

Transformation and Activity Change of Selected Allelochemicals by Microbial Metabolisation.

Supplementary data

J.I. Fritz* and D. Schneider

Universität für Bodenkultur Wien, Department IFA-Tulln, Konrad Lorenz Str. 20, 3430 Tulln, Austria

Phone: +43-2272-66280-559; FAX: +43-2272-66280-503; Email: ines.fritz@boku.ac.at

* Corresponding author

Table S1.

Analysis parameters of the soil from the IFA-site used for degradation experiments

Parameter	Result	Unit
Fraction 0-2 mm	100	%
Fraction >2 mm	0	%
DM (dry matter)	90.2	%
VS (volatile solids)	4.3	%
WHC (Water Holding Capacity)	0.52	g H ₂ O / g DM
pH-value	7.5	-
Basic respiration	0.11	mg CO ₂ / g DM*24 h
Glucose-induced respiration	0.13	mg CO ₂ / g DM*24 h

Table S2.

Method parameters for HPLC separation of aqueous plant and soil extracts, intended for comparing fingerprint analysis and mass identification of components and metabolites. Method based on (Eljarrat and Barceló, 2000; Eljarrat *et.al.*, 2004), modified for higher resolution of polar compounds.

Instrument part	Type / Parameter
Instrument	hewlett packard HPLC-MS Series 1100
Column	Phenomenex Synergy 4µm MAX-RP 80A; 35°C
Mobile phase	solvent A: 0.05% acetic acid in water; solvent B: methanol; flow: 1.0 ml / minute
Gradient separation	0-4 min: 5% B; 4-17 min: linear to 50% B; 17-22 min: linear to 95% B; 22-27 min: 95% B; 27-30 min linear to 5% B; post-run time: 4 minutes
Sample injection	25 µl aqueous solution; filtered through 0.22 µm pore size
Detection	mass selective detection (Quadrupol), spray chamber 350°C, 12 L/min N ₂ ; API-ES ionisation, positive mode, fragmentor voltage: 70 V; mass detection window: 75-500 Da

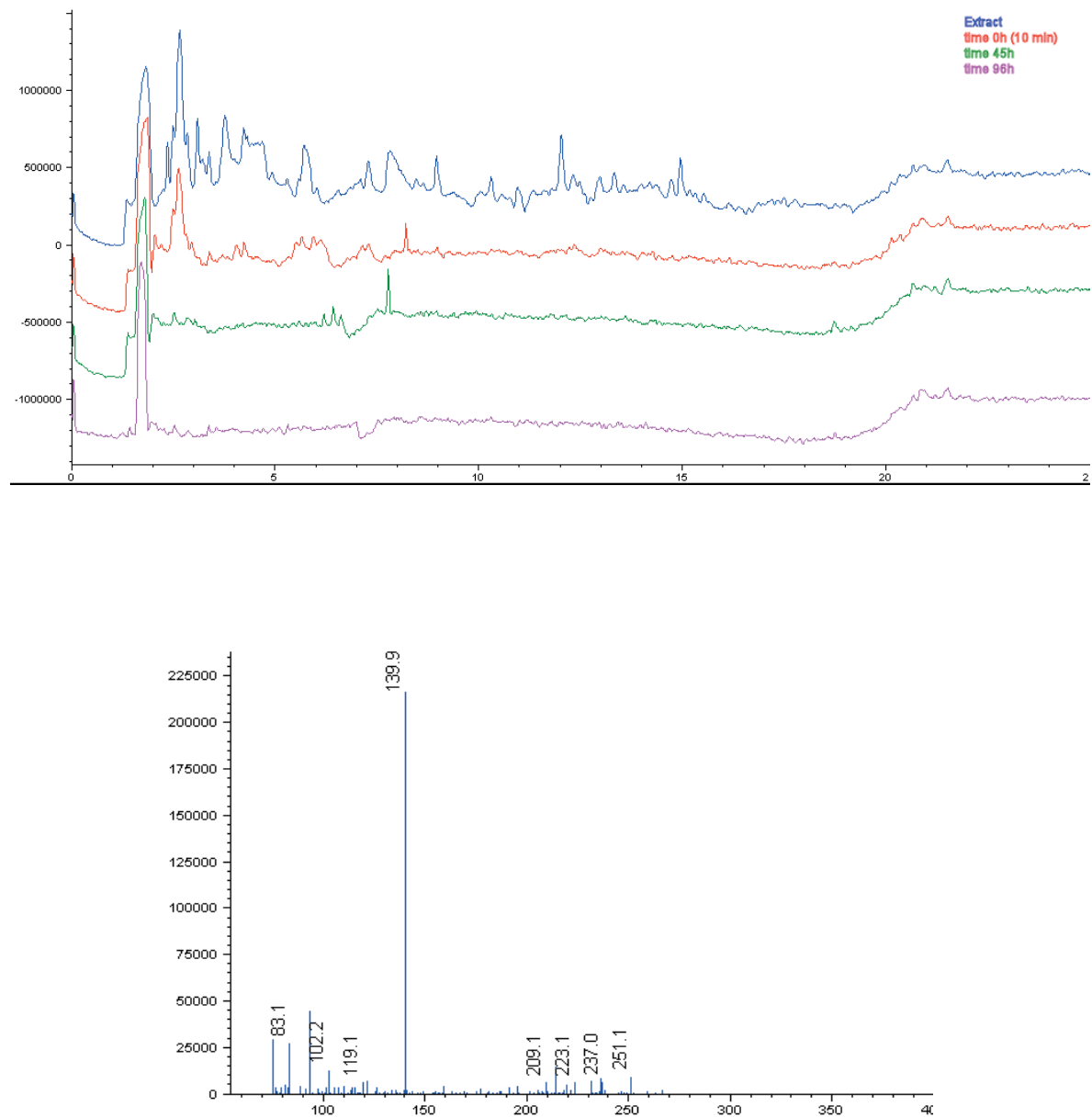


Figure S1.

HPLC-MS chromatograms of aqueous extracts of the second soil contact experiment with *Fallopia j.* Experiment times are (from top to bottom): plant extract before application, at 0, 45 and 96 hours. All extracts were analysed at the same dilution rate. Mass spectrum of peak at retention time 7:50 min (arrow) in the soil extract after 45 hours.

