Table S38. List of the annotated motility-associated genes.

A : Flagella-related genes

GENE ID	GENE NAME	FUNCTION
S5_genome_330	fliY	Cystine-binding periplasmic protein
S5_genome_628	motA	Reponse regulator receiver domain
S5_genome_629	motB	Flagellar motor protein
S5_genome_1770	FlgF	flagellar basal body rod protein FlgF
S5_genome_1771	flgG	Gene function: The basal body constitutes a major portion of the flagellar organelle and consists of four rings (L,P,S, and M) mounted on a central rod. The rod consists of about 26 subunits of FlgG in the distal portion, and FlgB, FlgC and FlgF are thought to build up the proximal portion of the rod with about 6 subunits each.
S5_genome_1772	flgH	Assembles around the rod to form the L-ring and probably protects the motor/basal body from shearing forces during rotation.
S5_genome_1773	flgI	Assembles around the rod to form the L-ring and probably protects the motor/basal body from shearing forces during rotation.
S5_genome_1774	flgJ	flagellar rod assembly protein
S5_genome_1775	flgK	Involved in flagellum assembly and cell motility
S5_genome_1776	flgL	flagellar rod assembly protein
S5_genome_1786	pseB	
S5_genome_1788	pseF	Catalyzes the final step in the biosynthesis of pseudaminic acid, a sialic-acid-like sugar that is used to modify flagellin. Mediates the activation of pseudaminic acid with CMP by forming CMP-pseudaminic acid (By similarity). .
S5_genome_1789	pseG	Nucleotide sugar hydrolase that catalyzes the fourth step in the biosynthesis of pseudaminic acid, a sialic-acid-like sugar that is used to modify flagellin. Mediates the removal of UDP from C-1 of UDP-2,4-diacetamido-2,4,6-trideoxy-beta-L-altropyranose forming

		2,4-diacetamido-2,4,6-trideoxy-beta-L-altropyranose.
S5_genome_1790	pseI	Pseudaminic acid synthase: Catalyzes the fifth step in the biosynthesis of pseudaminic acid, a sialic-acid-like sugar that is used to modify flagellin. Catalyzes the condensation of phosphoenolpyruvate with 2,4-diacetamido-2,4,6-trideoxy-beta-l-altropyranose, forming pseudaminic acid. .
S5_genome_1792	maf2	putative membrane protein
S5_genome_1795	flaG	flagellar protein FlaG
S5_genome_1796	fliD	flagellar hook protein FliD
S5_genome_1794	hag	flagellin
S5_genome_1797	fliS	flagellar biosynthesis protein FliS
S5_genome_1798	fliT	flagellar assembly protein FliT
S5_genome_1802	fliE	flagellar hook-basal body protein FliE
S5_genome_1803	fliF	flagellar M-ring protein
S5_genome_1804	fliG	flagellar motor switch protein
S5_genome_1805	fliH	flagellar assembly protein FliH
S5_genome_1806	fliI	Flagellum-specific ATP synthase
S5_genome_1807	fliJ	flagellar biosynthesis chaperone
S5_genome_1811	fliK	flagellar hook-length control protein
S5_genome_1812	fliL	flagellar basal body protein FliL
S5_genome_1813	fliM	Flagellar motor switch protein
S5_genome_1814	fliN	FliN is one of three proteins (FliG, FliN, FliM) that form the rotor-mounted switch complex (C ring), located at the base of the basal body. This complex interacts with the CheY and CheZ chemotaxis proteins, in addition to contacting components of the motor that determine the direction of flagellar rotation (By similarity).
S5_genome_1815	fliO	Involved in flagellar biosynthesis and adherence. May have a role in assisting the proper localization of the various flagellar components and in the localization and assembly of the adhesin
S5_genome_1816	fliP	Flagellar biosynthetic protein FliP
S5_genome_1817	fliQ	flagellar biosynthesis protein FliQ
S5_genome_1818	fliR	flagellar motor protein
S5_genome_1819	flhB	Flagellar biosynthetic protein

