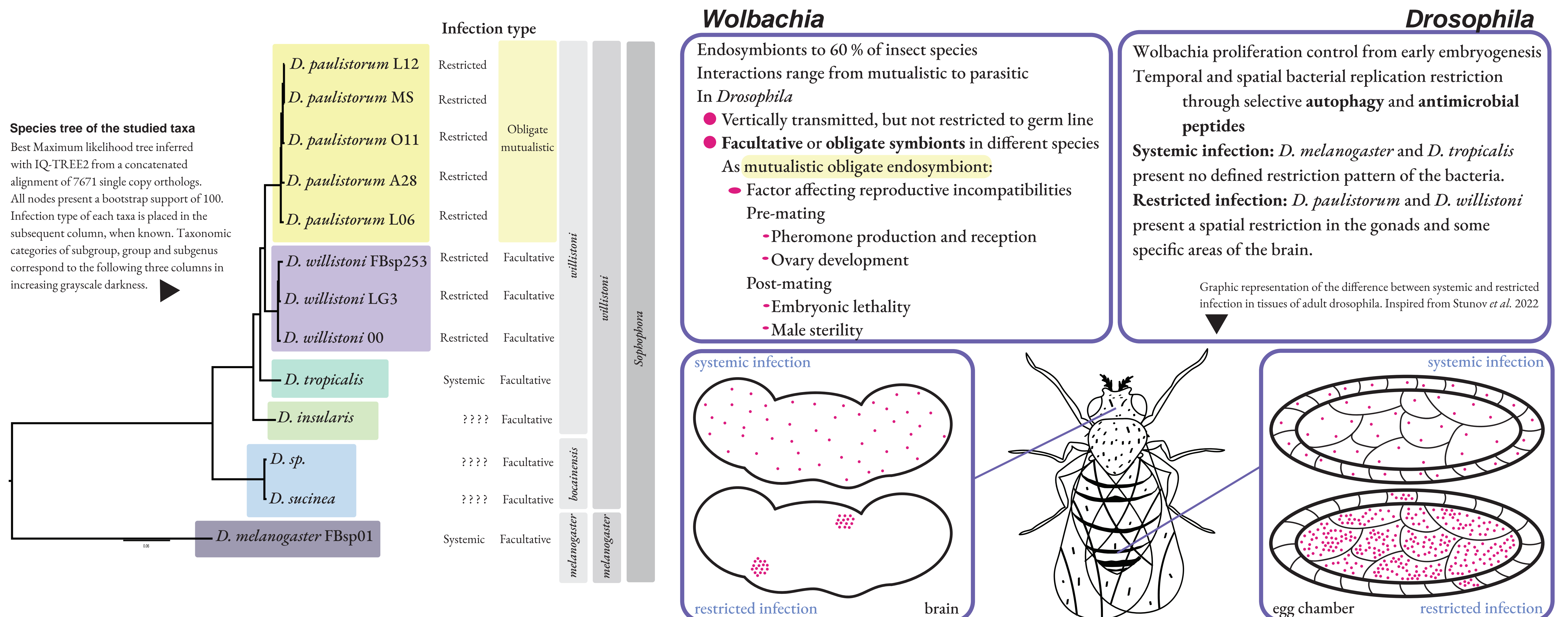






Cost-benefit equilibrium of an endosymbiosis: a comparative genomic study of the genetic components associated with *Wolbachia* infection in the *willistoni* group of *Drosophila*

