

Table S3 - Genes of particular interest

Category	Gene	Function	<i>Riftia</i> 1 symbiont Genbank accession	<i>Riftia</i> 2 symbiont Genbank accession	<i>Tevnia</i> symbiont Genbank accession
<b>1. Sulfur metabolism</b>	<b>aprA</b>	Adenylylsulfate reductase, alpha subunit	Rifp1Sym_ej00110	Rifp2Sym_bz00020 <sup>1</sup> Rifp2Sym_bz00030	TevJSym_ag00880
	<b>aprB</b>	Adenylylsulfate reductase, beta subunit	Rifp1Sym_ej00100	Rifp2Sym_bz00040	TevJSym_ag00890
	<b>dsrA</b>	Dissimilatory sulfite reductase, alpha subunit	Rifp1Sym_am00340	Rifp2Sym_aa00430 <sup>1</sup> Rifp2Sym_aa00440	TevJSym_aw00210
	<b>dsrB</b>	Dissimilatory sulfite reductase, beta subunit	Rifp1Sym_am00350	Rifp2Sym_aa00410	TevJSym_aw00190
	<b>sopT</b>	ATP-sulfurylase	Rifp1Sym_cn00110	Rifp2Sym_az00240	TevJSym_ad01200
<b>2. Carbon metabolism</b>	<b>cbbM</b>	Ribulose-1,5-bisphosphate carboxylase/oxygenase	Rifp1Sym_at00130	Rifp2Sym_bi00210	TevJSym_aj00630
2.1 Calvin-Benson -Bassham cycle	<b>gapA*</b>	Glyceraldehyde-3-phosphate dehydrogenase	Rifp1Sym_dp00070	Rifp2Sym_ar00120	TevJSym_an00400
	<b>pgk*</b>	Phosphoglycerate kinase	Rifp1Sym_dp00060	Rifp2Sym_ar00110	TevJSym_an00390
	<b>prkB</b>	Phosphoribulokinase	Rifp1Sym_at00030	Rifp2Sym_bf00040 <sup>1</sup> Rifp2Sym_bf00050	TevJSym_aj00540
2.2 TCA cycle	<b>aclA</b>	ATP citrate lyase, alpha subunit	Rifp1Sym_bt00010	Rifp2Sym_br00020	TevJSym_az00180
	<b>aclB</b>	ATP citrate lyase, beta subunit	Rifp1Sym_bt00020	Rifp2Sym_aa00010 <sup>1</sup> Rifp2Sym_br00010	TevJSym_az00170
	<b>acnA</b>	Aconitate hydratase/aconitase A	Rifp1Sym_bt00040	Rifp2Sym_aa00030	TevJSym_az00150
	<b>icd</b>	Isocitrate dehydrogenase [NADP]	Rifp1Sym_bt00030	Rifp2Sym_aa00020	TevJSym_az00160
	<b>korA</b>	2-oxoglutarate oxidoreductase, alpha subunit <sup>2</sup>	Rifp1Sym_dm00080	Rifp2Sym_br00130	TevJSym_az00290
	<b>korB</b>	2-oxoglutarate oxidoreductase, beta subunit <sup>2</sup>	Rifp1Sym_aa00580	Rifp2Sym_an00050	TevJSym_bb00050
			Rifp1Sym_dm00070	Rifp2Sym_br00120	TevJSym_az00280
			Rifp1Sym_aa00590	Rifp2Sym_an00040	TevJSym_bb00040
	<b>korC</b>		Rifp1Sym_bp00060	Rifp2Sym_ab00610	TevJSym_ar00620
	<b>korD</b>	2-oxoglutarate oxidoreductase, delta subunit	Rifp1Sym_dm00090	Rifp2Sym_br00140	TevJSym_az00300
	<b>korG</b>	2-oxoglutarate oxidoreductase, gamma subunit	Rifp1Sym_dm00060	Rifp2Sym_br00110	TevJSym_az00270
	<b>gltA2</b>	citrate synthase I	Rifp1Sym_ax00310	Rifp2Sym_aq00120	TevJSym_bc00420
	<b>maeB</b>	malate dehydrogenase	Rifp1Sym_ax00320 <sup>1</sup>	Rifp2Sym_aq00110 <sup>1</sup>	TevJSym_bc00430
			Rifp1Sym_ax00330	Rifp2Sym_aq00100	
<b>sdhA</b>	Succinate dehydrogenase, flavoprotein subunit <sup>2</sup>	Rifp1Sym_dd00140	Rifp2Sym_ez00030	TevJSym_ah01000	
		Rifp1Sym_ax00360	Rifp2Sym_aq00070 <sup>1</sup> Rifp2Sym_aq00060	TevJSym_cj00010	