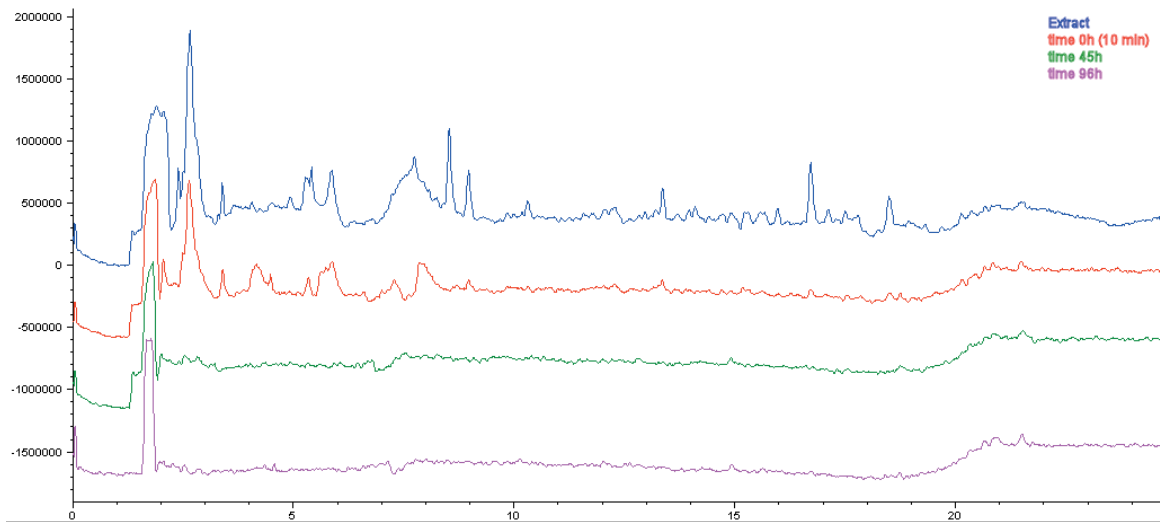


Figure S2.

HPLC-MS chromatograms of aqueous extracts of the second soil contact experiment with *Impatiens g.* Graph details as described in Figure S1.

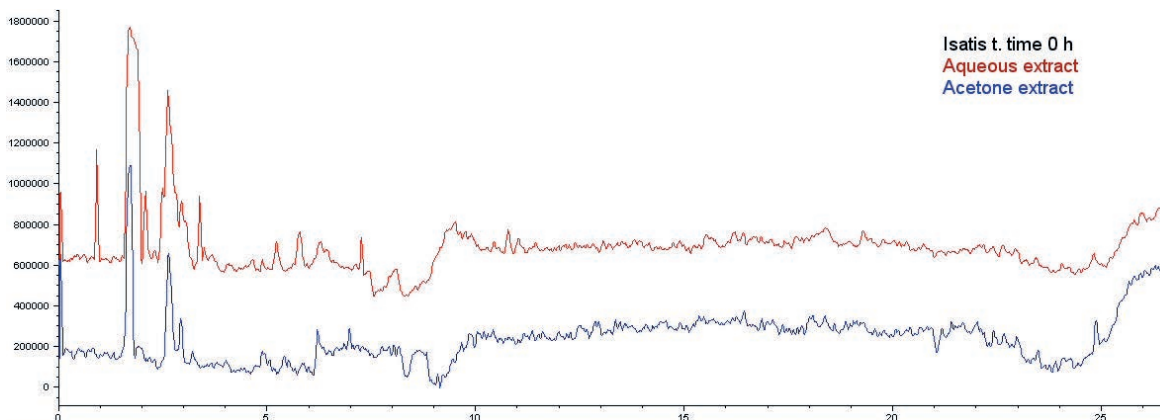


Figure S3.

HPLC chromatograms of aqueous (upper) and acetone (lower) extracts of the third soil contact experiment with *Isatis t.* at 0 hours. Both extracts were analysed at the same dilution.

Sequence data (identified by NCBI-blast)

The sample identifiers correspond to the band numbering in Figure 11 of the main article, provided here as a smaller copy for quick reference.

NCBI-blast results, 16S-rDNA 341f-907r, treshold 99%:



>1-1f well A01 UT080626 Run01 Cimarron 4.00 Even Spacing 428
NGGNCAGTTCNGNCGCANCCACTGCCGCGTGNGATGATGAAGGCTTCG
TGANTCTGTAAAGCTCTGTTTGTAGGGAAGACAACGCTACCATGACGT
TAATCATTGCTCGTAGCCTTTGACGGTACCTAATCCAAGATAACGCCACC
GGCTAACTACGTGCCAGCAGCCGCGGTAATACGTACCGTGTGCAAGCGTT
GTCCGGAATTATTGGGCGTAAAGCGCGCGCAGGNGGTCCTTTAAGTCTGA
TGTGAAAGCCCCACGGCTCAACCGTGGANGGTCATTGGAACTGGGGGAC
TTGAGTGCAGAAAGGAGAGTTGGAATCCCCGTGTTAACCGTTGAAAAAT
GGCGTAAANATTTTGGAGGAAACACCCAGTTGGCGAAAGGCCACTTTTC
CTGGTCTNTTTAACCTTGAANCCCTAAGGCCCAAAAACCNGTTGGGGGAG
CAAAACCAAGGAATTTAATACCCCTGTTATCCACCCCTAAACAATTATTG
CTATTNTTGGGGGGTTTCTGCCCTTTTGTCTACTTACGCTTTTAAACAC
TCCGCCTGGGGATTCTGGGCCCGCANNCTAACTCAAGAAATTTTACGTCGG