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Materials and methods

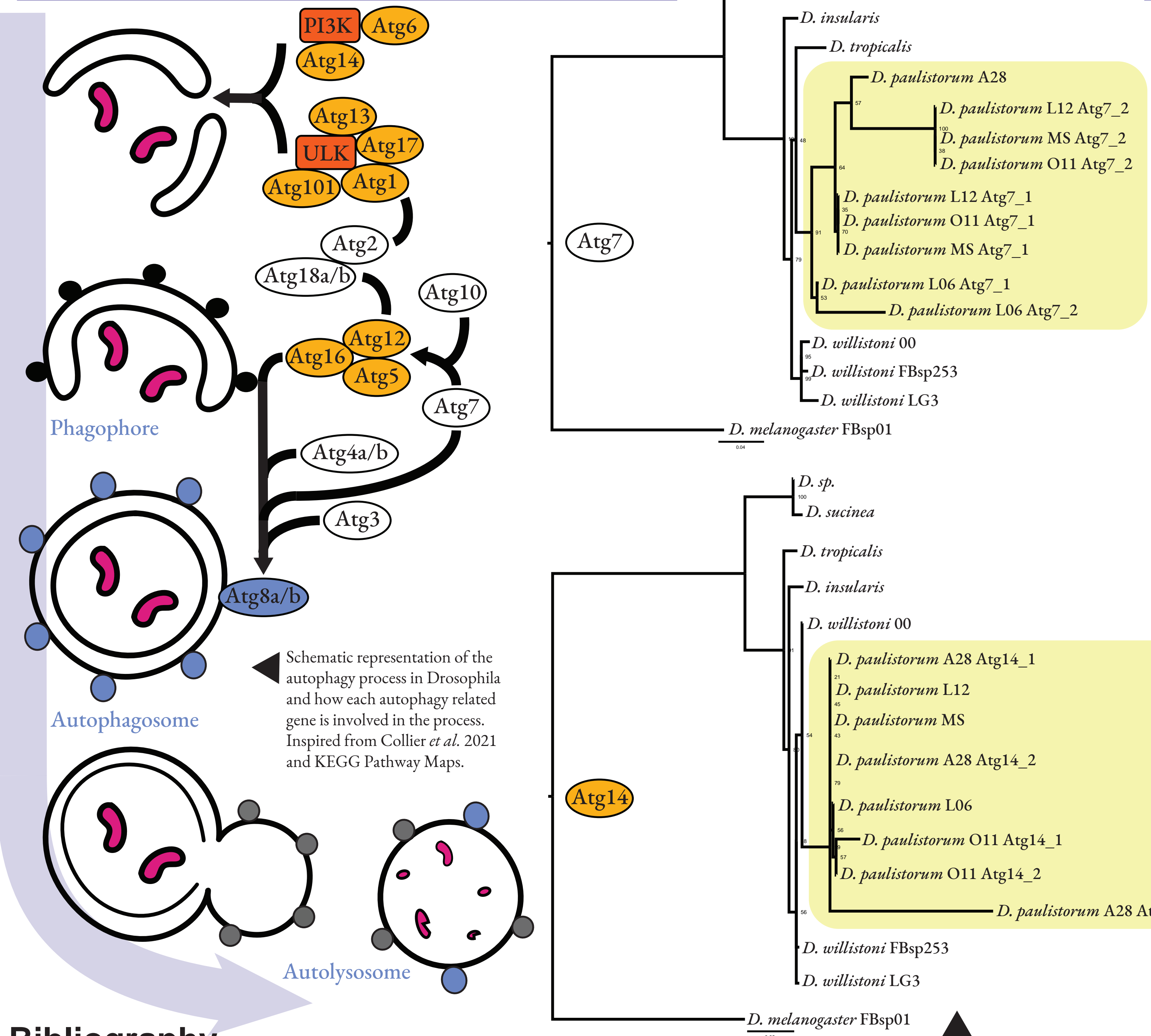
<i>Drosophila paulistorum</i>	MS	Nanopore and Illumina sequencing + RNAseq				Ortholog finder		Detailed pipeline	
	O11								
	A28								
	L06								
	L12								
<i>Drosophila insularis</i>	Nanopore and Illumina data from Kim <i>et al.</i> 2021	<i>De novo whole genome assembly</i> with long reads	Genome assembly polish with long and short read data	Gene prediction Sophohora proteomes as evidence + RNA data when available	Autophagy related genes and antimicrobial peptides gene trees. Copy number variation?	Species tree with single copy orthologs			
<i>Drosophila tropicalis</i>									
<i>Drosophila sucinea</i>									
<i>Drosophila sp.</i>									
00									
<i>Drosophila willistoni</i>	LG3								
	FBsp253								
<i>Drosophila melanogaster</i>	FBsp001				Flybase.org proteome				

