Table S1. Sample resources are used in this study

Speices	Sample ID	Topology	Accession Number	Reference
Endochironomus albipennis	XL1630	Linear	OP950227	This study
Endochironomus pekanus	XL2023	Circle	OP950219	This study
Endochironomus tendens	XL1631	Linear	OP950228	This study
Phaenopsectra flavipes	LGS279	Circle	OP950216	This study
Polypedilum heberti	XL821	Linear	OP950225	This study
Polypedilum sp.1	NAM06	Circle	OP950217	This study
Polypedilum nubifer	/	Circle	MZ747090	[1]
Polypedilum vanderplanki	/	Circle	KT251040	[2]
Polypedilum yongsanensis	HHLY216	Linear	OP950222	This study
Polypedilum unifascium	/	Circle	MW677959	[3]
Polypedilum masudai	XL2759	Linear	OK513041	This study
Sergentia baueri	XL2656	Circle	OP950220	This study
Stictochironomus akizukii	XL1229	Circle	OP950218	This study
Stictochironomus juncaii	XL1582	Linear	OP950226	This study
Stictochironomus rosenschoeldi	XL552	Linear	OP950224	This study
Synendotendipes impar	ITA1	Linear	OP950223	This study
Synendotendipes sp.1	XL3845	Circle	OP950221	This study
Stenochironomus baishanzuensis	NLCH802	Linear	OL742441	[4]
Stenochironomus okialbus	ZJ761	Circle	OL753645	[4]

Reference

1. Xiao, Y.L.; Xu, Z.G.; Wang, J.X.; Fang, X.L.; Fu, Y. Complete mitochondrial genome of a Eurytopic midge, *Polypedilum nubifer* (Diptera: Chironomidae). *Mitochondr. DNA Part B Resour.* **2022**, 7, 1936–1938. https://doi.org/10.1080/23802359.2022.2122746