ID: Bacillus cereus

>1-1r well E01 UT080626 Run01 Cimarron 4.00 Even Spacing 511
ANGCTTGGAGTNATTGACTGCGGTTACTGCAAGACACTGAAGAGGGCGGA
AACCCCGTAACACTTTATCACTCATCGTTGTACGGCTGTAGGAACTACC
AGGATATCTAATCCTGTTTGCTCCCCACGCTTTCGCTGCCTCAGTGTACG
TTACAGACCAGAAAGTCTGCCTTCGCCACTGGTGTTCCTCCATATCTCTA
CGCATTTACCCGCATACACGTGGAATTCCACTCTCCTCTTCATGCACTCA
AGTCCCCCAGTTTCCAAGTGACCCTCCACGGTTGAGCCGGGGGCTTTTAC
ATACAGACTTAAAGGACCGCTGCGCGCGCTTTAACGCCCAATAATTCCG
GAAAACGCTTGCCACCTACTGTATTACCCGGGGGTTGGTGGCACGTAGT
TAGCCGTTGGCTTTCTNGTTAGGTACCGTCAAGGTACCAGCAGTTTACTCT
CGTACTTTTTCTCCCTAACAACAACCTTACACCCGAAGCCTTCTTCCTC
ACGCGGTTTGTCTCTCAACTTCCCCCATTCNAAAAATCCCCACNTCTC
GCCCCCCCCA

ID: Bacillus cereus

>1-3f well A02 UT080626 Run01 Cimarron 4.00 Even Spacing 476

ANNANTTNTCNANCATCNAACTNNGAATGTCNNGAGCATCCACTGCCGCG
TTAATGATGAATGGCTTCAGTGGATCTTAAAGCTCTTTTGTTCAGGGAAG
AACAACCTACCAGTACTGTAATCTTGCTACGCTACCTTGACGTGTACCTA
ATCAAGAAAGCCACGGCTAACTACGTGCCAGCAGCCGCGGTAATACGTAC
GTGTGCAAGCGCTTGTCGGAATTATTGGGCGTAAAGCGCGCGCAGGCGG
TCCTTTAAGTCTGATGTGAAAGCCCCCGCTCAACCGTGGAGGGTCATTG
GAAACTGGGGGACTTGAGTGCAGAAAAGGAGAGTGGAAATTCCACCGTGT
ACGGTAAATGCGTAATATTTGGGAGGAAACACCAAGTGGGCGAAAGGGCA
ACTTTCCTTGGGTCCTTTTAACTTGAACACTCAGGCGCGGAAAAGCGTT
GGGGAGCAAACCATGATTAATAACCTGGTATCCACGCGTAAACGATAT
GCTAATTGTAGGGGGGTTTCTGCCNTTATGCTGCTAAACGCATTA
ACACTCCGCTGGGGATTACGGGGCCTGNAAGNCTAAACTCAAGNAATTT
TAGT

ID: Bacillus sp. SG-1 or Bacillus cereus

>1-3r well E02 UT080626 Run01 Cimarron 4.00 Even Spacing 509

TCCNNGAGTGGAAGTANGTTAGCTGCTGTAGCCTGACNAGACTNAAGG
GGGTCGGGAACACCCACGTAAACACATTANTCACTCATCGTATGTACGG
CTGATGGACTACCAGAGATATACTAATTTCTGTTTCGCTCCCCACGCTT
TCGCTGCCTCAGTGTACAGACCAGAGAAGTCTGCCTTACGCCACT
GTGTGTTCTCACATATCTCTACTGCATTTACCGCTACACTGTGNGAAT
TCCACTCTCTCTTCTTGCACTCAAGTCCCCAGTTTCCAAATGACCCTC
CACGGTTGANCCGTGGGCTTTCACATACCAACTTAAAGGACCGACCTGCG
CGCGCTTACCGCCCAATAATTCCGGAACGCTTGCCACCTACTTAAT
TACCGGGGGTGTGTCGACGTAGTTAGCCGTGTGCTTCTNCTTAGGTA
CCGTCAAGTACCACATTTACTCTCGTACTTGTCTTCCCTAACACAGAC
TTTACGACCCGAAAGCCTTCTTCTCACGCGGTTTGTCTCCCTCACACTT
TCCNCCATTGCGAAAAAATCCCCATGTCGCCCCCA

ID: Bacillus sp. SG-1

>2-1f well A03 UT080626 Run01 Cimarron 4.00 Even Spacing 439

CGGGCAANATCTTAGGACAGTCCACTGCCGCGTTGAGACTGATGAAGGCT
TCAGTGNATTGTAAAGCTCTGTTGTACGCGGAAAGAACACCTACCAT
AACGTTAATCATTTGCTCGTAGCCTTGACGTGTACCTAATCACAAGAAACG
CCACGGCTCAACTACGTGCCACCAGCCGCGGTCAATACGTACGTGTGCAA
TGCGCTTGTCGGAATTATTGGGCGTAAAGCGCGCGCAGGCGGTNCTTTA
AGTCTGATGTGAAAGCCCCCGCTCAACCGTGGAGGGTCATTGGAACTG
GGGACTTGAGTGCAGGAAAGGAGAGTGGAAATCCACTTGTACGGTGAAA
TGCGTATATATTTGGAGGAACACCAGTTGGCGAAGGCCACTTTCTGGTCT
GTAACTGACACTCAGCGGAAAGCGTGGGGGAGCAAACATGGATTAATA
CCCTGGTTNTCCACCCTAACATACTTGCTATTGTTGGGGGTTTCGCCCTT
TTGCTCTACCTTTTACCTCCGCTGGGATTGGCAAGCTAAACCTCAAG
GAAATTTTACGACG

ID: Bacillus sp. SG-1, Bacillus cereus

>2-1r well E03 UT080626 Run01 Cimarron 4.00 Even Spacing 600
TAACTGCTGTTAGCTTGANNGNACACTAGAAGGGGCTGAGAAACCCCACT
GAACACTTATGCACCTCATCGTTTGACGGTGTGTAGGACTACCGAGAGGTA
TACTAATTTCTGTTTCGCTCCCCACGCTTTCGCTGCCTCGATGTGTACG
TTACTATGACCGAGGAAAGTCTGCCTTCGCCACTGTGTGTTCCATCACTA
ATATCATCTACTGCATTTACCTAGCATACTACTTGTGTGAATTCCAAC
NTCCTCTGTCATGCACTCAAGTCCCCCATGTTTACCNAGTGAGCCCATCC
GACGGATTGAGCCNNGGGGGCTTTCCTATACCAGACTTAAGAGGACCTGA
CCTGACGCGCGCTNTACGCCCAATAATTCTGGAAAAACGCTTTGCCAC
CTTATGTTANTTAACCCGGGGGGTGGCTGGGCAACGTAAGGTTAGCG
CCGTGGACTTTTCTTNNTTAGGTACCGTCTAAGAGTTACACAGTCAGTTN
ACTCTCGTTACTTGTCTTCCCTAAACAACAGAGNTTTACGGACCCGAAG
GNCTTCTTCGCTACGCGGTGTGCGTCCTTCAGACTTTGCGCCCATTC
GGAAAATTCCCTATCTGGTGCCTCC

