Ophirina amphinema n. gen., n. sp., a New Deeply Branching Discobid with Phylogenetic Affinity to Jakobids

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Running title: ***Ophirina,* the sister taxon to jakobids**

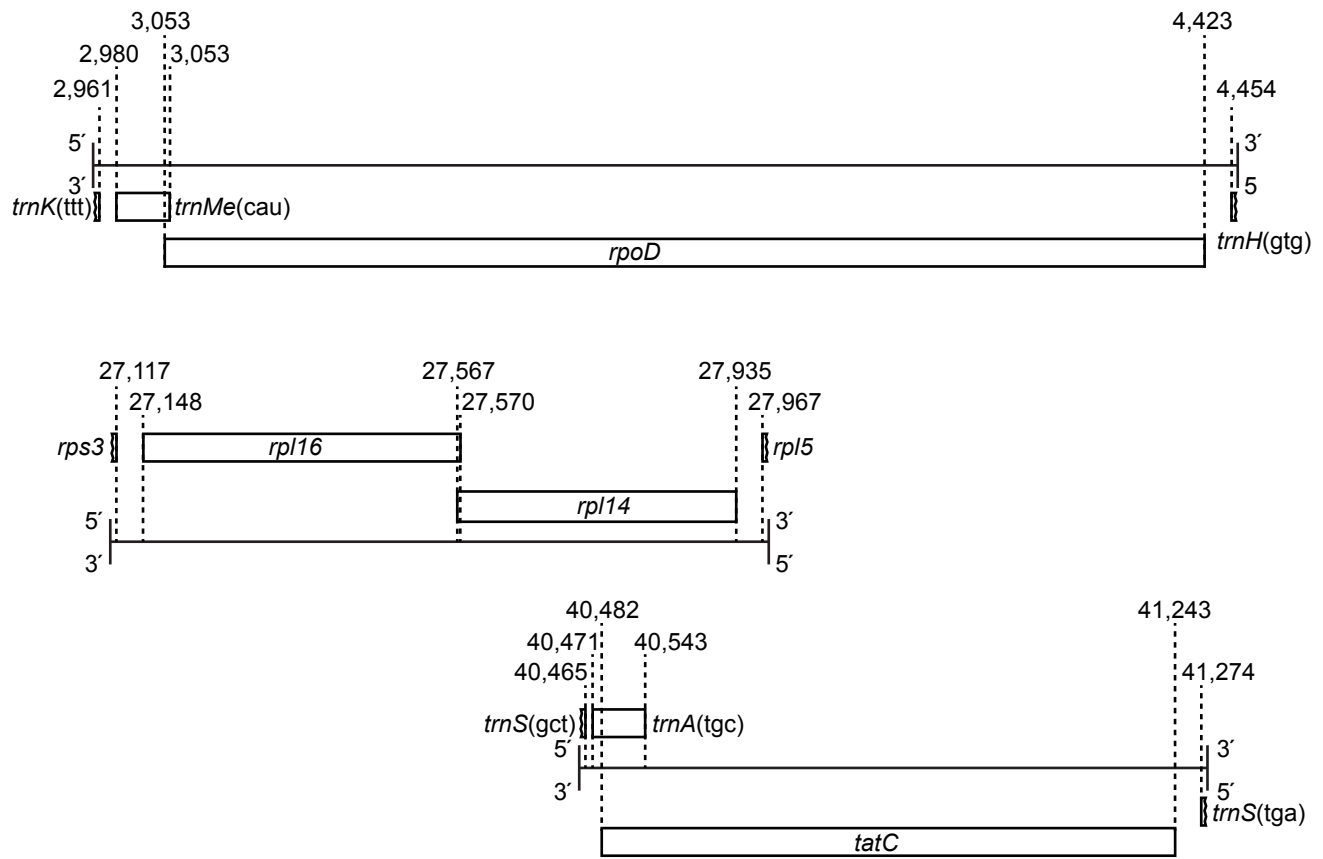
3,053
2,980
3,053
2,961
4,423
4,454
5′
3′
3′
5
trnK(ttt)
trnMe(cau)
rpoD
trnH(gtg)
27,117
27,148
27,567
27,570
27,935
27,967
rps3
rpl16
rpl5
rpl14
5′
3′
3′
5′
40,482
40,471
40,543
40,465
41,243
41,274
trnS(gct)
trnA(tgc)
5′
3′
3′
5′
trnS(tga)
tatC

