

Micromonospora is a normal occupant of actinorhizal nodules

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Supplementary material

Supplementary table 1. Number of isolates per nodule

	Nodule	Colonies	Average		Nodule	Colonies	Average
AV1	Nodule 1	2	1.3	EEM	Nodule 1	17	9.4
	Nodule 2	0			Nodule 2	13	
	Nodule 3	2			Nodule 3	9	
AV2	Nodule 1	19	16.1		Nodule 4	7	
	Nodule 2	25		Nodule 5	18		
	Nodule 3	38		Nodule 6	4		
AV4	Nodule 1	8	14.0		Nodule 7	12	
	Nodule 2	23		Nodule 8	8		
	Nodule 3	11		Nodule 9	13		
AG	Nodule 1	217	45.8		Nodule 10	2	
	Nodule 2	26			Nodule 11	0	
	Nodule 3	95		EV	Nodule 1	30	16.0
	Nodule 4	26			Nodule 2	7	
	Nodule 5	33			Nodule 3	42	
	Nodule 6	12			Nodule 4	0	
	Nodule 7	11			Nodule 5	5	
	Nodule 8	33			Nodule 6	2	
	Nodule 9	29			Nodule 7	0	
	Nodule 10	24			Nodule 8	0	
	Nodule 11	22			Nodule 9	58	
Nodule 12	22		Nodule 1		63		
AGM	Nodule 1	21	5.4		HRF	Nodule 2	
	Nodule 2	31		Nodule 3		52	
	Nodule 3	3		Nodule 4		37	
	Nodule 4	0		Nodule 5		7	
	Nodule 5	0		Nodule 6		5	
	Nodule 6	0		MPT		Nodule 1	1

	Nodule 7	0		Nodule 2	0	
	Nodule 8	0		Nodule 3	0	
	Nodule 9	3		Nodule 4	2	
	Nodule 10	1		Nodule 5	4	
	Nodule 11	0		Nodule 6	1	
MG3	Nodule 1	1	0.2	Nodule 7	0	
	Nodule 2	0		Nodule 8	1	
	Nodule 3	0		Nodule 9	1	
	Nodule 4	0		Nodule 10	1	
	Nodule 5	1		CMA	Nodule 1	0.8
	Nodule 6	0		Nodule 2	3	
	Nodule 7	0		Nodule 3	0	
	Nodule 8	0		Nodule 4	0	
	Nodule 9	0		Total	1247	1.3
	Nodule 10	0				
	Nodule 11	0				
MG40	Nodule 1	2	1.0			
	Nodule 2	1				
	Nodule 3	0				

AV: *Alnus viridis* (tree 1, 2 or 4); AG: *Alnus glutinosa* (Montellier); AGM: *Alnus glutinosa* (Mimizan); MG3: *Myrica gale* (Trois-Rivières); MG40: *Myrica gale* (Maskinonge); EEM: *Elaeagnus ebbingei* (Mimizan); EV: *Elaeagnus ebbingei* (Villeurbanne); HRF: *Hippophae rhamnoides*; MPT: *Morella pensylvanica*; CMA: *Coriaria myrtifolia*.

Supplementary table 2. Isolates from this study and percentage of identity with closest type strains

