host - symbiont	common host name	Symbiont genome size (Mb)/ GC content (%)	symbiont location	transmission*	host life cycle stage in which infection occurs/entry site	References
Anthocerus punctatus - *Nostoc punctiforme*	hornwort	8.9/41.5%	extracellular, slime cavities of gametophyte thallus	H	gametophyte/ stomata-like openings	reviewed in Refs1,2
Gunnera spp. - *Nostoc punctiforme*	giant rhubarb	8.9/41.5%	intracellular, red gland	H	seedling/mucilage secreted by red gland at the base of each new leaf petiole	reviewed in Refs2,3
Leptochloa fusca - *Azoarcus* spp.	Kallar grass	4.3/68% (BH72 strain)	intracellular, stele	H	seedling stage throughout adulthood/ emergence points of lateral roots or elongation and differentiation zone of root tip	4 reviewed in Ref.5
Medicago truncatula - *Sinorhizobium meliloti; Lotus japonicus* - *Mesorhizobium loti; Vicia sativa* - *Rhizobium leguminosarum*	legume	3.6/62%; 7/62%; 4.5/61%	intracellular, indeterminate or determinate nodules	H	seedling stage throughout adulthood/ root hairs curling or epidermal cracks penetration	6, reviewed in 7-9
Riftia pachyptila - *Candidatus* Endoriftia persephone	giant tubeworm	3.3/60%	intracellular, mesodermal trophosome	H	larva/skin	10,11
Siboglinum poseidoni - methanotroph bacterium	beard worm	NA	intracellular, endodermal trophosome	H	larva/oral opening or anus	12
Riptortus clavatus - *Burkholderia*	broad-headed bug	NA	extracellular, midgut crypts	H	newborn nymph/oral opening	13
Codakia orbicularis - thiotroph *Gammaproteobacterium*	lucinid clam	NA	intracellular, ectodermal gills	H	juvenile/gill epithelium	14-16
Bathymodiolus ssp. - thiotroph *Gammaproteobacterium*	bathymodiolin mussel	1.9-2/34-38% (*B. thermophilus*)	intracellular, ectodermal gills	H	juvenile/gill epithelium	17-21
Euprymna scolopes - *Vibrio fischeri*	Hawaiian bobtail squid	4.2/38% (ES114 strain)	extracellular, light organ crypts	H	juvenile within 12 hr post-hatching/ pores on the surface of the developing light organ	22,23, reviewed in Ref.24
Danio rerio – complex consortium *Aeromonas* and *Pseudomonas* spp. dominating	zebrafish	NA	extracellular, gut lumen	H	larva, 1 day after oral opening disclosure/ oral opening	25
Azolla mexicana - simple consortium including *Anabaena azollae*	water fern	NA	extracellular, leaf cavitiy of dorsal lobe of bilobed leafs	Vm	during sexual sporulation, symbionts are transferred from the dorsal lobe of the leaf to developing sporocarps; inoculation chamber in metasporocarps	26,27
Halisarca dujardini - consortium, low-microbial-abundance (LMA)	sponge	NA	extracellular, mesohyl; intracellular in eggs, early embryos	Vm	embryo/ concentration of symbionts in blastocoel and uptake via endocytosis into eggs	28
Oscarella ssp. - consortium	sponge	NA	extracellular, mesohyl	Vm	early embryo (before follicle differentiation)/migration of symbionts to eggs	29
Hipposongia lachne, Spongia ssp. - consortium, high-microbial-abundance (HMA)	sponge	NA	extracellular, mesohyl	Vm	early embryo/incorporporation of symbionts via migration of symbionts along 'collagen-like' connections between nurse cells and embryo	30,31