Results

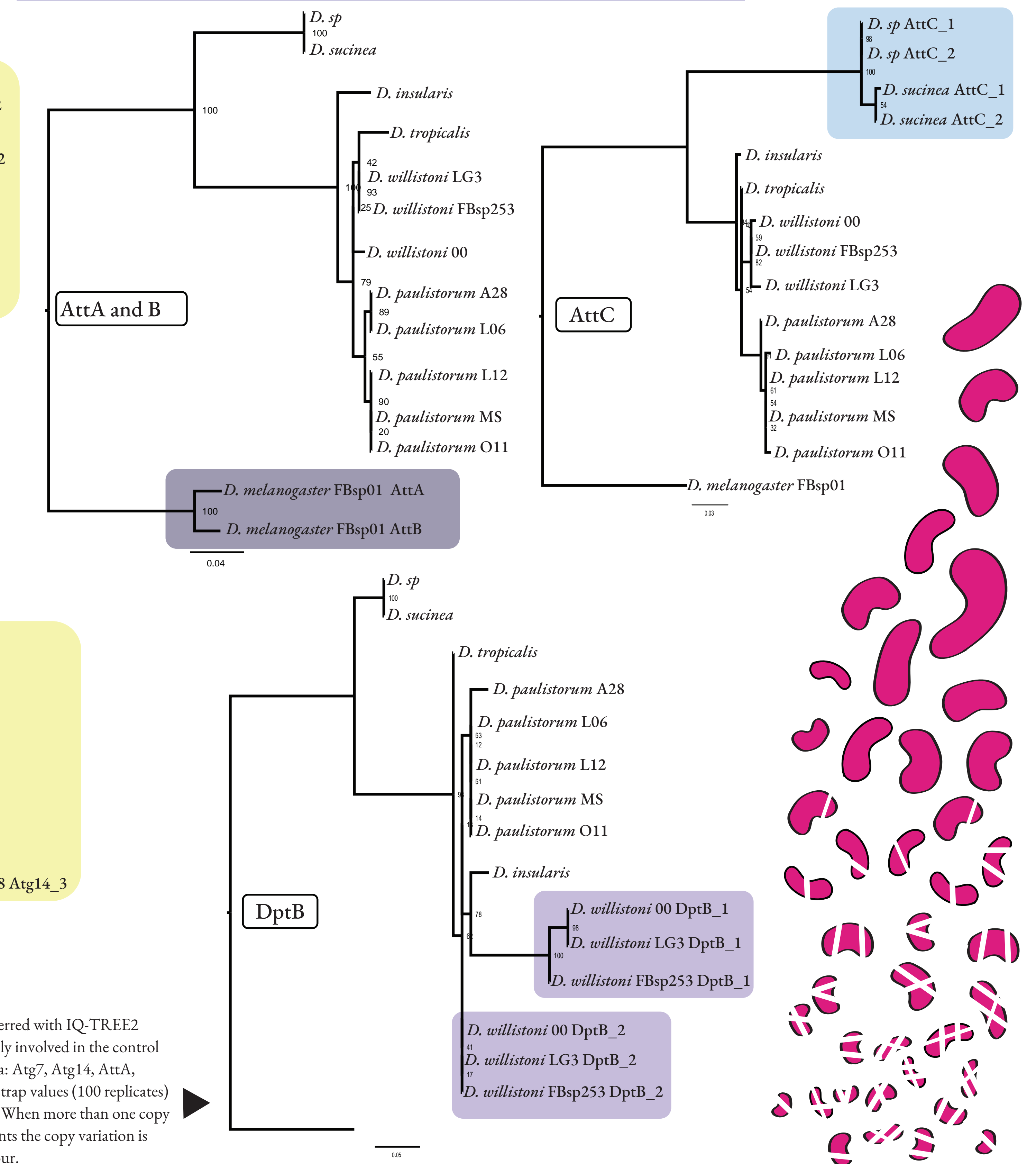
Autophagy related genes:
Most of the Atg genes seem to be present as single copy gene in all the studied species (not shown).
Atg14 present in three copies in *D. paulistorum* A28, and present in two copies in *D. paulistorum* O11.
Atg7 present in two copies in every semi-species of *D. paulistorum* except in A28.
Key players in the formation of the phagophore and autophagosome respectively

Antimicrobial peptides:
Att (Attacin)
AttA and **AttB** in *D. melanogaster*
AttC, two copies in *D. sucinea*
AttD (not shown), absent in *D. paulistorum* A28 and O11
Dpt (Diptericin)
DptA, single copy in all studied species (not shown)
DptB, two copies in *D. willistoni*

Autophagy related genes (Atg)



Antimicrobial peptides (Att and Dpt)



Bibliography

Collier *et al.* Emerging roles of ATG7 in human health and disease. 2021. EMBO Mol Med 13:e14824
KEGG Pathway Maps - Autophagy *Drosophila melanogaster*. https://www.genome.jp/kegg-bin/show_pathway?dme04140 (last visited 2022/07/16)
Kim *et al.* Highly contiguous assemblies of 101 drosophilid genomes. 2021. eLife 10:e66405
Stunov *et al.* Restriction of *Wolbachia* bacteria in early embryogenesis of neotropical *Drosophila* species via endoplasmic reticulum mediated autophagy. 2022. MBio 13:issue2