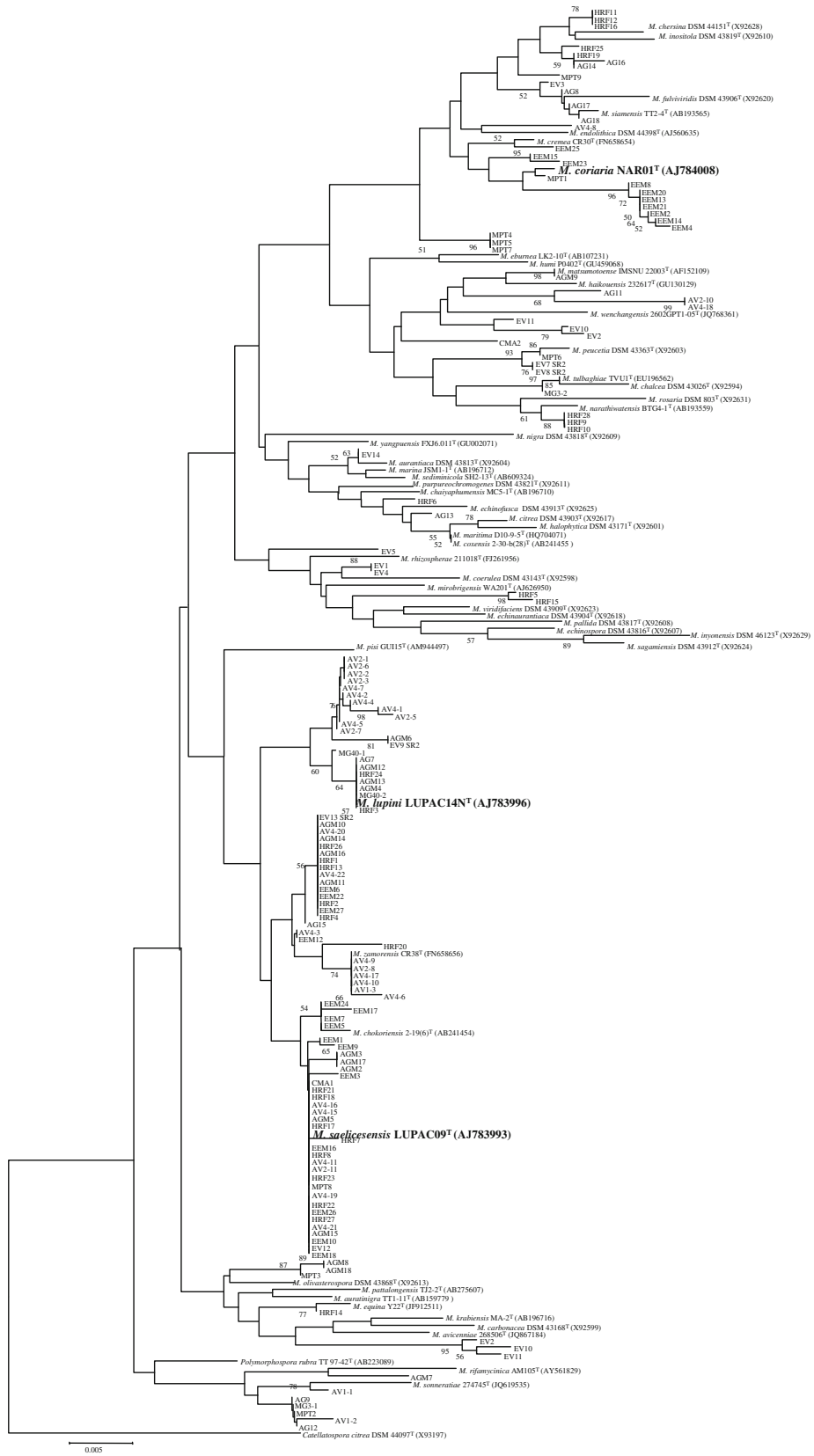
Strain	Nodule	ID	Percentage of identity	Mismatches
AV1-1	1	<i>M. pisi</i>	98.88	5/448
AV1-2	1	<i>M. rifamycinica</i>	98.57	6/419
AV1-3	3	<i>M. saelicesensis</i>	99.10	4/442
AV2-1	1	<i>M. lupini</i>	99.33	3/454
AV2-2	1	<i>M. lupini</i>	99.33	3/451
AV2-3	1	<i>M. lupini</i>	99.33	3/451
AV2-5	1	<i>M. chokoriensis</i>	98.12	8/443
AV2-6	1	<i>M. lupini</i>	99.33	3/451
AV2-7	1	<i>M. saelicesensis</i>	98.87	5/442
AV2-8	1	<i>M. saelicesensis</i>	99.10	4/443
AV2-10	1	<i>M. matsumotoense</i>	97.79	10/453
AV2-11	2	<i>M. saelicesensis</i>	100	0/443
AV4-1	1	<i>M. chokoriensis</i>	98.50	7/443
AV4-2	2	<i>M. lupini</i>	99.33	3/450
AV4-3	1	<i>M. saelicesensis</i>	99.55	2/443
AV4-4	1	<i>M. lupini</i>	99.33	3/450
AV4-5	1	<i>M. lupini</i>	99.33	3/450
AV4-6	2	<i>M. saelicesensis</i>	98.64	6/440
AV4-7	2	<i>M. lupini</i>	99.33	3/450
AV4-8	3	<i>M. coriariae</i>	98.48	7/461

