Supplemental Material to:

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Use of the computer-retargeted group II intron RmInt1 of *Sinorhizobium meliloti* for gene targeting

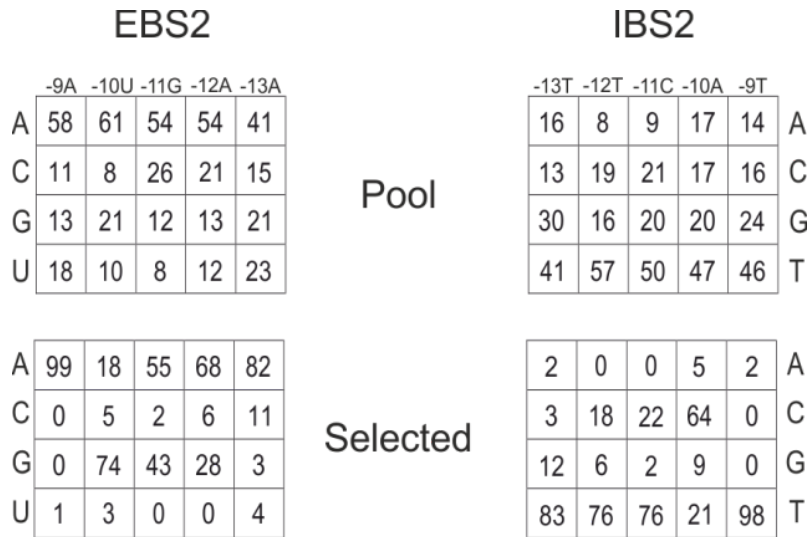|	-20	-19	-18	-17	-16	-15	-14
A	22	24	26	30	32	32	25
C	19	19	23	12	14	19	16
G	25	29	20	26	30	23	30
T	34	29	31	31	23	26	30

Pool

	+2	+3	+4	+5	
26	34	39	20	A
36	27	29	30	C
15	21	13	18	G
23	18	19	31	T

	-20	-19	-18	-17	-16	-15	-14
A	21	28	44	36	48	1	32
C	4	11	19	15	1	1	14
G	15	11	13	21	43	0	18
T	60	50	24	28	9	98	35

Selected

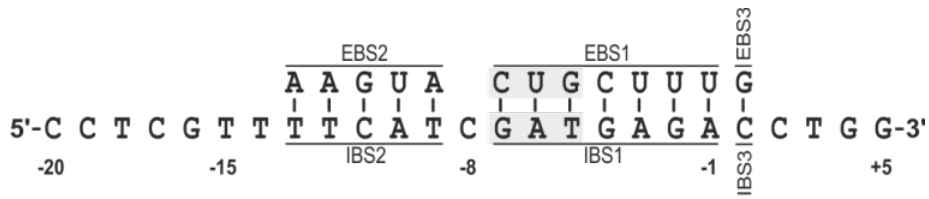|	+2	+3	+4	+5	
44	29	4	42	A
30	25	8	9	C
12	6	77	25	G
14	39	11	25	T

Sfig. 1

Nucleotides frequencies obtained at each randomized position of selected plasmids and in the initial pool corresponding to the distal 5'-exon (positions -20 to -14) and distal 3'-exon (positions +2 to +5)
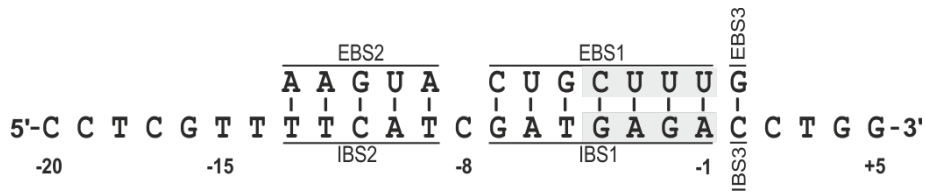
EBS2

	-9A	-10U	-11G	-12A	-13A
A	58	61	54	54	41
C	11	8	26	21	15
G	13	21	12	13	21
U	18	10	8	12	23

Pool

IBS2

	-13T	-12T	-11C	-10A	-9T	
	16	8	9	17	14	A
	13	19	21	17	16	C
	30	16	20	20	24	G
	41	57	50	47	46	T

	A	C	G	U
A	99	18	55	68	82
C	0	5	2	6	11
G	0	74	43	28	3
U	1	3	0	0	4

Selected

	2	0	0	5	2	A
	3	18	22	64	0	C
	12	6	2	9	0	G
	83	76	76	21	98	T

Sfig. 2

Nucleotides frequencies obtained at each randomized position of selected plasmid and in the initial pool.
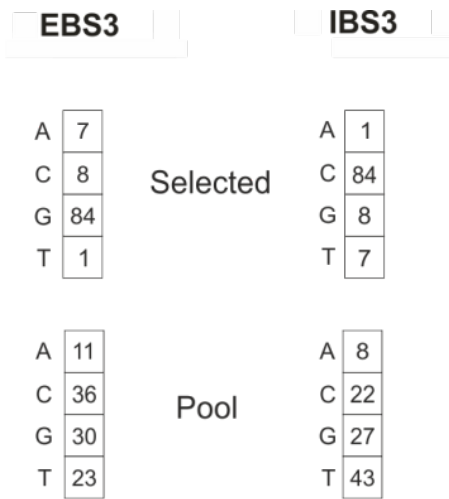
Sfig. 3

Nucleotides frequencies obtained at each randomized position of intron-invaded plasmids (selected) and in the original pool corresponding to the EBS1-3'/IBS1-5' interaction whose nucleotides are highlighted in grey.

