

Table 4. Machinery for genome evolution in *M. smithii*

	ORF	ANNOTATION
Restriction-Modification System Subunits	MSM0157	predicted type I restriction-modification enzyme, subunit S
	MSM0158	type I restriction-modification system methylase, subunit S
	MSM1187	predicted type III restriction enzyme
	MSM1217	type II restriction endonuclease
	MSM1743	predicted type II restriction enzyme, methylase subunit
	MSM1744	predicted type II restriction enzyme, methylase subunit
	MSM1745	predicted type II restriction enzyme, methylase subunit
	MSM1746	predicted type II restriction enzyme, methylase subunit
	MSM1747	predicted type II restriction enzyme, methylase subunit
	MSM1748	predicted type II restriction enzyme, methylase subunit
	MSM1752	predicted restriction endonuclease
Recombination/Repair	MSM0023	uncharacterized protein predicted to be involved in DNA repair
	MSM0097	Mg-dependent DNase, TatD
	MSM0120	purine NTPase involved in DNA repair, Rad50
	MSM0121	DNA repair exonuclease (SbcD/Mre11-family), Rad32
	MSM0163	conserved hypothetical protein predicted to be involved in DNA repair
	MSM0164	conserved hypothetical protein predicted to be involved in DNA repair
	MSM0167	conserved hypothetical protein predicted to be involved in DNA repair
	MSM0168	conserved hypothetical protein predicted to be involved in DNA repair
	MSM0170	conserved hypothetical protein predicted to be involved in DNA repair
	MSM0405	predicted metal-dependent DNase, TatD-related family
	MSM0416	Mg-dependent DNase, TatD-related
	MSM0524	DNA mismatch repair ATPase, MutS
	MSM0543	DNA repair photolyase, SplB
	MSM0611	DNA repair protein, RadB
	MSM0693	ATPase involved in DNA repair, SbcC
	MSM0695	DNA repair helicase
	MSM0725	DNA repair flap structure-specific 5'-3' endonuclease
	MSM1193	single-stranded DNA-specific exonuclease, DHH family
	MSM1333	DNA repair protein RadA, RadA
	MSM1500	ssDNA exonuclease, RecJ
MSM1640	DNA integrase/recombinase, phage integrase family	
MSM1761	predicted ATPase involved in DNA repair	
IS elements	MSM0527	IS element ISM1 (ICSNY family)
	MSM0528	IS element ISM1 (ICSNY family)
	MSM0532	IS element ISM1 (ICSNY family)
	MSM0533	IS element ISM1 (ICSNY family)
	MSM0534	IS element ISM1 (ICSNY family)
	MSM1518	IS element ISM1 (ICSNY family)
	MSM1519	IS element ISM1 (ICSNY family)
	MSM1520	IS element ISM1 (ICSNY family)
Transposases or remnants of transposases	MSM0008	putative transposase
	MSM0087	putative transposase
	MSM0110	predicted transposase
	MSM0230	putative transposase
	MSM0256	putative transposase
	MSM0342	putative transposase
	MSM0396	putative transposase
	MSM0458	transposase, homeodomain-like superfamily
	MSM0460	predicted transposase
	MSM0601	putative transposase
	MSM0629	putative transposase
	MSM0730	putative transposase
	MSM0871	putative transposase
	MSM1093	putative transposase
	MSM1115	putative transposase
	MSM1189	putative transposase
	MSM1419	putative transposase
	MSM1523	transposase
	MSM1566	putative transposase
	MSM1588	predicted transposase
MSM1589	predicted transposase, RNaseH-like family	
MSM1596	putative transposase	