Fig. S1

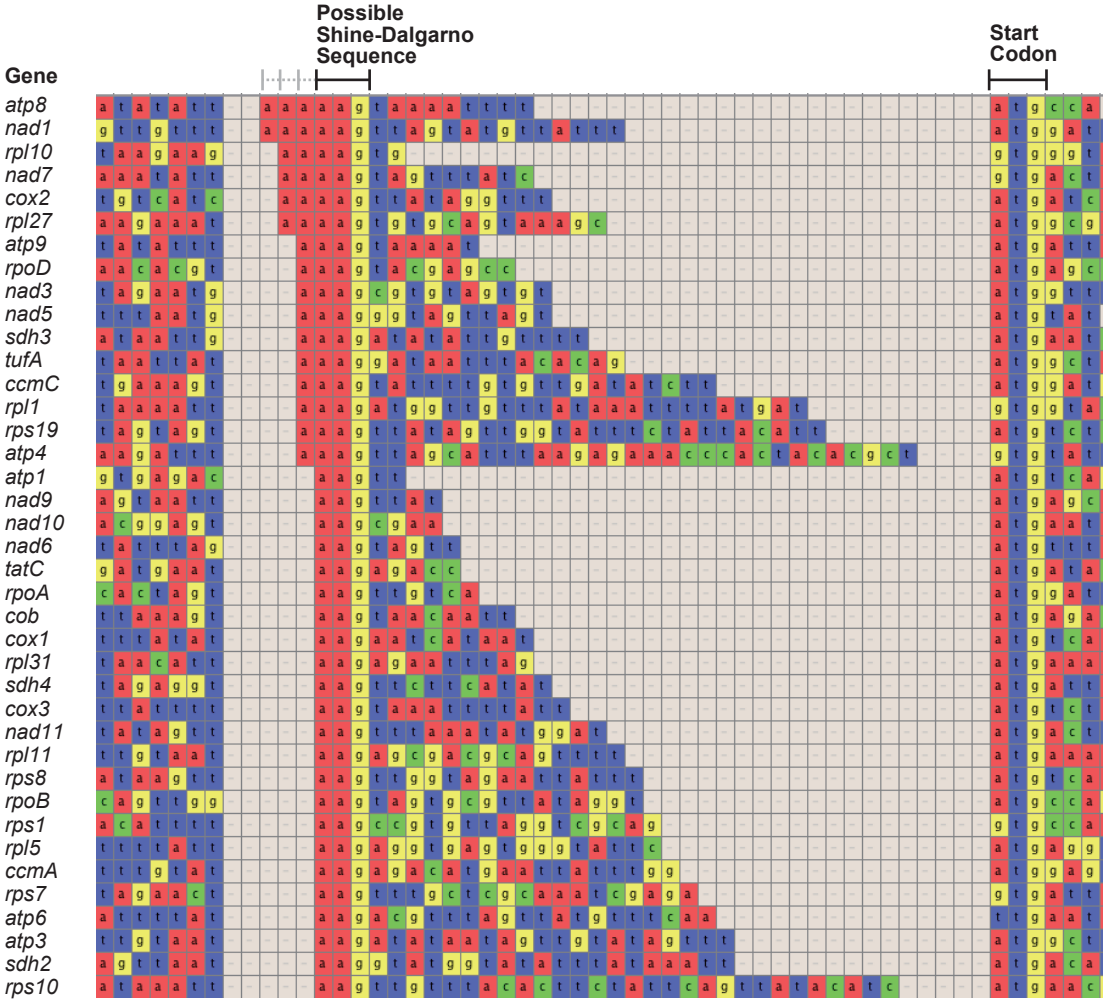
Possible
Shine-Dalgarno
Sequence
Start
Codon
Gene
atp8
nad1
rpl10
nad7
cox2
rpl27
atp9
rpoD
nad3
nad5
sdh3
tufA
ccmC
rpl1
rps19
atp4
atp1
nad9
nad10
nad6
tatC
rpoA
cob
cox1
rpl31
sdh4
cox3
nad11
rpl11
rps8
rpoB
rps1
rpl5
ccmA
rps7
atp6
atp3
sdh2
rps10

Fig. S2

Figure S1. Partial map of the mitochondrial genome in which two genes overlapped.

Figure S2. Possible Shine–Dalgarno translation initiation motifs (5′-AAG-3′).

Supplementary video 1. Two *Ophirina amphinema* cells of suspension type. Note characteristic beating motion of posterior flagellum along feeding groove.

Supplementary video 2. Swimming type cell of *Ophirina amphinema*, showing jittery movement.