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                    EBS2                      EBS1           EBS3
                 A  A  G  U  A       C  U  G  C  U  U  U   G
                 |  |  |  |  |       |  |  |  |  |  |  |   |
5'-C  C  T  C  G  T  T  T  C  A  T  C  G  A  T  G  A  G  A   C  C  T  G  G-3'
  -20          -15        IBS2       -8        IBS1      -1  IBS3          +5
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	EBS1							IBS1				
	-1U	-2U	-3U	-4C			-4G	-3A	-2G	-1A		
A	23	22	24	22			27	19	30	23	A	
C	23	11	13	22	Pool		29	24	31	30	C	
G	26	29	22	29			11	31	17	21	G	
U	29	38	41	28			33	26	21	26	T	

	-1U	-2U	-3U	-4C		-4G	-3A	-2G	-1A	
A	8	9	12	14		23	25	36	33	A
C	28	8	2	16	Selected	17	42	20	10	C
G	27	44	55	29		29	7	13	32	G
U	37	39	31	41		31	26	31	25	T

Sfig. 4

Nucleotides frequencies obtained at each randomized position of intron-invaded plasmids (selected) and in the original pool, corresponding to the EBS1-5'/IBS1-3' interaction whose nucleotides are highlighted in grey.

EBS3		IBS3	
A	7	A	1
C	8	C	84
G	84	G	8
T	1	T	7

Selected

A	11	A	8
C	36	C	22
G	30	G	27
T	23	T	43

Pool

Sfig. 5

Nucleotides frequencies obtained at each randomized position of intron-invaded plasmids (selected) and in the original pool, corresponding to EBS3/IBS3 interaction.

Supplemental Table1. Oligonucleotides used.

Oligonucleotide	Sequence 5' to 3'
18R0	ACGTTTCTCAATTCGAAACG
Epsilon	GTGAGCGTCGGATGAAAC
IBS1R-A1	CATCTGCAGCCTCGTTTTCATCGATNNNNCCTGGTCTAGACAT
IBS1R-A1	CATCTGCAGCCTCGTTTTCATCGATNNNNCCTGGTCTAGACAT
IBS1R-A2	CATCTGCAGCCTCGTTTTCATCNNNGAGACCTGGTCTAGACAT
IBS1R-A2	CATCTGCAGCCTCGTTTTCATCNNNGAGACCTGGTCTAGACAT
OLAL-A	TAGGCCGGAGGAGTTTCACCAGCCG
RmInt1 IBS2-A	CATCTGCAGCCTCGTTNNNNNCGATGAGACCTGGTCTAGACAT
RmInt1 IBS2-A	CATCTGCAGCCTCGTTNNNNNCGATGAGACCTGGTCTAGACAT
RmInt1-3'N4	TACAGATCTNNNNGTCTCATCGATGAA
RmInt1-5'N7	CATCTGCAGNNNNNNNTTCATCGATGAGAC
RmInt1-EBS1D-3'N	GTAAGTGTCGTCGAAACCAGGACCGTTTCNNNATCCTGGGACAA
RmInt1-EBS1D-5'N	GTAAGTGTCGTCGAAACCAGGACCGNNNNGTCATCCTGGGACAA
RmInt1-EBS1-wt	GTAAGTGTCGTCGAAACCAGGACCGTTTCGTCATCCTGGGACAA
RmInt1-EBS2-N	CTGGTTTCGACGACACTTACGNNNNNAACGACGCGTCCTC
RmInt1-EBS2-wt	CTGGTTTCGACGACACTTACGTTCATAACGACGCGTCCTC
RmInt1-EBS3-N	CCGGGCGGGCGGCGACCGGCGTANAGGGGGCGTGAG
RmInt1-EBS3-wt	CGCCGGTCGCCGCCCGCCCGG
RmInt1-IBS1D-3N'	CTACTAGAGCTCACGTGCCTCGTTTTCATCGATNNNNGTGTGCTGCAGAGGCA
RmInt1-IBS1D-5'N	CTACTAGAGCTCACGTGCCTCGTTTTCATCNNNGAGAGTGTGCTGCAGAGGCA
RmInt1-IBS2-Nsac	CTACTAGAGCTCACGTGCCTCGTTNNNNNCGATGAGAGTGTGCTGCAGAGGCA
RmInt1-IBS3-A	CATCTGCAGCCTCGTTTTCATCGATGAGANCTGGTCTAGACAT
RmInt1-IBS3-B	ATGTCTAGACCA
RmInt1-IBS3-N	CTCCTAGGCCAGNGGTGAGTAGGCC
RmInt1IBS-B	ATGTCTAGACCAGG
Sac-Bbr	GGGAGCTCACGTGCCTCGTTTTCATCGATGAGA
1ins-A	CTGCAGGACCAGCGCTCCAGAAAGAT
1ins-B	CTGCAGTTGTTGCGGAACTTGGCGAT
2ins-A	CTGCAGCTCGCCGATGCTTTCATCGC
2ins-B	CTGCAGGGTCGGCAACATGCCGATTC
3ins-A	CTGCAGTTGAAGCCAAGCGCCGTGTC
3ins-B	CTGCAGAGCATCGTGTCGCAGAAGTG
4ins-A	CTGCAGCCCGGATAATCCCACCTATG
4ins-B	CTGCAGCCAACGATAGCGCCGGTAAC
5ins-A	CTGCAGCGGCATACTGGACATGTGAG
5ins-B	CTGCAGTCCAGTCGGCGGAAATCGTG