2. Deviatiiarov, R.; Kikawada, T.; Gusev, O. The complete mitochondrial genome of an anhydrobiotic midge *Polypedilum vanderplanki* (Chironomidae, Diptera). *Mitochondrial DNA Part A* **2017**, *2*, 218–220. https:// doi.org/ 10.3109 /19401736.2015.1115849
3. Zheng, C.G.; Liu, Z.; Zhao, Y.M.; Wang, Y.; Bu, W.J.; Wang, X.H.; Lin, X.L. First report on mitochondrial gene rearrangement in non-biting midges, revealing a synapomorphy in *Stenochironomus* Kieffer (Diptera: Chironomidae). *Insects* **2022**, *13*, 115. https://doi.org/10.3390/insects13020115
4. Zheng, C.G.; Liu, Z.; Zhao, Y.M.; Wang, Y.; Bu, W.J.; Wang, X.H.; Lin, X.L. First report on mitochondrial gene rearrangement in non-biting midges, revealing a synapomorphy in Stenochironomus Kieffer (Diptera: Chironomidae). Insects 2022, 13, 115. https://doi.org/10.3390/insects13020115.
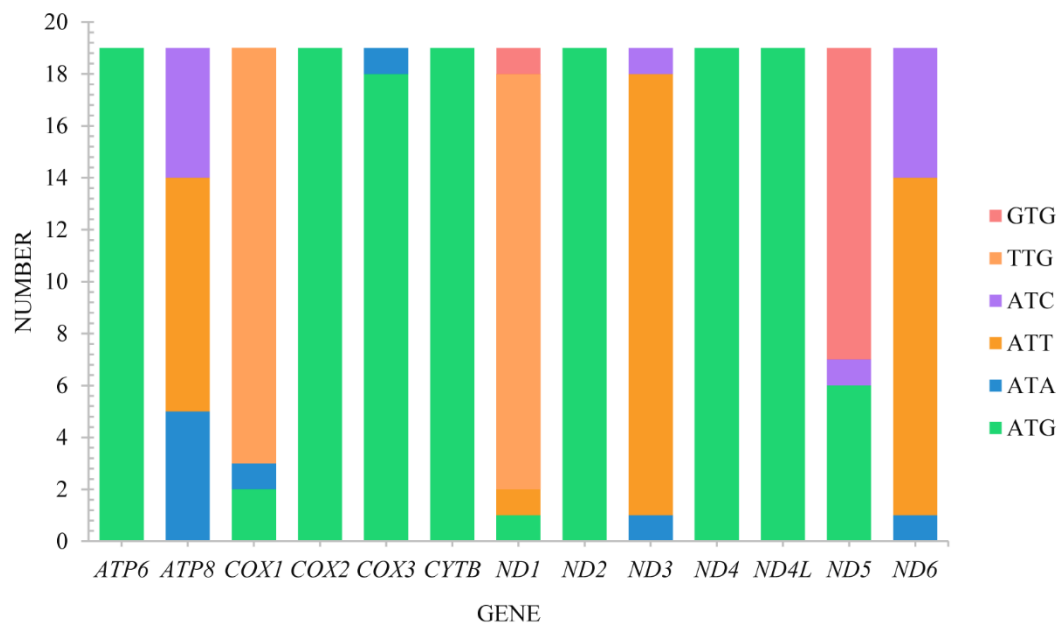
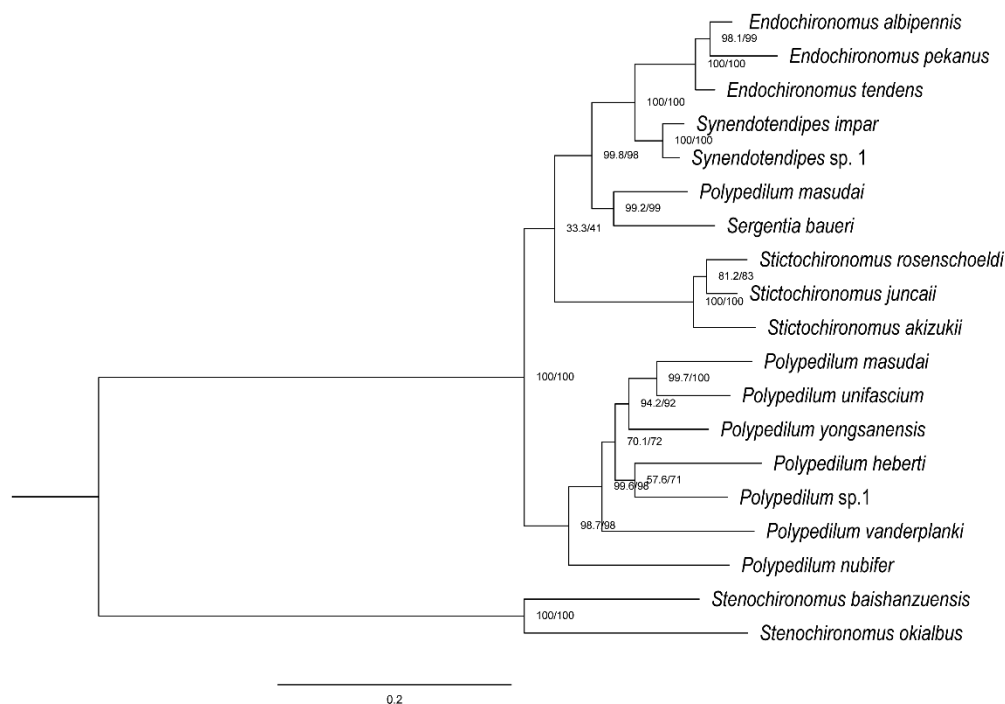Figure S1. Start codons of protein-coding genes among *Polypedilum* generic complex mitogenomes

Figure S2. ML phylogenetic tree of *Polypedilum* generic complex based on the analysis cds_faa with Partition model in IQTREE. Support values on nodes indicate SH-aLRT/UFBoot2, respectively.