AV4-9	3	<i>M. saelicesensis</i>	99.10	4/443
AV4-10	3	<i>M. saelicesensis</i>	99.10	4/443
AV4-11	3	<i>M. saelicesensis</i>	100	0/443
AV4-15	2	<i>M. saelicesensis</i>	100	0/443
AV4-16	2	<i>M. saelicesensis</i>	100	0/443
AV4-17	2	<i>M. saelicesensis</i>	99.10	4/443
AV4-18	2	<i>M. matsumotoense</i>	97.79	10/453
AV4-19	3	<i>M. saelicesensis</i>	100	0/443
AV4-20	3	<i>M. saelicesensis</i>	99.32	3/443
AV4-21	3	<i>M. saelicesensis</i>	100	0/443
AV4-22	3	<i>M. saelicesensis</i>	99.32	3/443
AG2	1	<i>M. lupini</i>	100	0/433
AG3	1	<i>M. siamensis</i>	100	0/433
AG4	1	<i>M. saelicesensis</i>	99.77	1/442
AG5	2	<i>M. coxensis</i>	99.32	3/443
AG7	4	<i>M. lupini</i>	100	0/451
AG8	3	<i>M. siamensis</i>	100	0/397
AG9	3	<i>P. mayteni</i>	98.53	6/410
AG11	4	<i>M. cremea</i>	98.23	8/453
AG12	4	<i>P. mayteni</i>	98.54	6/409
AG13	11	<i>M. coxensis</i>	99.35	3/451
AG14	11	<i>M. siamensis</i>	99.50	2/397
AG15	9	<i>M. saelicesensis</i>	99.55	2/442
AG16	12	<i>M. siamensis</i>	99.00	4/401
AG17	12	<i>M. siamensis</i>	100	0/497
AG18	12	<i>M. siamensis</i>	100	0/497
AGM2	1	<i>M. saelicesensis</i>	99.77	1/443
AGM3	1	<i>M. saelicesensis</i>	99.77	1/443
AGM4	1	<i>M. lupini</i>	100	0/451
AGM5	1	<i>M. saelicesensis</i>	100	0/443
AGM6	1	<i>M. lupini</i>	99.33	3/451
AGM7	1	<i>P. mayteni</i>	98.29	7/410
AGM8	3	<i>M. olivasterospora</i>	98.65	6/445
AGM9	3	<i>M. matsumotoense</i>	100	0/453
AGM10	10	<i>M. saelicesensis</i>	99.32	3/443
AGM11	10	<i>M. saelicesensis</i>	99.32	3/443
AGM12	2	<i>M. lupini</i>	100	0/451
AGM13	2	<i>M. lupini</i>	100	0/451
AGM14	2	<i>M. saelicesensis</i>	99.32	3/443
AGM15	2	<i>M. saelicesensis</i>	100	0/443
AGM16	2	<i>M. saelicesensis</i>	99.32	3/443
AGM17	2	<i>M. saelicesensis</i>	99.77	1/443
AGM18	3	<i>M. olivasterospora</i>	98.66	6/447
MG3-1	1	<i>P. mayteni</i>	98.54	6/410
MG3-2	5	<i>M. tulbaghia</i>	100	0/383
MG40-1	1	<i>M. lupini</i>	99.78	1/451
MG40-2	1	<i>M. lupini</i>	100	0/451
EEM1	9	<i>M. saelicesensis</i>	100	0/442
EEM2	9	<i>M. coriariae</i>	98.89	5/451
EEM3	1	<i>M. saelicesensis</i>	99.77	1/443