ID: Bacillus sp. SG-1

>2-3f well A04 UT080626 Run01 Cimarron 4.00 Even Spacing 357
TGANTCGANGAAGGCTTCGTGNGTCTGTAAAGCTCTGTTTGTAGGGAAG
AACACGCTACCATGACGTAATCATTGCTCGTACCTTGACGTGTACCTAA
TCAAGAAAGCCACGGCTAACTACGTGCCACCAGCCGCGGTAATACGTACG
TGGCAAGCGTTGTCCGGAATTATTGGGCGGTAAAGCGCGCGCAGGGCCGG
TTTCCTTTAAAGTCTTGNATGTTGAAAGCCCCCGGCCTCCAACCCGTGG
GAAGGTCAATTTGGAACTGGGGGAACTTTATTGGCGAAAAGGNAGANG
TTGAATTTCCACTGTTAGGTAAATTGCCTTAAAAATTTTGGAAAGGAAAC
CCCCCTGGGGGAAGGGCACACCCTTCTTCTCGTGGGTTTCTCTTTAA
CNTGTCTACCCCTCTCTAAAGGGGGCCCCAAAAAAGNGCTGTGGGGGGG
AACACAAAAACACAGGGAATTTAATTCCCTGTATTATCCCCCCCCCTAA
ACAATTATTGCTTATTGTTTGGGGGGNTTCCCGCCCTTATGCTGCATC
TAACGCTATTCAACCTCCGCCTGGGGCAGTCGGGGCGGCAAAGTCTGAAC
TCAAAGAATTCGACGGG

ID: Anoxybacillus flavithermus WK1

>2-3r well E04 UT080626 Run01 Cimarron 4.00 Even Spacing 509
CNNGAGTGGANGTNGTTAGCTGCTGTAGCTGNCAGGCACTNGAGGGCTG
AGACAACCCCACTGAACACTTANCACTTCATCGTTGTACGTGTGTAGGAC
TACGCAGAGATATCTAATTTCTGTTTGCTCCCCACGCTTTCGCTGCCTC
ATGTGTACAGTTACAGACCAGANAGTCTGCCTTCGCCACTGGTGTTCCTCA
CATATCTCTACTGCATTTACCAGCATACACTGTGTGAATTTCACTCTCC
TCTTCATGCACTCAAGTCCCCCATTTTCCAAGTGACCCTCCACGGATTGA
GCCGGGGGCTTTCACATACTAAAGGACCGACTGCGCGCNCTTACG
CCCAATAATTCCGAAAAACGCTTGCCCCCTATTANTACCGGGGGGTGG
TGGCAGTAGTTGCCGTGTGTTTTCTGGTTAGGTACCGTCAAGGTACCAGC
AGTACTCTGTAATTGTTCTCCCTAAACAACAGAGCTTAACGACCCGAAG
GCCTTCTTCGCTACACGCGGGTGTGNGTCCTTCAGACTTGCGCCATTGC
NGAAAAAATCCCCANNTGTACGCCCCCCCN

ID: Anoxybacillus flavithermus WK1

>3-1f well A05 UT080626 Run01 Cimarron 4.00 Even Spacing 477

AATTAGCGGGANCTTCGAGCATCCATGCCGCGTNAGACTGAATGAAGGCT
TCGGGATTGTATAAGCTCTGTTTGTACGCGGAAGAACAACCTACCATAC
TTAATCATTGTCTACGTTACCTTGACGGGTAACCTAATCAGAATACGCCN
CGGCTCACACTACCTGCCACCCAGGCCGCGGTAAGTACGTNCCGTGTGCG
AATGCGCTTGTACTGGAATTAGTTGGGCGTAGANGCGNGCGCAGGCGGT
CCTTTAAGTCTGANGTGAAAGCCCCCGCTCAACCGTGGAGNGTCATTGG
AACTGGGGGACTTCAGTGCGGAATAGGAGAGTGGAANTCCACTTGTAGC
GAGTNAATGCATATATATTTGGAGGAACACCCGTGGCGAAGGCCACTTT
CTGGTCTGTACTGACACTCAGGCCGAAANGCGTGGGGAGCCAACATGATT
AATACCCGTGTACTCCACCCTAACATACTGCTTTTGTGGGGCTTTCGCCT
TTATGCTGCCTACCTATTAACCTCTCCGCCTGGNCATACGCGCAGCTAAAT
CAAGNGTTTACGA

ID: *Bacillus* sp. SG-1

>3-1r well E05 UT080626 Run01 Cimarron 4.00 Even Spacing 418

CTGCNCTCNNAGCNGTGTGAGNGATCTTAAGTGGGTAGCTGNGNGACAC
TAAGAGGGGCTGAGTACAACCCCACTAGAACACTTATCACTCATCGATTG
ACGGTGGATGNACTACCGATGTGTATCTCACATTCGCTGTTTCGCTCACC
GCACGCTGTTGCGTGCCTCGAGTAGTCAGTTGACAGACCGAAGANAGTC
TGCCGTTACAGCCGAGTGGTGTGTTCCATCACTAATATTCATCAGTACTGC
TATTCGACCGCTTACACTGTGTGAATTCCTACTTCCCTCTGTGCATTG
CACTCAAGTCCCCATCTATATACCGATGAGCCCATCCGTGGATTGAGCC
GGGGGGCTTTCACATACAGAACTTAAGAGGACCTGACTGGCGCGCGCATT
NTACGCCCCAAATAATTGCCTGGAAAGAAACGCTATGCCCCACCCCTTAT
GTATTGANCGCNGGGGGGTTGGGTTGGCGAAGTTTAGTTAGGCCCGGTGT
GATTTTCTTGTTAGGTACAGTCTAAGGTAACCAGCAATTTTAACGTCTC
GTTACTTGGTCTTCCCTAACAAACANAGCTTAAAGNACCCGGAAGGGT
CNTTCTTCGCTACACGGCCGGGTTTGGTCTCTCCAAGACTTTTNCCCC
CCCATTTTGCCGGAATAATTCCTCCCAACTCTCGTCGGCCCCCNGCCG
A