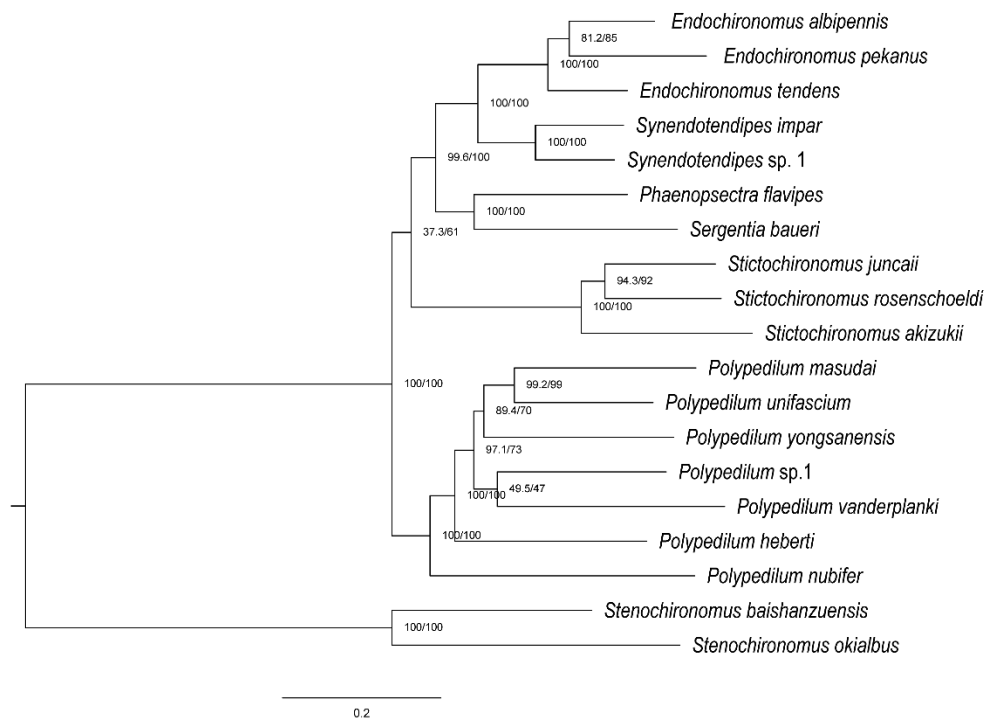
Figure S3. ML phylogenomic tree of *Polypedilum* generic complex based on the analysis cds_fna with Partition model in IQTREE. Support values on nodes indicate SH-aLRT/UFBoot2, respectively
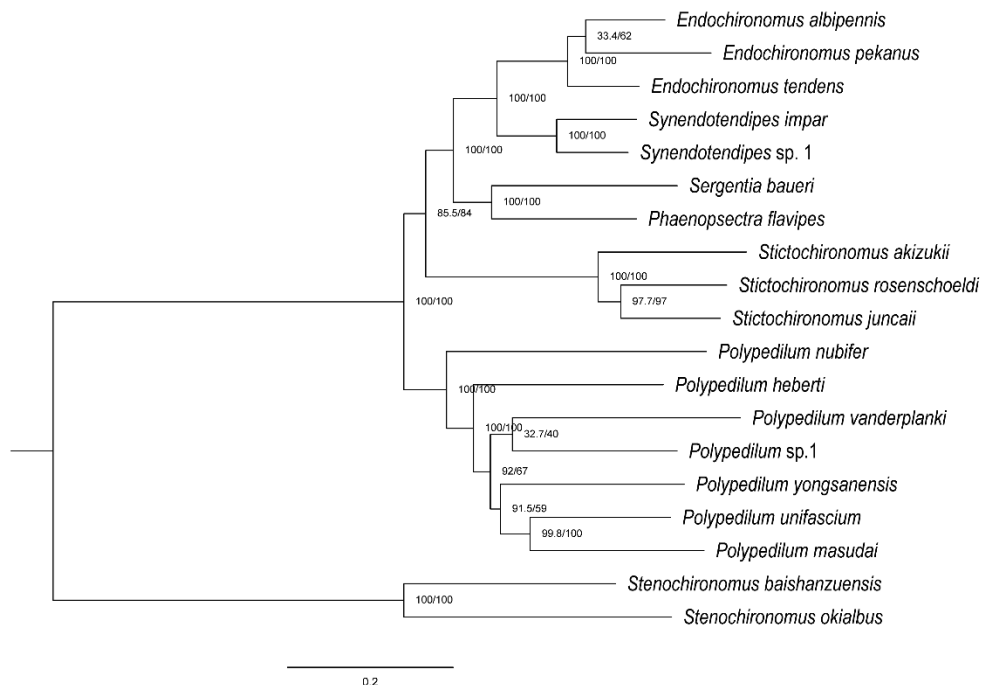

Figure S4. ML phylogenomic tree of *Polypedilum* generic complex based on the analysis cds_rrna with Partition model