<b>sdhB</b>	succinate dehydrogenase iron-sulfur protein <sup>2</sup>	Rifp1Sym_dd00150	Rifp2Sym_ez00020	TevJSym_ah01010	
		Rifp1Sym_ax00370	Rifp2Sym_aq00050	TevJSym_cj00020	

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	<b>sdhC</b>	succinate dehydrogenase membrane anchor <sup>2</sup>	Rifp1Sym_dd00130	Rifp2Sym_ez00040	TevJSym_ah00990
			Rifp1Sym_ax00350	Rifp2Sym_aq00080	TevJSym_bc00450
	<b>sdhD</b>	succinate dehydrogenase cyt b subunit	Rifp1Sym_ax00340	Rifp2Sym_aq00090	TevJSym_bc00440
<b>3. Nitrogen metabolism</b>	<b>narG</b>	Respiratory nitrate reductase, alpha chain	Rifp1Sym_ak00460	Rifp2Sym_bt00080	TevJSym_ag00800
	<b>narH</b>	Respiratory nitrate reductase, beta chain	Rifp1Sym_ak00450	Rifp2Sym_bt00090	TevJSym_ag00790
	<b>narJ</b>	Respiratory nitrate reductase, delta chain	Rifp1Sym_ak00440	Rifp2Sym_bt00100	TevJSym_ag00780
	<b>narI</b>	Respiratory nitrate reductase, gamma chain	Rifp1Sym_ak00430	Rifp2Sym_bt00110	TevJSym_ag00770
	<b>napD</b>	Periplasmic nitrate reductase, subunit NapD	Rifp1Sym_ao00250	Rifp2Sym_bd00210	TevJSym_al00660
	<b>napA</b>	Periplasmic nitrate reductase, subunit NapA	Rifp1Sym_ao00240 <sup>1</sup> Rifp1Sym_ao00230	Rifp2Sym_bd00220	TevJSym_al00650
	<b>napG</b>	Periplasmic nitrate reductase, subunit NapG	Rifp1Sym_ao00220	Rifp2Sym_bd00230	TevJSym_al00640
	<b>napH</b>	Periplasmic nitrate reductase, subunit NapH	Rifp1Sym_ao00210	Rifp2Sym_bd00240	TevJSym_al00630
	<b>napB</b>	Periplasmic nitrate reductase, subunit NapB	Rifp1Sym_ao00200	Rifp2Sym_bd00240	TevJSym_al00620
	<b>napC</b>	Periplasmic nitrate reductase, subunit NapC	Rifp1Sym_ao00190	Rifp2Sym_bd00260	TevJSym_al00610
	<b>nirN</b>	Cytochrome cd1/nitrite reductase, subunit NirN	Rifp1Sym_cp00140	Rifp2Sym_db00140	TevJSym_bo00090
	<b>nirJ</b>	Cytochrome cd1/nitrite reductase, subunit NirJ	Rifp1Sym_cp00120 <sup>1</sup> Rifp1Sym_cp00130	Rifp2Sym_db00110	TevJSym_bo00100
	<b>nirH</b>	Cytochrome cd1/nitrite reductase, subunit NirH	Rifp1Sym_cp00110	Rifp2Sym_db00100	TevJSym_bo00110
	<b>nirG</b>	Cytochrome cd1/nitrite reductase, subunit NirG	Rifp1Sym_cp00090	Rifp2Sym_db00080	TevJSym_bo00130
	<b>nirL</b>	Cytochrome cd1/nitrite reductase, subunit NirL	Rifp1Sym_cp00080	Rifp2Sym_db00070	TevJSym_bo00140
	<b>nirD</b>	Cytochrome cd1/nitrite reductase, subunit NirD	Rifp1Sym_cp00070	Rifp2Sym_db00060	TevJSym_bo00150
	<b>nirF</b>	Cytochrome cd1/nitrite reductase, subunit NirF	Rifp1Sym_cp00060	Rifp2Sym_db00050	TevJSym_bo00160
	<b>nirC</b>	Cytochrome cd1/nitrite reductase, subunit NirC	Rifp1Sym_cp00050	Rifp2Sym_db00040	TevJSym_bo00170
	<b>nirT</b>	Cytochrome cd1/nitrite reductase, subunit NirT	Rifp1Sym_cp00030	n. a.	TevJSym_bo00190
	<b>nirS</b>	Cytochrome cd1/nitrite reductase, subunit NirS	Rifp1Sym_cp00020	Rifp2Sym_gn00030	TevJSym_bo00200