ID: ID: *Anoxybacillus flavithermus* WK1

(or: *Bacillus* sp. SG-1)

>3-2f well A06 UT080626 Run01 Cimarron 4.00 Even Spacing 495

CATGCTGCGTGAGACTGATGAAGGCTTCGGNATTGTAAAGCTCTGTTGT
TACGGAAGAACAATCCTACAGTACTTAATCATGTCTCGTACCTTGACGGT
AACCTAATACAAGAAACGCCACGGCTACACTACCGTGCCACCAGGCCGCG
GTAATACGTACGCGTAGGCAAGCGCTTGTCGGAATTATTGGGCGTAAAG
CGNGCGCAGGCGGTCTCTTTAAGTCTTGATGTGAAAGCCCCCGGTCAA
CCGTGGACGCGGTCAATTGGAACTGGGGGACTTCGAGTGCAGGAAAGGAG
AGTGGAANTCCACTTGTACGAGTGAAATGCGATATATATTTGGAGGAAC
ACCAGTGGCGAAGGCCACTTTCTTGGTCTTTAACTGACCCTTCAGGCNCC
GAAAGCGTGGGGAGCAAACATGATTAATACCCTGGTTATCCACGCCGTAA
CGATGATTGCTATTGTTAGGGGGTTCCGCCTTTATCGCTGCCCTAACGC
TATTANACCTCTCCGCTGGGACGTACGGGCTGAAGCTAAACTNCAAGG
TTAGACG

ID: none

>3-2r well E06 UT080626 Run01 Cimarron 4.00 Even Spacing 592
TGAAGNGCTTGACTGNCGACACNGAAGGGGGCGTGATAAACCCCACTGA
ACACTTTANCATCTCATCGATTGACGGCGGATGGAAGTAGCAGGTGCTAT
CTAATTGCTCTGGTATTTCGCTCCCCACGCTGTTGCGCTGCCGTCGAGCTG
TCAAGTTGACTAGACCGAGGANAGTCTGCCTTCAGTCCGANTGGGTGTTT
CATCTAATATTCATCTACTGCATTTCGACGCAGCTTACTACTGTGTGT
AATTCCAACCTTCTCCTCTGTGCATGTCACTCAAGTCCCCCATCTTTACC
GAAATGGACCCATCGCGACGGATTGAGCCGGGGGTCTTTTCACTATACCA
TGTANTTTAAAGAGGACCCGACGTGGCGCGCGCATTTACGCCCAAAATAA
TTTGCCGGAAAAACCGCTTTGCCCNCCCTTAATTTANTTACCGGGGGGT
TGGGGGGCAAAGGTAAGTTGGCCGTGGATTTCTNNGTAGGTACAGTC
TAAGGTACACATAAGTTACGTCTCGTTACTTGTCTTCCCTAAACAAGA
NCTTAACGGACACCGAAGGTCTTCTTCGCTCACGCGGTGTTGGTCTGTG
AGANTTGCNNCAATTGCGGGAAAAATTTCCCTATTTGGGCCCCCNCGGC

ID: none

>3-3f well B01 UT080626 Run01 Cimarron 4.00 Even Spacing 472
GGGCAANACTTAGGACNGAATCCACTGCCGCGTTAGACTGATGAAGGCCT
TCAGTGANTTGTAAGCTCNTGTTTGTTCACGCGAAAGAACAACCTACC
ATGACGTTAATCATTGCTACGCTTGCCTTGACGTGTACCTAATACAAGGA
ATACGCCACGGCTCACACTACGTGCCACCAGGCCGCGGTCAATACGTACC
GTGTGCGAATGCGCTTGCTCTGGAATTATTGGGCGTAGAAGCGCTGCGCA
GGCGGTCTTTCAAGTCTGATGTGAAAGCCCCNGCTCAACCGTGACGG
GTCATTGGAAACTGGGGGACTTGAGTGCGAAAGGAGAGTGGAANTTCCAC
TTGTACCGNGTTAAATGCGTAATATATTGGAAGGAACACCCGTGGGCG
AAAGGCCACCTTCTCCTGGTCTTTTAACTGACACCTCAGCACCAAAAAG
CGTGGGGAAACAAACAATGATTTATTCCTGTATCCACCCCTAACATAC
TTGCTTTTGTGGGGGTTTTCGCCCTTTTGTGTCACCTACCTATTAA
CCACTCCGCTGGGAGTACGGCGAAANGCTAAANCCCAAGGAAAGNTGTT
CG

ID: none

>3-3r well F01 UT080626 Run01 Cimarron 4.00 Even Spacing 574
AGTTNGACACGTAAGGGGGTCGTGAGTACAACCCACGTAAACACTTAT
TCACTCATCGATTGTGACGGCGATGGAAGTAANCAGAGNTATCTAATTT
CTCTGGTTTGCTCCCCATCTGCTTTGCGCTGCCTCGATGTAGTCAAGTT
ACTAGACCGAGGAATAGTCTGTCGTTGCGCGAGCTGGTGTTCATCTACTA
ATATCATCTACTGCATTTACCAGCTTAGCTACTGTAGGAATTCCAACCT
NTCCTCTGTGCATGTCACTCAAGTCCACCCATCTTATCCGAAGTGACCCA
TCGCGACGGATTGAGCCGGGGGTCTTTTACCTAATACAGACTTAAGAGG
ACCGACCTGGCGCGCGCTTTACCGCCCAATAAATTCCATGGAAAAACGC
CTTGGCCACCTTAATGTATTACCCGCGGGTTGGCTGGGCAACGTAAGTT
TGGCCCGGTGGTTTCTGCGTGTAGGTACCCGTCAAAAGTTACCAGTCAG
TTACTCTCGTACTTGTCTTCCCTAAACAACAAAGCTTACGACACCGAA
GTCTTCTTCGCTCACGCGTTTTGGTCCTTCAGAATTCGCCCCATTGCN
AAAATTTCCCAATNGTCCCCCCCCGCCAGA