in IQTREE. Support values on nodes indicate SH-aLRT/UFBoot2, respectively
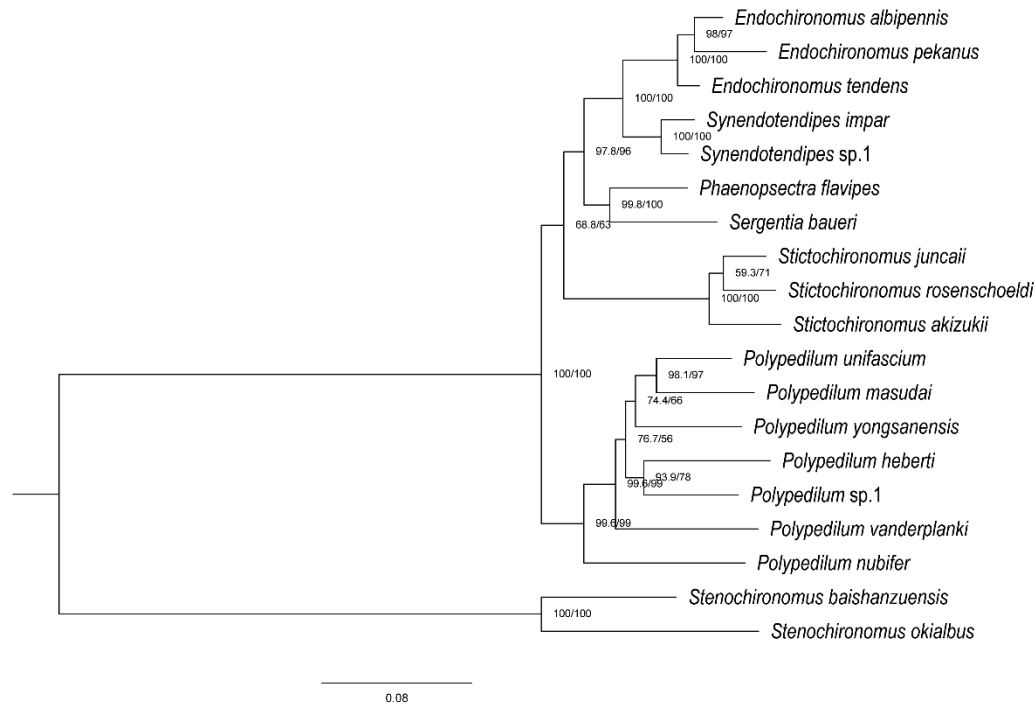
Figure S5. ML phylogenomic tree of *Polypedilum* generic complex based on the analysis cds12_fna with Partition model in IQTREE. Support values on nodes indicate SH-aLRT/UFBoot2, respectively
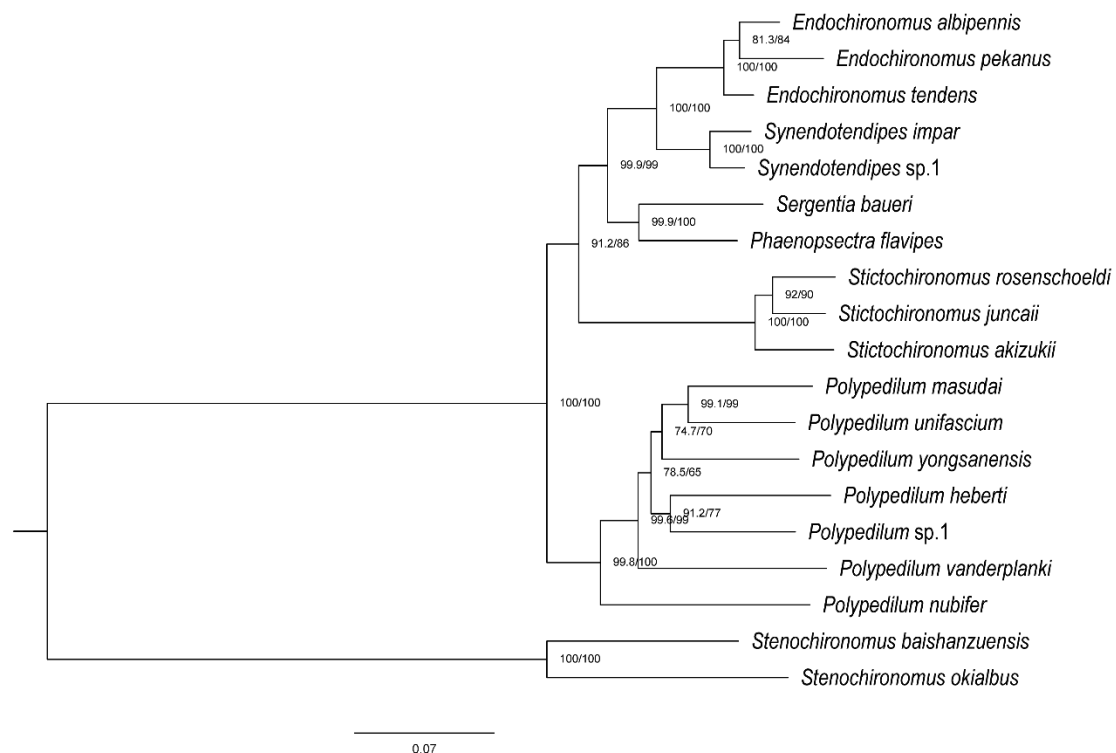