	<b>norB</b>	Nitric-oxide reductase subunit B	n. a.	Rifp2Sym_jh00010	TevJSym_cv00020
	<b>norC</b>	Nitric-oxide reductase subunit C	n. a.	Rifp2Sym_jh00030	TevJSym_cv00010
	<b>nosZ</b>	Nitrous-oxide reductase	Rifp1Sym_ag00460	Rifp2Sym_au00130 <sup>1</sup> Rifp2Sym_au00140	TevJSym_ac00130
<b>4. Storage compounds</b>	<b>cphA</b>	Cyanophycin synthase	Rifp1Sym_ah00040	Rifp2Sym_at00040	TevJSym_ay00040
<b>5. Oxidative stress response</b>	<b>ahpC</b>	Alkyl hydroperoxide reductase	Rifp1Sym_ai00550	Rifp2Sym_af00050	TevJSym_ah00580
	<b>sodB</b>	Superoxide dismutase [Fe]	Rifp1Sym_eb00070	Rifp2Sym_dw00080	TevJSym_an00790

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<b>6. Secretion systems</b>	<b>secA</b>	Preprotein translocase subunit SecA	Rifp1Sym_bc00080	Rifp2Sym_ax00280	TevJSym_aj00210
6.1 Secretion across the inner membrane	<b>secB</b>	Preprotein translocase subunit SecB	Rifp1Sym_cl00120	Rifp2Sym_as00170	TevJSym_at00230
	<b>secD</b>	Preprotein translocase subunit SecD	Rifp1Sym_cf00160	Rifp2Sym_ar00340	TevJSym_an00610
	<b>secE</b>	Preprotein translocase subunit SecE	Rifp1Sym_di00120	Rifp2Sym_dg00010	TevJSym_bu00110
	<b>secF</b>	Preprotein translocase subunit SecF	Rifp1Sym_cf00150	Rifp2Sym_ar00330	TevJSym_an00600
	<b>secG</b>	Preprotein translocase subunit SecG	Rifp1Sym_bl00190	Rifp2Sym_eh00010	TevJSym_ap00640
	<b>secY</b>	Preprotein translocase subunit SecY	Rifp1Sym_bd00210	Rifp2Sym_ce00130	TevJSym_aa00220
	<b>tatA</b>	Twin-arginine translocation protein TatA	Rifp1Sym_cq00210	Rifp2Sym_cb00170	TevJSym_bh00280
	<b>tatB</b>	Twin-arginine translocation protein TatB	Rifp1Sym_cq00220	Rifp2Sym_cb00180	TevJSym_bh00290
	<b>tatC</b>	Twin-arginine translocation protein TatC	Rifp1Sym_cq00230	Rifp2Sym_cb00190	TevJSym_bh00300
6.3 Secretion across the outer membrane	<b>exeA</b>	General secretion pathway protein A <sup>2</sup>	Rifp1Sym_aa00370	Rifp2Sym_an00280	TevJSym_ab01170
			Rifp1Sym_bk00170	Rifp2Sym_bh00210	TevJSym_ai00590
			Rifp1Sym_cw00170	Rifp2Sym_cf00120	TevJSym_bb00270
			Rifp1Sym_ee00070	Rifp2Sym_dq00020	TevJSym_bg00130
	<b>xpsD</b>	General secretion pathway protein D	Rifp1Sym_ah00230	Rifp2Sym_do00140	TevJSym_ay00270
	<b>outE</b>	General secretion pathway protein E	Rifp1Sym_bk00160	Rifp2Sym_bh00200	TevJSym_bg00140
	<b>xcpR</b>	General secretion pathway protein E	Rifp1Sym_ci00020	Rifp2Sym_be00150	TevJSym_av00370
	<b>xcpS</b>	General secretion pathway protein F	Rifp1Sym_ci00030	Rifp2Sym_be00160	TevJSym_av00380
<b>7. Horizontal gene transfer</b>	<b>traG</b>	IncF plasmid conjugative transfer protein TraG	Rifp1Sym_au00110	-	-
7.1 F-Type conjugative plasmid	<b>traH</b>	IncF plasmid conjugative transfer pilus assembly protein	Rifp1Sym_au00120	-	-
