/T | 526 | ATA/TAG | 526 | ATA/TAA | 528 | ATT/T |
| *trn*A |  |  |  |  |  |  |  |  |  |  |
| *trn*P |  |  |  |  |  |  |  |  |  |  |
| *trn*V |  |  |  |  |  |  |  |  |  |  |
| *nad*6 | 144 | ATG/TAG | 144 | TTG/TAA | 144 | TTG/TAA | 144 | TTT/TAA | 144 | TTG/TAG |
| *nad*4L | 77 | ATT/TAA | 77 | ATT/T | 72 | GTT/T | 72 | ATT/TAA | 77 | ATT/TAG |
| *trn*W |  |  |  |  |  |  |  |  |  |  |
| *trn*E |  |  |  |  |  |  |  |  |  |  |
| *rrn*S |  |  |  |  |  |  |  |  |  |  |
| *trn*S (UCN) |  |  |  |  |  |  |  |  |  |  |
| *trn*N |  |  |  |  |  |  |  |  |  |  |
| *trn*Y |  |  |  |  |  |  |  |  |  |  |
| *nad*1 | 290 | TTG/TAG | 290 | ATA-TAA | 291 | TTG/TAA | 291 | TTG/TAA | 290 | TTG/TAG |
| *atp*6 | 199 | ATT/TAA | 199 | TTG-TAA | 198 | ATA/TAA | 198 | ATA/TAA | 199 | ATT/TAG |
| *trn*K |  |  |  |  |  |  |  |  |  |  |
| *trn*L (UUR) |  |  |  |  |  |  |  |  |  |  |
| *trn*S (AGN) |  |  |  |  |  |  |  |  |  |  |
| *nad*2 | 281 | TTG/T | 281 | TTG/TAA | 280 | TTG/TAA | 280 | TTG/TAA | 281 | TTG/T |
| *trn*I |  |  |  |  |  |  |  |  |  |  |
| *trn*R |  |  |  |  |  |  |  |  |  |  |
| *trn*Q |  |  |  |  |  |  |  |  |  |  |
| *trn*F |  |  |  |  |  |  |  |  |  |  |
| *cob* | 364 | GTT/TAG | 366 | ATG/T | 366 | GTT/TAA | 367 | ATG/TAA | 365 | ATT/TAA |
| *trn*L (CUN) |  |  |  |  |  |  |  |  |  |  |
| *cox*3 | 255 | GTT/TAG | 255 | TTG/T | 248 | TTG/TAA | 248 | TTG/TAG | 255 | GTT/TAG |
| *trn*T |  |  |  |  |  |  |  |  |  |  |
| *nad*4 | 409 | TTG/TAA | 409 | TTG/TAA | 411 | ATA/TAG | 411 | GTG/TAG | 409 | TTG/TAA |

1Characteristics of *Parascaris univalens* mt genome, including initiation and termination codons for protein-coding genes as well as the lengths of their predicted amino acid sequences, compared with those of selected ascaridoid nematodes (cf. Table 1).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Gene | Ascaris suum | Contracaecum osculatum | Contracaecum rudolphii B | Cucullanus robustus | Baylisascaris ailuri |
|  | Length (aa) | Ini/Ter codons | Length (aa) | Ini/Ter codons | Length (aa) | Ini/Ter codons | Length (aa) | Ini/Ter codons | Length (aa) | Ini/Ter codons |
| *cox*1 | 525 | ATT/T | 525 | TTG/T | 525 | TTG/T | 525 | TTG/TAG | 524 | TTG/TAA |
| *trn*C |  |  |  |  |  |  |  |  |  |  |
| *trn*M |  |  |  |  |  |  |  |  |  |  |
| *trn*D |  |  |  |  |  |  |  |  |  |  |
| *trn*G |  |  |  |  |  |  |  |  |  |  |
| *cox*2 | 232 | TTG/TAG | 231 | TTG/TAA | 231 | TTG/TAA | 231 | TTG/TAA | 232 | TTG/TAG |
| *trn*H |  |  |  |  |  |  |  |  |  |  |
| *rrn*L |  |  |  |  |  |  |  |  |  |  |
| *nad*3 | 111 | TTG/TAG | 111 | TTG/TAA | 111 | TTG/TAA | 110 | TTG/TAA | 111 | TTG/TAG |