Figure S6. ML phylogenomic tree of *Polypedilum* generic complex based on the analysis cds12_rrna with Partition model in IQTREE. Support values on nodes indicate SH-aLRT/UFBoot2, respectively
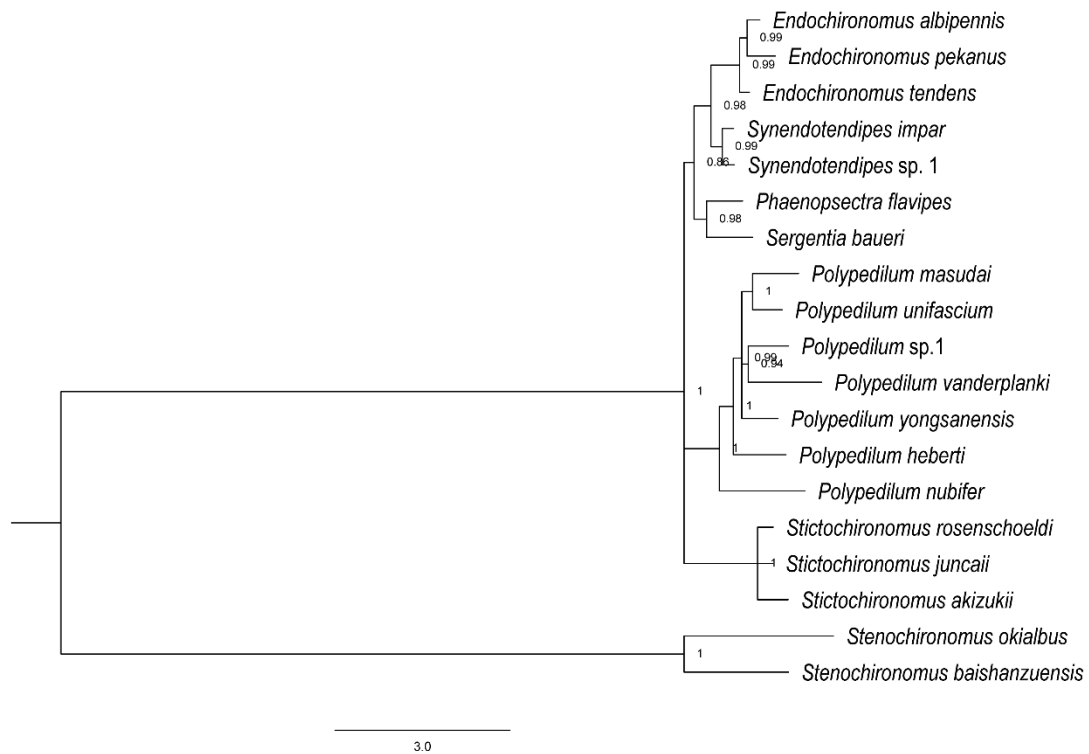
Figure S7. BI phylogenomic tree of *Polypedilum* generic complex based on the analysis cds_fna with GTR+CAT model in phylobayes. Support values on nodes indicate Bayesian posterior probabilities.