	<b>traF</b>	IncF plasmid conjugative transfer pilus assembly protein	Rifp1Sym_au00130	-	-
	<b>traN</b>	IncF plasmid conjugative transfer protein TraN	Rifp1Sym_au00140	-	-
	<b>trbC</b>	IncF plasmid conjugative transfer protein TrbC	Rifp1Sym_au00150	-	-
	<b>traU</b>	IncF plasmid conjugative transfer pilus assembly protein	Rifp1Sym_au00160	-	-
	<b>pat17</b>	Patatin-like phospholipase A2	Rifp1Sym_au00170	-	-
	<b>traC</b>	IncF plasmid conjugative transfer pilus assembly protein	Rifp1Sym_au00200	-	-
	<b>traV</b>	Conjugative transfer protein TraV	Rifp1Sym_au00210	-	-
	<b>traB</b>	IncF plasmid conjugative transfer pilus assembly protein	Rifp1Sym_au00230	-	-
	<b>traK</b>	IncF plasmid conjugative transfer pilus assembly protein	Rifp1Sym_au00240	-	-
	<b>traE</b>	Plasmid-like conjugative transfer protein TraE	Rifp1Sym_au00250	-	-
7.2 Transposases	-	IS5Y transposase	Rifp1Sym_al00300	Rifp2Sym_aw00230	TevJSym_bc00030
	-	IS5 transposase	Rifp1Sym_al00310	Rifp2Sym_aw00240	TevJSym_bc00040

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	-	Transposase insF for insertion sequence IS3	Rifp1Sym_bb00110	Rifp2Sym_dh00120	TevJSym_ab01630
	-	Transposase for IS1668	Rifp1Sym_bg00180	Rifp2Sym_bl00030	TevJSym_bf00240
	-	Transposase, IS4 family	Rifp1Sym_db00080	Rifp2Sym_jp00010	TevJSym_cx00010
<b>8. Possibly involved in host infection</b>	<b>fimT</b>	Type IV fimbrial biogenesis protein FimT	Rifp1Sym_aq00380	Rifp2Sym_ak00170	TevJSym_am00340
	<b>fimV</b>	Type IV pilus assembly protein FimV	Rifp1Sym_dy00020	Rifp2Sym_ab00080	TevJSym_ar00130
8.1 Adherence by type IV pili/fimbriae	<b>pilB</b>	Type IV fimbrial assembly protein PilB	Rifp1Sym_az00200	Rifp2Sym_ba00260	TevJSym_ai00290
	<b>pilE</b>	Type IV pilus biogenesis protein PilE	Rifp1Sym_an00070	Rifp2Sym_ak00100	TevJSym_am00410
	<b>pilG</b>	twitching motility protein PilG	Rifp1Sym_cb00050	Rifp2Sym_cj00200	TevJSym_bn00040
	<b>pilH</b>	twitching motility protein PilH	Rifp1Sym_cb00040	Rifp2Sym_cj00210	TevJSym_bn00030
	<b>pilM</b>	Type IV pilus biogenesis protein PilM	Rifp1Sym_aa00490	Rifp2Sym_an00140	TevJSym_bb00140
	<b>pilN</b>	Type IV pilus biogenesis protein PilN	Rifp1Sym_aa00480	Rifp2Sym_an00150	TevJSym_bb00150
	<b>pilQ</b>	Type IV pilus biogenesis protein PilQ	Rifp1Sym_aa00450	Rifp2Sym_an00180	TevJSym_bb00180
	<b>pilR</b>	Type IV fimbriae expression regulatory protein PilR	Rifp1Sym_az00160	Rifp2Sym_ba00220	TevJSym_ai00250
	<b>pilS</b>	Sensor protein PilS	Rifp1Sym_az00150	Rifp2Sym_ba00210	TevJSym_ai00240
	<b>pilT</b>	Twitching mobility protein PilT	Rifp1Sym_aq00280	Rifp2Sym_ak00290	TevJSym_am00210
	<b>pilV</b>	Type IV pilus modification protein PilV	Rifp1Sym_aq00390	Rifp2Sym_ak00160	TevJSym_am00350