ID: none

>4-1f well B02 UT080626 Run01 Cimarron 4.00 Even Spacing 528

NCGANCTNGGAATNTGCAGCGGAANGCCATGTAGCCNTTGCCATGCCTGC
AGTTGTAGTGATAGAAGGCTTCGCGGTTGTAAAGCTCTTCGCAAGGGAA
GAAAACTTACTCCTTCTAACTATACGGGTGAGTGTTGACGGTACCTTGAT
AAGAAGCACCGGCTAACTACGTGCCAGCAGCCGCGGTAATACGTAGGGTG
CGAGCGTTAATCGGAATTACTGGGCGTAAAGCGTGCGCAGGCTGTTTTGT
AAGTCAGATGTGAAATCCCCGAGCTCAACTTGGGAAGTTCGTTGAAACT
ACAAGACTAAATATGTCAGAGGGGGGTAGAATTCCACGTGTAGCAAGTGA
AATGCGTAAGATGTGGAGGAATACCAATGGCCGAAAGGCAGCCCCCTGG
GATTATATTTGAACGCCCCATGCCAAAAGCGTTGGGGAGCAAACAGGAT
TAATACCCTGGTAGTCCACGCCCTAAACGATGTCTACTAGTTGTTGGTGG
AGTAAAATCCATGAGTAACGCAGCTAACGCGTGAAGTAGACGCTGGGGAG
TACGGGTCCGCAAGATTAACTCAAATGAATTTCNAT

ID: none

>4-1r well F02 UT080626 Run01 Cimarron 4.00 Even Spacing 526

NGGTACATGCAGGTCACTCATGGATTTACTCCACCGAACAAGTAGTANA
CATCGTTTAGGGCGTGGACTACCAGGGTATCTAATCCTGTTTGCTCCCCA
CGTTTCGTGCATGAGCGTCAATATTATCCAGGGGGCTGCCTTCGCCAT
TGGTATTCCTCCACATCTCTACGCATTTCACTGCTACACGTGGAATTCTA
CCCCCTCTGACATATTCTAGTCTTGTAGTTTCAAACGCAGTTCCCAAGT
TGAGCTCGGGGATTTACATCTGACTTACAAAACAGCCTGCGCACGCTTT
TACGCCCAGTAAATTTCCCGATTAAACGCTCGCCACCCTTACGTTNTTAA
CCCGGGGGTGGTTGGGCACGTAGTTAGCCGGTGCTTCTTATCAAGGTAC
CGTCAACCTCACCTATATTAGAAGAGTAAGTTTCTTCCCTTGCGAAAG
AGCTTTACAACCCGAAGGCCCTTCTTCACTACGCGGAATGGCTGGATCAG
GCTTTCGCCCATGTGCCAAAATTTCCCACTGCTGCCTCTCCCCAGG

ID: Beta proteobacterium KB13 ctg_1106380163073

>4-2f well B03 UT080626 Run01 Cimarron 4.00 Even Spacing 481

CGATGCCTGCGTGTANTGANTGAAGGTCTTNGGNTTGTAAGCATCTTTC
GGCACANGGAAGAAAGACTTTATCCTGTACTAANATCATCGGTGAGAGTT
GACGGTACCTTGATAAGAAGCACCGGCTAACTACGTGCCAGCAGCCGCGG
TAATACGTAGGGTGCGAGCGTTAATCGGAATTACTGGGCGTAAAGCGTGC
GCAGGCTGTTTTGTAAGTCAGATGTGAAATCCCCGAGCTCAACTTGGGAA
CTGCGTTTGAAACTACAAGACTAGAATATGTCAGAGGGGGGTAGAATTCC
ACGTGTAGCAGTGAAATGCGTAAGATGTGGAGGAATACCAATGGCGAAGG
GCAGCCCCCTGGGGANTNAATATTTGGACGCCTCATTTGGCCCCAAAAC
CGTTTGGGGGGGNCCCCAAAACACGGGGATTTTAAAAANCCCCCTTGGGT
AGTCCACGCCCTAAACGATGTCTACTAGTTGTTGGTGGAGTAAATCCCA
TGAGTAACGCAGCTAACGCGTGAAGTAGACCGCCTGGGGAGTACGGTCCG
AAGATTAACTCAAATGAATTTGTT

ID: none

>4-2r well F03 UT080626 Run01 Cimarron 4.00 Even Spacing 46
ATCGNATGACGGGGCNTGGACCTACCCAGGGGCGTACTCTACGTNCNGAN
TTGCTCCCCACCGCTTTACGTGAACTGACGACGTCATATTATTCACNACG
TGGGAGACTGGCCTTACGATCCGCGTAGGGTACTTCCATACCAGCATTCT
CTAGCGCCACTTCACCTGCGTACACAACCTACGAAATTCTAACGCCACAA
TCTACCCTATACATTCCAACGTNTATGGTAAATTTTCCAA

ID: none

>4-3f well B04 UT080626 Run01 Cimarron 4.00 Even Spacing 456
TTGAANGGCANGTCAGTGACATCCAGTGCCGTNCAAGTTGATATAGAAGG
CTTCGGGATTGTAAAGCTCTTTCGCAAGGGAAGAAAACCTATCCTTCTAA
TATAGGGTGAGAGTTGACGGTACCTTGATAAGAAGCACCGGCTAACTACG
TGCCAGCAGCCGCGGTAATACGTAGGGTGCGAGCGTTAATCGGAATTACT
TGGGGCGTAAAGCGTGCGCAGGCTGTTTTGTAAAGTCAGATGTGAAATCCC
CGAGCTCAACTTGGGAACTGCGTTTGAAAACCTACAAGACTAGAATATGTC
AGAGGGGGGTAGAATTCCACGTGTAGCAGTGAAATGCGTAAGATGTGGAG
GAATACCAATGGCGAAGGCAGCCCCCTTGGATAATATTGACGCTCATGCA
CGAAAGCGTGGGGAGCAAACAGGATTAATACCCTGGTATCCACCCCTAAA
CATTTCTACTATTTTGTGGATAAAATCCATTATACCACTTACCTTAATNA
CCCTGGGAATTCCGTCCATANTAAANNCTANTTTTTTTTGC