S5_genome_1820	flhA	Flagellar biosynthesis protein
S5_genome_1821	flhF	Necessary for flagella biosynthesis. May be involved in translocation of the flagellum
S5_genome_1823	fliA	This sigma factor controls the expression of flagella-related genes. Sigma factors are initiation factors that promote the attachment of RNA polymerase to specific initiation sites and are then released.
S5_genome_1828	motA	flagellar motor protein
S5_genome_1829	motB	flagellar motor protein
S5_genome_4569	flgE	flagellar hook protein FlgE
S5_genome_4570	flgD	flagellar basal body rod modification protein FlgD
S5_genome_4571	flgC	flagellar basal body rod protein FlgC
S5_genome_4572	flgB	flagellar basal body rod protein FlgB
S5_genome_4575	flgA	Flagella basal body P-ring formation protein FlgA
S5_genome_4576	FlgM	flagellar biosynthesis anti-sigma factor FlgM
S5_genome_4577	FlgN	flagellar biosynthesis protein FlgN
S5_genome_4578	ygcR	flagellar brake protein YcgR
S5_genome_5834	no_name	cysteine ABC transporter substrate-binding protein

B : Pilus-related genes

GENE ID	GENE NAME	FUNCTION
S5_genome_518	pilM	
S5_genome_519	pilN	pilus assembly protein PilN
S5_genome_520	pilO	type IV pilus biogenesis protein PilO
S5_genome_521	pilP	pilus assembly protein PilP
S5_genome_521	pilQ	type IV pilus biogenesis protein PilQ
S5_genome_756	cpaF	pilus assembly protein
S5_genome_757	cpaA	pilus assembly protein, protease CpaA
S5_genome_764	cpaE	pilus assembly protein CpaE
S5_genome_765	cpaF	
S5_genome_767	no_name	pilin; Flp/Fap pilin component family protein
S5_genome_766	cpaB	pilus assembly protein CpaB
S5_genome_1619	cupB1	type I plus biogensis protein cupB1
S5_genome_1621	htrE ?	Part of the yadCKLM-htrE-yadVN fimbrial operon. Could contribute to adhesion to various surfaces in specific environmental niches. Probably involved in the export and assembly of fimbrial subunits across the outer membrane.
S5_genome_4011	no_name	type I pilus usher pathway chaperone CsuC
S5_genome_4437	htrE	Part of the yadCKLM-htrE-yadVN fimbrial operon. Could contribute to adhesion to various surfaces in specific environmental niches. Probably involved in the export and assembly of fimbrial subunits across the outer membrane.

S5_genome_4938	pilF	pilus assembly protein PilW
S5_genome_5238	pilA	fimbrial protein
S5_genome_5239	pilC	Type IV pilus assembly protein pilC
S5_genome_5240	pilD	Type 4 prepilin-like proteins leader peptide-processing enzyme
S5_genome_5261	pilR	type 4 fimbriae expression regulatory protein PilR
S5_genome_5262	pilE	type IV pilus biogenesis protein
S5_genome_5263	-	type IV pilus-associated protein
S5_genome_5264	pilX	pilus assembly protein PilX
S5_genome_5265	pilW	pilus assembly protein PilW
S5_genome_5266	pilV	pilus assembly protein PilV
S5_genome_5747	no_name	sensor histidine kinase (part of the two component system)
S5_genome_5748	pilJ	protein pilJ
S5_genome_5749	pilI	type IV pilus biogenesis protein PilI
S5_genome_5750	pilH	gene function: type IV pilus response regulator/twitching mobility protein
S5_genome_5751	pilG	pilus assembly protein PilG
S5_genome_5761	pilT	Twitching motility protein

C : Swarming-related specific genes

GENE ID	GENE NAME	FUNCTION
S5_genome_1579	rssA	
S5_genome_2958	yneE	swarming motility YneE
S5_genome_3916	rssA2	swarming motility regulation sensor protein RssA