

Method of vertical transmission

Symbiont	Host	References
Single cell organisms: Continuous host infection		
<i>Candidatus Nucleicultrix amoebiphila</i> (Alphaproteobacteria)	<i>Hartmannella</i> sp. Amoeba	Schulz <i>et al.</i> 2014
<i>Species unknown</i> (Methanotrophic archaea)	<i>Nyctotherus</i> spp. Ciliate	Van Hoek <i>et al.</i> 2000
Multicellular organisms: Soma-to-soma transmission		
<i>Oophila amblystomatis</i> (Chlamydomonadales)	<i>Ambystoma maculatum</i> Spotted salamander	Kerney <i>et al.</i> 2011
<i>Cyanobacteria</i> (Blue-green algae)	<i>Trididemnum nubilum/T. clinides</i> Coral reef ascidians	Kojima & Hirose 2012
<i>Cyanobacteria</i> (Blue-green algae)	<i>Lissoclinum punctatum</i> Marine ascidian	Hirose 2009
<i>Candidatus Benitsuchiphilus tojoi</i> (Gammaproteobacteria)	<i>Parastrachia japonensis</i> Stinkbug	Hosokawa <i>et al.</i> 2012
<i>Candidatus Riegeria</i> (Alphaproteobacteria- chemosynthetic)	<i>Paracatenula galateia</i> Catenulid flatworm	Dirks <i>et al.</i> 2012
<i>Burkholderia</i> sp. (Betaproteobacteria)	<i>Psychotria</i> sp. Flowering plants	Pinto-Carbó <i>et al.</i> 2018
<i>Candidatus Wigglesworthia glossinidia</i> (Gammaproteobacteria)	<i>Glossina morsitans/G. brevipalpis</i> Tsetse flies	Rio <i>et al.</i> 2012

<i>Candidatus</i> Aschnera chinzeii (Gammaproteobacteria)	<i>Nycteribia allotopa</i> Bat fly	Hosokawa <i>et al.</i> 2012
<i>Candidatus</i> Tachikawaea gelatinosa (Gammaproteobacteria)	<i>Urostylis westwoodii/U. annulicornis</i> Stink bugs	Kaiwa <i>et al.</i> 2014
<i>Candidatus</i> Ishikawaella capsulatus (Gammaproteobacteria)	<i>Megacopta punctatissima</i> Japanese common plataspid stink bug	Fukatsu & Hosokawa 2002 Hosokawa <i>et al.</i> 2006
Soma-to-germline transmission		
<i>Candidatus</i> Portiera aleyrodidarum (Gammaproteobacteria)	<i>Aleurochiton aceris/Bemisia tabaci</i> White fly	Costa <i>et al.</i> 1996 Szklarzewicz & Moskal 2001
<i>Candidatus</i> Hamiltonella defensa (Gammaproteobacteria)		Gottlieb <i>et al.</i> 2008
<i>Candidatus</i> Kotejella greeniscae and <i>Arsenophonus</i> (Gammaproteobacteria)	<i>Greenisca brachypodii</i> Scale insect	Michalik <i>et al.</i> 2018
Chemosynthetic species unknown (Gammaproteobacteria)	<i>Calyptogena okutanii</i> Chemosynthetic clam	Ikuta <i>et al.</i> 2016
Chemosynthetic species unknown (Gammaproteobacteria)	<i>Solemya velum</i> Chemosynthetic clam	Russell <i>et al.</i> 2018
<i>Candidatus</i> Buchnera aphidicola and <i>Serratia</i> (Gammaproteobacteria)	<i>Acyrtosiphon pisum</i> Aphidicola pea aphid	Miura <i>et al.</i> 2003 Koga <i>et al.</i> 2012
<i>Candidatus</i> Riesia spp. (Gammaproteobacteria)	<i>Pthirus pubis/Pediculus schaeffi</i> Human/Chimpanzee lice	Allen <i>et al.</i> 2007
<i>Candidatus</i> Blattabacterium cuenoti (Bacteroidetes)	<i>Periplaneta americana, Blattella germanica</i> <i>/Mastotermes darwiniensis</i>	Sacchi <i>et al.</i> 1988 Bandi <i>et al.</i> 1995

	Cockroach/Termite	Lambiase <i>et al.</i> 1997
<i>Blochmannia floridanus</i> (Gammaproteobacteria)	<i>Camponotus floridanus</i> Carpenter ant	Stoll <i>et al.</i> 2010 Kupper <i>et al.</i> 2016
<i>Species unknown</i> (Yeast-like endosymbiont)	<i>Nilaparvata lugens</i> Stål Brown planthopper	Nan <i>et al.</i> 2016
<i>Candidatus Proffttella armatura</i> (Betaproteobacteria), <i>Candidatus Carsonella ruddii</i> (Gammaproteobacteria)	<i>Diaphorina citri</i> Asian citrus psyllid	Dan <i>et al.</i> 2017
<i>Candidatus Schneideria nysicola</i> (Gammaproteobacteria)	<i>Nysius plebeius</i> Stinkbug	Matsuura <i>et al.</i> 2012
<i>Candidatus Tremblaya princeps</i> (Gammaproteobacteria)	<i>Planococcus citri</i> Mealybug	Husnik <i>et al.</i> 2013
<i>Moranella endobia</i> (an endosymbiont of <i>Ca. Tremblaya princeps</i>)	<i>Planococcus citri</i> Mealybug	Husnik <i>et al.</i> 2013
<i>Spiroplasma</i> (Mollicutes)	Widespread in insects	Herren <i>et al.</i> 2013
<i>Candidatus Vallotia virida</i> (Betaproteobacteria)	<i>Adelges viridis</i> Adelgid aphid	Michalik <i>et al.</i> 2013
<i>Candidatus Rohrkolberia cinguli</i> (Gammaproteobacteria)	<i>Chilacis typhae</i> Bulrush bug	Kuechler <i>et al.</i> 2011
<i>Coxiella</i>	<i>Rhipicephalus turanicus</i>	Lalzar <i>et al.</i> 2014

(Gammaproteobacteria)	Tick	
<i>Wolbachia</i> (Alphaproteobacteria)	<i>Brugia malayi</i> Filarial nematode	Landmann <i>et al.</i> 2012 Foray <i>et al.</i> 2018
Continuous germline infection		
<i>Wolbachia</i> (Alphaproteobacteria)	<i>Drosophila willistoni</i> Fruit fly	Miller & Riegler 2006
<i>Candidatus Cardinium</i> (Bacteroidetes) and species unknown yeast-like symbionts	<i>Scaphoideus titanus</i> Leafhopper	Sacchi <i>et al.</i> 2008
<i>Candidatus Westeberhardia cardiocondylae</i> (Gammaproteobacteria)	<i>Cardiocondyla obscurior</i> Ant	Klein <i>et al.</i> 2016
Possibly (limited data): <i>Orientia tsutsugamushi</i> (<i>Rickettsia tsutsugamushi</i>) (Alphaproteobacteria)	<i>Leptotrombidium pallidum</i> Mite	Urakami <i>et al.</i> 1994

Additional References:

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- Rao, Q. *et al.* 2015. Genome reduction and potential metabolic complementation of the dual endosymbionts in the whitefly *Bemisia tabaci*. *BMC Genomics* 16, 226.

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