	<b>pilY</b>	Type IV fimbrial biogenesis protein PilY	Rifp1Sym_an00030 <sup>1</sup> Rifp1Sym_an00040 Rifp1Sym_an00050	Rifp2Sym_ak00120 <sup>1</sup> Rifp2Sym_ak00130	TevJSym_am00390
	<b>pilZ</b>	Type IV pilus assembly PilZ	Rifp1Sym_ax00100	Rifp2Sym_aq00310	TevJSym_bc00220
	<b>mshL</b>	Pilus (MSHA Type) biogenesis protein MshL	Rifp1Sym_bk00190	Rifp2Sym_bh00230	TevJSym_bg00100
8.2 Adherence by flagellum	<b>flaG</b>	Flagellin protein FlaG	Rifp1Sym_fp00070	Rifp2Sym_bk00240	TevJSym_aa01600
	<b>fleN</b>	Flagellar synthesis regulator FleN	Rifp1Sym_am00080	Rifp2Sym_aa00690	TevJSym_aw00490
	<b>flgA</b>	Flagellar basal-body P-ring formation protein FlgA	Rifp1Sym_bw00270	Rifp2Sym_aj00140	TevJSym_aa01200
	<b>flgE</b>	Flagellar hook protein FlgE	Rifp1Sym_bw00220	Rifp2Sym_aj00100	TevJSym_aa01250
	<b>flgF</b>	Flagellar basal-body rod protein FlgF	Rifp1Sym_bw00210	Rifp2Sym_aj00090	TevJSym_aa01260
	<b>flgH</b>	Flagellar L-ring protein FlgH	Rifp1Sym_bw00190	Rifp2Sym_aj00070	TevJSym_aa01280
	<b>flhA</b>	Flagellar biosynthesis protein FlhA	Rifp1Sym_am00060	Rifp2Sym_aa00720	TevJSym_aw00510
	<b>fliA</b>	RNA polymerase sigma factor for flagellar operon	Rifp1Sym_am00090	Rifp2Sym_aa00680	TevJSym_aw00480
	<b>fliD</b>	Flagellar hook-associated protein 2	Rifp1Sym_fp00060	Rifp2Sym_bk00250	TevJSym_aa01610
	<b>fliG</b>	Flagellar motor switch protein FliG	Rifp1Sym_cx00180	Rifp2Sym_cm00100	TevJSym_ac00750
	<b>fliJ</b>	Flagellar protein FliJ	Rifp1Sym_ck00160	Rifp2Sym_cm00060	TevJSym_ac00720
	<b>fliM</b>	Flagellar motor switch protein FliM	Rifp1Sym_ct00010	Rifp2Sym_aa00790	TevJSym_aw00580

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8.3 Cell attachment	<b>motA</b>	Flagellar motor rotation protein motA	Rifp1Sym_am00130	Rifp2Sym_aa00640	TevJSym_aw00430
	<b>motB</b>	Flagellar motor rotation protein motB	Rifp1Sym_am00140	Rifp2Sym_aa00630	TevJSym_aw00420
	-	Flagellar hook-length control protein	Rifp1Sym_da00090	Rifp2Sym_ay00290	TevJSym_ac01170
	-	Outer membrane adhesin-like protein	Rifp1Sym_gp00020	Rifp2Sym_fz00070	TevJSym_ae00280
	-	Hyalin	Rifp1Sym_bg00190	Rifp2Sym_bl00010 <sup>1</sup> Rifp2Sym_bl00020	TevJSym_bf00250
	-	Fibronectin Type III domain protein	Rifp1Sym_bo00250	Rifp2Sym_al00110 <sup>1</sup> Rifp2Sym_al00120	TevJSym_au00400
8.4 Cell permeabilization	-	Cell wall associated biofilm protein	Rifp1Sym_ah00020	Rifp2Sym_at00010 <sup>1</sup> Rifp2Sym_at00020	TevJSym_ay00010
	<b>hlyIII</b>	Hemolysin III-like protein	Rifp1Sym_bh00190	Rifp2Sym_ab00180	TevJSym_ar00200
	<b>hlyD</b>	Type I secretion protein, HlyD family	Rifp1Sym_ac00300	Rifp2Sym_hb00070	TevJSym_bj00240
	<b>kamA</b>	Lysine 2,3-aminomutase	Rifp1Sym_ey00040	Rifp2Sym_ar00010	TevJSym_an00300
	<b>cvpA</b>	Colicin V production protein	Rifp1Sym_av00210	Rifp2Sym_ci00100	TevJSym_av00130