| *nad*5 | 528 | ATT/T | 527 | ATT/T | 527 | ATT/T | 527 | ATT/TAA | 528 | ATT/T |
| *trn*A |  |  |  |  |  |  |  |  |  |  |
| *trn*P |  |  |  |  |  |  |  |  |  |  |
| *trn*V |  |  |  |  |  |  |  |  |  |  |
| *nad*6 | 144 | TTG/TAG | 144 | TTG/TAA | 144 | TTG/TAA | 144 | ATT/TAA | 144 | TTG/TAG |
| *nad*4L | 77 | ATT/TAG | 77 | ATT/TAG | 77 | ATT/TAG | 77 | ATT/TAA | 77 | ATT/TAG |
| *trn*W |  |  |  |  |  |  |  |  |  |  |
| *trn*E |  |  |  |  |  |  |  |  |  |  |
| *rrn*S |  |  |  |  |  |  |  |  |  |  |
| *trn*S (UCN) |  |  |  |  |  |  |  |  |  |  |
| *trn*N |  |  |  |  |  |  |  |  |  |  |
| *trn*Y |  |  |  |  |  |  |  |  |  |  |
| *nad*1 | 290 | TTG/TAG | 290 | TTG/TAA | 290 | TTG/TAA | 290 | TTG/TAG | 290 | TTG/TAG |
| *atp*6 | 199 | ATT/TAG | 199 | ATT/TAA | 199 | ATT/TAG | 199 | ATT/TAA | 199 | ATT/TAG |
| *trn*K |  |  |  |  |  |  |  |  |  |  |
| *trn*L (UUR) |  |  |  |  |  |  |  |  |  |  |
| *trn*S (AGN) |  |  |  |  |  |  |  |  |  |  |
| *nad*2 | 281 | TTG/T | 281 | ATT/TAG | 281 | TTG/TAA | 280 | TTG/TAA | 281 | TTG/TA |
| *trn*I |  |  |  |  |  |  |  |  |  |  |
| *trn*R |  |  |  |  |  |  |  |  |  |  |
| *trn*Q |  |  |  |  |  |  |  |  |  |  |
| *trn*F |  |  |  |  |  |  |  |  |  |  |
| *cob* | 365 | ATT/TAG | 368 | TTG/TAA | 368 | TTG/TAG | 366 | ATT/T | 368 | GTG/TAA |
| *trn*L (CUN) |  |  |  |  |  |  |  |  |  |  |
| *cox*3 | 255 | GTT/TAA | 255 | ATT/T | 255 | TTG/T | 255 | TTG/T | 255 | ATG/TAG |
| *trn*T |  |  |  |  |  |  |  |  |  |  |
| *nad*4 | 409 | TTG/TAA | 409 | TTG/TAG | 409 | TTG/TAA | 409 | TTG/TAA | 409 | TTG/TAG |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Gene | Baylisascaris procyonis | Baylisascaris schroederi | Baylisascaris transfuga | Toxocara canis |
| Length (aa) | Ini/Ter codons | Length (aa) | Ini/Ter codons | Length (aa) | Ini/Ter codons | Length (aa) | Ini/Ter codons |
|  |  |  |  |  |  |  |  |  |
| cox1 | 525 | TTG/TAG | 525 | TTG/TAA | 525 | TTG/TAA | 526 | TTG/TAG |
| *trn*C |  |  |  |  |  |  |  |  |
| *trn*M |  |  |  |  |  |  |  |  |
| *trn*D |  |  |  |  |  |  |  |  |
| *trn*G |  |  |  |  |  |  |  |  |
| *cox*2 | 232 | TTG/TAG | 232 | TTG/TAG | 232 | TTG/TAG | 238 | GTT/TAG |
| *trn*H |  |  |  |  |  |  |  |  |
| *rrn*L |  |  |  |  |  |  |  |  |
| *nad*3 | 111 | TTG/TAA | 111 | TTG/TAG | 111 | TTG/TAG | 112 | TTG/TAG |
| *nad*5 | 528 | ATT/T | 528 | ATT/T | 528 | ATT/T | 528 | ATA/T |
| *trn*A |  |  |  |  |  |  |  |  |
| *trn*P |  |  |  |  |  |  |  |  |
| *trn*V |  |  |  |  |  |  |  |  |
| *nad*6 | 144 | TTG/TAG | 144 | TTG/TAG | 144 | TTG/TAG | 145 | TTG/TA |
| *nad*4L | 77 | ATT/TAA | 77 | ATT/TAG | 77 | ATT/TAG | 78 | ATT/T |