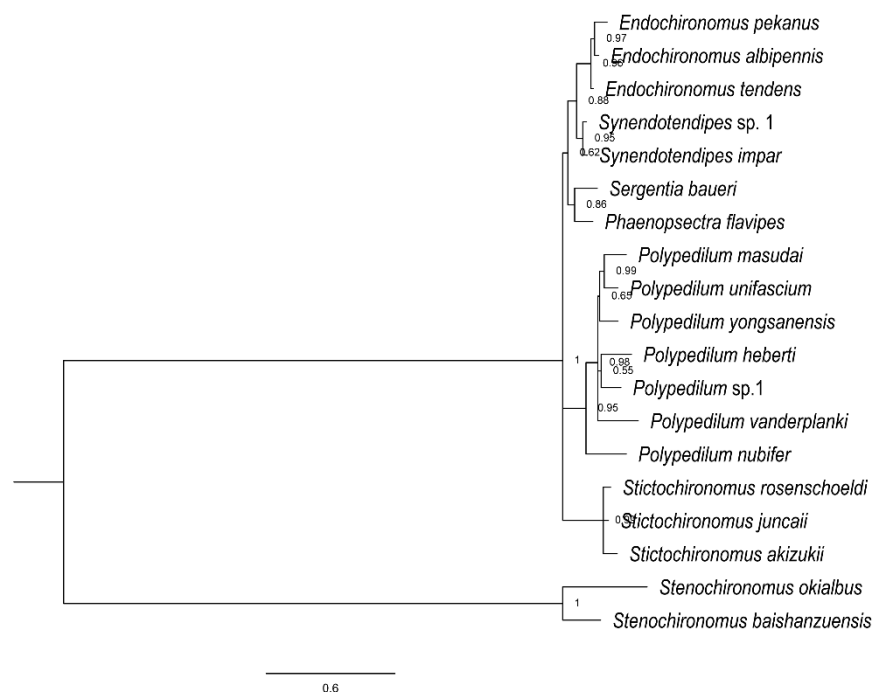

Figure S8. BI phylogenomic tree of *Polypedilum* generic complex based on the analysis cds12_fna with GTR+CAT model in phylobayes. Support values on nodes indicate Bayesian posterior probabilities.
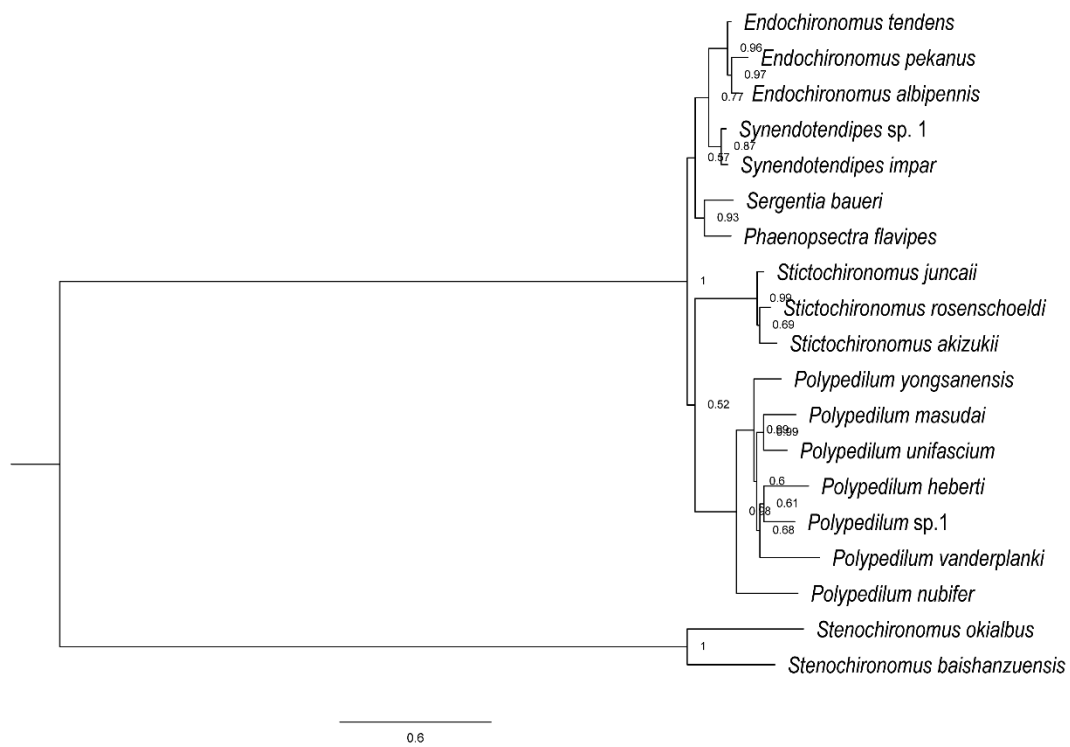
Figure S9. BI phylogenomic tree of *Polypedilum* generic complex based on the analysis cds12_rrna with GTR+CAT model in phylobayes. Support values on nodes indicate Bayesian posterior probabilities.