ID: Beta proteobacterium KB13 ctg_1106380163073

>4-3r well F04 UT080626 Run01 Cimarron 4.00 Even Spacing 495
CAGGTTGANCGACGNNTNNCGACGTCGGAGGTANTCACTGANTNGTAGC
ATGNCGGTCACTAGCATGGAGTTCTTACTCCACCGAACAACTAGTAGACA
TCGTTGTAGGGCGTGGACTACCAGAGTATCTAATCCTGTTTGCTCCCCAC
GCTTTCGTGCATGAGCGTCAATATTATCCCAGGGGGCTGCCTTCGCCATT
GGTATTCCTCCACATCTCTACGCATTTCACTGCTACACGTGGAATTCTAC
CCCCCTCTGACATATTCTAGTCTTGTAGTTTCAAACGCAGTTCCCAAGTT
GAGCTCGGGGATTTACATCTGACTTACAAAACAGCCTGCGCACGCTTTA
CGCCCAGTAATTCCGATTAACGCTCGCACCCCTACGTATTACCGCGGCTGC
TGGCACGTAGTTGCCGGTGCTTCTTATCAAGGTACCGTCAACCTCACCCCT
ATATTAAAGATAATTTTCTTCCCTTGCAAAGAGCTTTACAACCCGAAGGG
CTTCTTCACTCACGCGGAATGGCTTGATCAGGCTTTCNCCCCTTTGTCAA
TTNCCCCCCTGTGCTCCCCCNCNGTG

ID: Beta proteobacterium KB13 ctg_1106380163073

>5-1f well B05 UT080626 Run01 Cimarron 4.00 Even Spacing 380

GATGCCGCGTGATGAGAGGCTTCGGGTTGTAAAGCTCTTTCGCAAGGGAA
 GAAAACTTACCTTCTAACTATACGGGTGAGGGTTGACGGTACCTATGTA
 TAAGAAGCACCGGCTAACTACGTGCCACGCAGCCGCGGTAATACGTAGGG
 TGCGAGCGTTAATCGGAATTACTGGGCGTAAAGCGTGCGCAGGCTGTTTT
 GTAAGTCAGATGTGAAATCCCCGAGCTCAACTTGGGAAGTGCCTTTGAAA
 CTACAAGACTAAATATGTCAGAGGGGGGTAGAATTCCACGTGTACAGTGA
 AATGCGTATAATGTGGAGGAATACCAATGGCGAAGGCAGCCCCCTGGGAT
 AATATTGACGCTCATGCACGCAAAGCGTGGGGAACAAACAAGGATTACAT
 ACCCTGGTATCCACGCCCTAAACGATGTCTACTATTTGTGGTGGAGTAA
 AATCCCTGAGTAACGCAGCTAACTGCGTCGAACGTAGACCGCCTGGGGAG
 TACGGTCGCAAAAATTAACACCCAGG

ID: none

>5-1r well F05 UT080626 Run01 Cimarron 4.00 Even Spacing 291

ATGNGGTCACTACATGGAGTTATTNCCTCCACGAACAACTAGCTATAA
 CATCGATGTGTAGGGCGATGGAACNAANCCAGAGCTATCTTCACATTCT
 GTTTCGCTCCCCACGCTTTGCGTGCAATGAGCGTCAATAGTTATCCCAGG
 TGGCTGCCTTCGCCGAGTTGGGTATTCTCCACTATNATCTACTGCATTT
 CGACTAGTACAGTGGAATTCTACCCCCCTCTGACTATATTCATAGNCTT
 GTATGTATTCGAGAACGCAGTTCCCTAAGTTGAGCTCGGGGATTCACAG
 TCTGACTTACACAAACAGCCTGCGCACGCTTTACGCCCAATAATTTCCGA
 TTAACGCTCGCCCCCTAATTTATTTAACGGGGGTGGGGGAAGTTAGTTGG
 CCGGTGTTTCTTATGAAGGTACCGTCAACCTCACCTATATTAGAGGTAA
 GTTTTCTTCCCTTGCGAAAGAGCTTAAGCAACCCGAAGGCCTTCTTCACT
 CGACGCGGAATGGCTGGATCAGGCTTCGCCCATTGTCCAAAAATTCCCC
 CCCCNGTNCCTCCCCNAGA

ID: none

>5-2f well B06 UT080626 Run01 Cimarron 4.00 Even Spacing 330

TGNATGATGAAGGTCTTCGTGAGTTGTANAGCATCTTTCAGGCACAGAGG
 GAAGGAAAGACGCTATCTATCTCCTGACTTAATAACATCAGAGTGAGAGT
 TGACGTGTACCTATGATAAGAAGCACCGGCTAACTACGTGCCACGCAGCC
 GCGTGTAATACGTAGTGGTGCGAGCGTTAATCGGAATTACTGGGCGTAAA
 GCGTGCGCAGGCTGTTTTGTAAGTCAGATGTGAAATCCCCGAGCTCAACT
 TGGGAAGTGCCTTTGAAACTACAAGACTAGAATATGTCAGAGGGGGGTAG
 AATTCCACGTGTAGCAGTGAAATGCGTAAGATGTGGAGGAATACCACATG
 GCGAAGGCAGCCCCCTGGGATAATATTTGACGCTCATGCACCAAAAAGCGT
 TGGGGGAACAAAACAGGATTNAAAATTACCCCTTGGTATTCCACCCCTA
 AACGATGTCTACTATTGTTGGTGGAGTAAAATCCCTGATAACGCACTAAC
 GCGTGAAATAACGCCTGGGGAGTACGGTCGCAAGATTAATACTCAATGAT
 TAGTGAGGG

ID: none

>5-2r well F06 UT080626 Run01 Cimarron 4.00 Even Spacing 446
GTAGTTCATCCNANTGATCAGTNTGACNTCNCGACGAAATAACGTGACTT
ANACATCAGTGTAGGGCGATGTGACCTAGCCAGAGGTA CTCTCACAGTCA
CTGGTTTGCTCCCCACGCTTTCGTGCATGAGCGTCAATATTATCCCAGGG
GCTGCCTTCGCCATTGGTATTCCCTCCACATCTCTACTGCATTTCACTAGC
TACACGTGGAATTCTACCCCCCTCTGACATATTCTAGTCTTG TAGTATTC
AAACGCAGTTCCCAAGTTGAGCTCGGGGATTTCACATCTGACTTACAAAA
CAGCTGCGCAGCTTTACGCCCAGTAATCCGATTAACGCTTCGCACCC
CTACGTATTTACCGGGGGGTGGTTGGAACGTTAGTTAGGCCGGGTGNTT
CTTATCAAGGTACCGTCAACCTCACCTATATTAGAAGGTAAGTTTCTT
CCCTTGCGAAAGAGCTTTACAACCCGAAGGCCTTCTTCACTCACGCGGAA
TGGCTGGATCAGGCTTGCGCCCATGTCCAAAATTCCCCACTGTGCTCCC
CGA