Heterorhabditis bacteriophora - Photorhabdus luminescens	entomopathogenic nematode	5.7/43%	extracellular, gut lumen	Vm	infective juvenile/oral opening, symbionts from insect carcass	32,33
H. medicinalis/H. verdana - Aeromonas veronii biovar sobria, Rikenella-like Bacteroidetes	medical leech	4.7/58.5% (*Aeromonas veronii*)	extracellular, gut lumen	Vm	embryos in cocoon/oral opening (*A. veronii*)	34,35**
Calyptogena magnifica-Candidatus Ruthia magnifica*; C. okutanii-C. okutanii* symbiont	vesicomyid clam	1.2/34% (*Cand.* Ruthia magnifica); 1/32% (*C. okutanii* symbiont)	intracellular, ectodermal gills	Vm	embryo/follicle cells	36-39
Bankia setacea - Gammaproteobacterium	shipworm	NA	intracellular, ectodermal gills	Vm	egg/unknown	40
Eisenia foetida - Verminephrobacter eiseniae	earthworm	5.6/65%	extracellular, nephridial lumen	Vm	embryo in egg capsule/ transient dorsal pore and subepithelial canal in which symbiont migrate to ventral nephridiopores	41,42***
Sitophilus oryza - Sitophilus oryza principal symbiont (SOPE*)*	rice weevil	3/54%	intracellular, mesodermal bacteriome in caeca and female gonad	Vm	embryo/during development some symbionts goes in putative gonad, some in bacteriome	43-45
Pediculus humanus - Candiatus Riesia pediculicola	louse	NA	intracellular, endodermal bacteriome in gut	Vm	oocyte/posterior pole	46-48
Acrytosiphon pisum - Buchnera aphidicola	aphid	0.4-0.6/20-26% (APS,Sg,Bp,Cc strains)	intracellular, bacteriocytes in hemocoel	Vm	sexual egg or pathenogenetic embryo (*A. buchnera*)/posterior pole; embryo/blastocoel (other species)	49,50 reviewed in Refs51,52
Glossina morsitans - Wiggelsworthia glossinidia	tsetse fly	0.7/22%	intracellular, endodermal bacteriome in gut	Vm	larva/oral opening via infected milk	53,54
Blattella germanica, Periplaneta americana, Blatta orientalis - Bacteroidetes, Flavobacteria, Blattabacterium	cockroach	NA	intracellular, mesodermal bacteriocytes in fat body	Vm	oocyte/prior ovulation in adult	reviewed in Ref. 55
Chondrilla australiensis - complex consortium, including *Candidatus* Synechococcus spongiarum	sponge	NA	extracellular, mesohyl; intracellular in nurse cells, eggs, sperms	Vb + H*	early embryo/uptake of symbionts into nurse cells via endocytosis, infected nurse cells fuse with eggs	56,57
Ectyoplasia ferox - complex consortium, high microbial abundance (HMA)	sponge	NA	extracellular, mesohyl; intracellular in nurse cells	Vm + H*	nurse cells surrounding oocyte/unknown	58
Steinernema carpsocapsae - Xenorhabdus nematophila	entomopathogenic nematode	4.4/43-44%	extracellular, lumen between two anteriormost intestinal cells (vesicle)	PV + H*?	infective juvenile/oral opening, symbionts from nematode population in insect carcass	reviewed in Ref.59
Solemya reidi, S. velum - thiotroph *Gammaproteobacterium*	solemyid awning clam	ONGOING (*S. reidi*)	intracellular, ectodermal gills	Vm + H*	egg/unknown	60-63
Olavius and *Inanidrilus* spp.; *O. algarvensis* - simple consortium, including *Gammaproteobacteria* 1 and 3 and *Deltaproteobacteria* 1 and 4	marine gutless oligochaete	4.6-13.5 /49.2-57.5%	extracellular, subcuticular	Vm + H*?	egg/external smearing (*I. leukodermatus*)	64,65

Acrytosiphon pisum - Candidatus Hamiltonella defensa, *Candidatus* Serratia symbioticica, *Candidatus* Regiella insecticola	aphid	1.7/NA; (*Cand.* Hamiltonella defensa); ONGOING (*Cand.* Serratia symbioticica); NA (*Cand.* Regiella insecticola)	intracellular, mesodermal bacteriocytes	Vm (parthenogenesis); Vb (sexual) + H*	symbiont in ejaculate of potentially several males (including the father) but not in sperms	66,67
Drosophila melanogaster - Wolbachia pipientis	fruit fly	1.3/35% *(wMel* strain)	intracellular, reproductive tissue	Vm + H*	oocyte/via nurse or follicle cells	reviewed in Refs51,52, 68
Bemisia tabaci – Portierea aleyrodidarum, several other symbionts	sweet potato whitefly	NA	intracellular, mesodermal bacteriome	Vm + H*	oocyte/oocyte engulfes intact bacteriocytes	reviewed in Ref.69
Glossina morsitans - Sodalis glossinidius	tsetse fly	4/54%	intracellular, multiple tissues	Vm + H*	larva/oral opening via infected milk	54, 70,71
Bugula neritina - Candidatus Endobugula sertula	bryozoan	NA	extracellular, pallial sinus larva, funicular chords adult	Vm + H*	embryo/ most likely through funicular cords	72
Diplosoma simile - Prochloron didemni	didemnid ascidian	ONGOING	extracellular, cloacal cavity and peribranchial space	Vm + H*	unhatched larva (with rastrum)/NA	73
Didemnum molle - Prochloron didemni	didemnid ascidian	ONGOING	extracellular, cloacal cavity and peribranchial space	Vm + H*	hatched larva/NA	74
Lissoclinum bistratum - Prochloron didemni	didemnid ascidian	ONGOING	extracellular, cloacal cavity and peribranchial space	Vm + H*	unhatched larva/NA	75
Trididemnum miniatum - Prochloron didemni	didemnid ascidian	ONGOING	extracellular in tunic; intracellular in amoebocytes	Vm + H*	prehatching embryo/ in tunic, amoebocytes act as transport vehicles across epidermis and embryonic pouch	76
Homo sapiens – complex consortium, *Bacterioidetes* and *Firmicutes* dominating	human	6.3/42% (*Bacteroides thetaiatomicron*); 5.2 /42% (*Bacteroides vulgatus*); 4.8/48% (*Parabacteroides distasonis*)	extracellular, gut lumen	Vm + H	newbom to infant/oral opening (initial microbiota from the vagina and feces of their mothers, successively from food)	77 reviewed in Refs 78, 79

* H horizontal from environment, H* additional horizontal transmission (indicated by lack of cospeciation), Vm vertical maternal, Vb vertical biparental, PV pseudivertical
** Human Genome Meeting (HGM) 2005, Poster 158, Kurokawa et al.
***http://www.ncbi.nlm.nih.gov/sites/entrez?Db=genome&Cmd=ShowDetailView&TermToSearch=20277

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