EEM4	1	<i>M. coriariae</i>	98.68	6/453
EEM5	1	<i>M. saelicesensis</i>	99.77	1/443
EEM6	9	<i>M. saelicesensis</i>	99.32	3/443
EEM7	1	<i>M. saelicesensis</i>	99.77	1/443
EEM8	1	<i>M. coriariae</i>	98.89	5/452
EEM9	1	<i>M. saelicesensis</i>	99.77	1/443
EEM10	1	<i>M. saelicesensis</i>	99.77	1/442
EEM12	2	<i>M. saelicesensis</i>	98.55	2/443
EEM13	2	<i>M. coriariae</i>	98.90	5/453
EEM14	2	<i>M. coriariae</i>	98.89	5/453
EEM15	2	<i>M. coriariae</i>	99.56	2/452
EEM16	2	<i>M. saelicesensis</i>	100	0/443
EEM17	2	<i>M. saelicesensis</i>	99.55	2/442
EEM18	2	<i>M. saelicesensis</i>	100	0/442
EEM20	3	<i>M. coriariae</i>	98.90	5/453
EEM21	3	<i>M. coriariae</i>	98.89	5/452
EEM22	3	<i>M. saelicesensis</i>	99.32	3/443
EEM23	3	<i>M. coriariae</i>	99.31	3/433
EEM24	3	<i>M. saelicesensis</i>	99.77	1/433
EEM25	3	<i>M. cremea</i>	99.54	2/433
EEM26	3	<i>M. saelicesensis</i>	100	0/433
EEM27	3	<i>M. saelicesensis</i>	99.31	3/433
EV1	1	<i>M. mirobrigensis</i>	98.67	6/451
EV2	1	<i>M. matsumotoense</i>	98.43	7/452
EV3	1	<i>M. siamensis</i>	99.75	1/396
EV4	1	<i>M. mirobrigensis</i>	98.67	6/450
EV5	2	<i>M. coxensis</i>	98.00	9/450
EV7	3	<i>M. peucetia</i>	99.55	2/445
EV8	3	<i>M. peucetia</i>	99.55	2/445
EV9	5	<i>M. lupini</i>	99.33	3/449
EV10	5	<i>M. matsumotoense</i>	98.23	8/451
EV11	5	<i>M. auratinigra</i>	98.00	9/451
EV12	9	<i>M. saelicesensis</i>	100	0/441
EV13	9	<i>M. saelicesensis</i>	99.32	3/441
EV14	9	<i>M. aurantiaca</i>	100	0/433
EV15	9	<i>M. matsumotoense</i>	98.67	6/452
EV16	9	<i>M. chaiyaphumensis</i>	98.14	8/431
EV17	9	<i>M. equina</i>	98.02	8/404
EV18	9	<i>M. coerulea</i>	98.41	7/441
HRF1	2	<i>M. saelicesensis</i>	99.31	3/433
HRF2	2	<i>M. saelicesensis</i>	99.31	3/433
HRF3	2	<i>M. lupini</i>	100	0/430
HRF4	2	<i>M. saelicesensis</i>	99.31	3/433
HRF5	2	<i>M. chaiyaphumensis</i>	98.15	8/432
HRF6	2	<i>M. coxensis</i>	99.31	3/432
HRF7	2	<i>M. saelicesensis</i>	99.77	1/433
HRF8	3	<i>M. saelicesensis</i>	100	0/433
HRF9	3	<i>M. naratiwatensis</i>	99.54	2/433
HRF10	3	<i>M. narathiwatensis</i>	99.54	2/433
HRF11	3	<i>M. chersina</i>	99.31	3/433

HRF12	4	<i>M. chersina</i>	99.31	3/433
HRF13	4	<i>M. saelicesensis</i>	99.31	3/433
HRF14	4	<i>M. equina</i>	99.75	1/405
HRF15	4	<i>M. viridifaciens</i>	97.79	9/408
HRF16	5	<i>M. chersina</i>	99.31	3/433
HRF17	5	<i>M. saelicesensis</i>	100	0/433
HRF18	5	<i>M. saelicesensis</i>	100	0/433
HRF19	5	<i>M. siamensis</i>	99.50	2/397
HRF20	5	<i>M. saelicesensis</i>	98.85	5/433
HRF21	5	<i>M. saelicesensis</i>	100	0/433
HRF22	5	<i>M. saelicesensis</i>	100	0/433
HRF23	5	<i>M. saelicesensis</i>	100	0/433
HRF24	5	<i>M. lupini</i>	100	0/431
HRF25	6	<i>M. siamensis</i>	99.20	3/397
HRF26	6	<i>M. saelicesensis</i>	99.31	3/433
HRF27	6	<i>M. saelicesensis</i>	100	0/433
HRF28	6	<i>M. narathiwatensis</i>	99.54	2/433
MPT1	1	<i>M. coriariae</i>	99.77	1/443
MPT2	4	<i>P. mayteni</i>	98.54	6/410
MPT3	4	<i>M. olivasterospora</i>	99.05	4/419
MPT4	5	<i>M. cremea</i>	99.31	3/433
MPT5	5	<i>M. cremea</i>	99.31	3/433
MPT6	5	<i>M. peucetia</i>	99.77	1/433
MPT7	5	<i>M. cremea</i>	99.31	3/433
MPT8	9	<i>M. saelicesensis</i>	100	0/433
MPT9	10	<i>M. cremea</i>	98.85	5/433
CMA1	2	<i>M. saelicesensis</i>	100	0/433
CMA2	2	<i>M. peucetia</i>	98.31	7/415

AV: *Alnus viridis* (tree 1, 2 or 4); AG: *Alnus glutinosa* (Montellier); AGM: *Alnus glutinosa* (Mimizan); MG3: *Myrica gale* (Trois-Rivières); MG40: *Myrica gale* (Maskinonge); EEM: *Elaeagnus ebbingei* (Mimizan); EV: *Elaeagnus ebbingei* (Villeurbanne); HRF: *Hippophae rhamnoides*; MPT: *Morella pensylvanica*; CMA: *Coriaria myrtifolia*..



Supplementary figure 1. Phylogenetic tree of partial 16S rRNA gene analysed by neighbour-joining method.