| *trn*W |  |  |  |  |  |  |  |  |
| *trn*E |  |  |  |  |  |  |  |  |
| *rrn*S |  |  |  |  |  |  |  |  |
| *trn*S (UCN) |  |  |  |  |  |  |  |  |
| *trn*N |  |  |  |  |  |  |  |  |
| *trn*Y |  |  |  |  |  |  |  |  |
| *nad*1 | 290 | TTG/TAG | 290 | TTG/TAG | 290 | TTG/TAG | 291 | TTG/TAG |
| *atp*6 | 199 | ATA/TAG | 199 | ATT/TAA | 199 | ATT/TAG | 200 | ATT/T |
| *trn*K |  |  |  |  |  |  |  |  |
| *trn*L (UUR) |  |  |  |  |  |  |  |  |
| *trn*S (AGN) |  |  |  |  |  |  |  |  |
| *nad*2 | 281 | GTG/T | 281 | TTG/TA | 281 | TTG/TA | 282 | ATT/T |
| *trn*I |  |  |  |  |  |  |  |  |
| *trn*R |  |  |  |  |  |  |  |  |
| *trn*Q |  |  |  |  |  |  |  |  |
| *trn*F |  |  |  |  |  |  |  |  |
| *cob* | 368 | GTG/TAG | 368 | GTG/TAG | 368 | GTG/TAG | 369 | GTG/TAG |
| *trn*L (CUN) |  |  |  |  |  |  |  |  |
| *cox*3 | 255 | GTG/TAG | 255 | ATG/TAG | 255 | ATG/TAG | 256 | ATG/TAG |
| *trn*T |  |  |  |  |  |  |  |  |
| *nad*4 | 409 | TTG/TAG | 409 | TTG/TAG | 409 | TTG/TAG | 410 | ATA/TAG |

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Toxocara cati | Toxocara malaysiensis | Toxascaris leonina |
| Length (aa) | Ini/Ter codons | Length (aa) | Ini/Ter codons | Length (aa) | Ini/Ter codons |
|  |  |  |  |  |  |  |
| *cox*1 | 526 | TTG/TAG | 527 | TTG/TAG | 525 | TTG/TAG |
| *trn*C |  |  |  |  |  |  |
| *trn*M |  |  |  |  |  |  |
| *trn*D |  |  |  |  |  |  |
| *trn*G |  |  |  |  |  |  |
| *cox*2 | 237 | GTT/TAA | 237 | GTA/TAG | 232 | TTG/T |
| *trn*H |  |  |  |  |  |  |
| *rrn*L |  |  |  |  |  |  |
| *nad*3 | 112 | TTG/TAG | 112 | TTG/TAG | 111 | TTG/TAG |
| *nad*5 | 528 | ATA/T | 528 | ATG/T | 527 | ATT/T |
| *trn*A |  |  |  |  |  |  |
| *trn*P |  |  |  |  |  |  |
| *trn*V |  |  |  |  |  |  |
| *nad*6 | 145 | TTG/TA | 145 | TTG/TA | 144 | TTG/TAG |
| *nad*4L | 78 | ATT/T | 78 | ATT/T | 77 | ATT/TAG |
| *trn*W |  |  |  |  |  |  |
| *trn*E |  |  |  |  |  |  |
| *rrn*S |  |  |  |  |  |  |
| *trn*S (UCN) |  |  |  |  |  |  |
| *trn*N |  |  |  |  |  |  |
| *trn*Y |  |  |  |  |  |  |
| *nad*1 | 291 | TTG/TAA | 291 | TTG/TAG | 290 | TTG/TAG |
| *atp*6 | 200 | ATT/T | 200 | ATT/T | 199 | ATT/TAG |
| *trn*K |  |  |  |  |  |  |
| *trn*L (UUR) |  |  |  |  |  |  |
| *trn*S (AGN) |  |  |  |  |  |  |
| *nad*2 | 282 | GTT/T | 282 | ATT/T | 281 | GTG/T |
| *trn*I |  |  |  |  |  |  |
| *trn*R |  |  |  |  |  |  |
| *trn*Q |  |  |  |  |  |  |
| *trn*F |  |  |  |  |  |  |
| *cob* | 369 | ATG/TAA | 369 | GTG/TAG | 364 | TTG/TAA |
| *trn*L (CUN) |  |  |  |  |  |  |
| *cox*3 | 256 | ATG/TAA | 256 | GTG/TAG | 255 | GTT/TAG |
| *trn*T |  |  |  |  |  |  |
| *nad*4 | 410 | ATA/TAG | 410 | ATA/TAG | 409 | TTG/TAG |