ID: none

>5-3f well C01 UT080626 Run01 Cimarron 4.00 Even Spacing 497
TTCCATGCCGCGTGGAATGATAGAAGGCTTCGGNATTGTAAAGCTCTTTC
GACAAGGGAAGAAAAC TTATCTCTCTAATCATCAGCGGTGAGAGTTGACG
GTACCTATGTATAAGAAGCACCGGCTCAACTCACGTGCCACGCAGCCGCG
GTCAATACGTAGGGTGCGAGCGTTAATCGCGAATTACTGGGCGTAATAGC
GTGCGCAGGCTGTTTTGTAAATCATGATAGTGAAATCCCCGAGCTCAACT
TGGAAGTGC GTTTGAAACTACAAGACTAAATATGTCAGAGGGGGGTAGA
ATTCCATCGTGTAGGCAGTGAAATGCGTATAATGTGGAAGGAATACCAAT
GGCGAAGGCCGCCCCCTGGGAATATATTGACGCTCATGCACACAAAAGG
GTTGGGNGACAAAAAAGGATTCCTCCCCTGGTTCATCCCCGCCCTAAA
CGATGTCTACTATTGTGGTGGAGTAAAATCCTTGAGTAACGCTTAACG
CTTCACTAGACCGCTGGGGAGTACGGTCCGCAAGATTAAACTCCNCGGT
ACGGGGG

ID: none

>5-3r well G01 UT080626 Run01 Cimarron 4.00 Even Spacing 381
TAACGNTTNTGGTACTNAACTCCNTACGNTNCGNAGTACTNACACANN CN
NGTAGACTGAGGATCACTACGATGGAGTTATNCTCCGAACCGAACAAGCT
AGCTATGACGATCGATGTGAGGGCGATGTGAACTAGCCAGAGCTATCTAA
TTCCTGTTNGCTCCCCATCGCTTGCGTGCATGATGCGTCAATATTATCCC
AGGTGGCTGCCTTCGCCGAGTTGGGTATTCTTCCACTATCATCGTACTG
CATTCTCGACTAGCATACACGNNGAATTCTACCCCCATCTGACATATTC
ATAGNCATGNAGTATCGAGAACGCAGCTTCCCAAGTTGAGCTCGGGGATT
CACAAGTGA CTTACAAAAACAGCCCTGCGCACGCTTTTACCGCCCCAAGT
AAATTTACCAAAATTAANGGCTCCCCCCCCCTAATATTTTATTTTCCC
GGGGGGGGTGGGGGGGGGCAGTTAATGTGGGCCGGGTGTTTCTTTAATG
AAAGGTACCGGTCAACCTCTACCTATATTAGAAGNTAAGTTTCTATA
CCCTTGCGAAAGAGCTTAANAACCCGAAGGCCTTCTTCACTCNCGCGGAA
TGGCTGGATCAGGCTTGCGCCCATGTCCAAAATTCCCCACTTCGCTCTG

ID: none

>6-1f well C02 UT080626 Run01 Cimarron 4.00 Even Spacing 176

CTNCCGNAGCCGCGTTGNAGATGANGAAAGGTCTTCGGGATTGTAAAGCC
GCTTTCGAGCAGGGAACGAAAACGTGTCTCGGAGCTAATACTCACTCGAC
GGTTCATATGACTGGTACCTGCANAAAGTAAGCACCGGCTTAACCTAC
GTGGCCAGCAGCGCCGCGGGTAATAACGTAGGGTGCGAAAGACGTTAATC
GGAATTACTGGGCGTAAAGCGTACGCAGAGCGGCTTTGCAAGTACAGGTG
TGAAATCCCCGGGCCTAACCTGGGAACTGCATTTGNGACTGGATGGCTTG
AGTTTGTGAGAGGGGGGTGGAATCCCCGTGTAAACAGTGAAAATTGGC
GTAAATATTTGGAAGGAACCAACCGATTGGGGGAAAAGGGGGGGGCCCCC
CCTTGGGACCTTTTAAATTTGGAACCCCCCAAGGTTCCCAAAAACCGTT
GGGGAGCAAACAGGATTAATAACCCCTTGGTATCCACGCCCTCAAACGAT
GTCNATCTATGTTGTCTGGAGGGTTTCTCCTCTCTGTACNCCCTAAAC
TCGTTAATTCTANCGCCTGNGGAGTACGTCCCANAAATTAATACTCAAAGA
AANTTTTA

ID: Sideroxydans lithotrophicus ES-1

>6-1r well G02 UT080626 Run01 Cimarron 4.00 Even Spacing 155

ATTCAGTANCGGACTAAGAGGAAGTTAGCACCATGCCAGAGACAACTCA
AGATCTCGATCATACTGNCGNATTAGGGGGTTGAGAGCTAATCNCAACN
AGGGGTATATANTATACTCTGCTGTTGCTNTCTCCACCGTCGTCTTC
TGTCTGCACTGATCGACGGTGATGANATNTATTCGCGCACGAGGAGAGCT
TCGCCGTCTCTTCCACTAGGGTGTCTCTCTCCTACATATATACTACAT
ATTTTACCATGCGTATACGACTGGTGAGAAATCTCTAACCACTCCT
CTTCTACCAAAAATACTAAACATGAGCAGTTTCATAAATGACGGTTCCC
CNCGGTTTTTTGGAGCCCGCGGGGGGATTATTTACACCTGTGTATTTAA
ANGCCGCCCCTGTGTACGCCNTCTTTTTTCCCCCCCCCAAAATTTCCC
AAAAAAAATACTTTTTTCCCCCCCCCCTTTTTTTTAAATCCCCCGCG
GGGGGGGTGGTTTGGGGGGGCGAGAATAAGGATTTATTCGGCGGGGGG
GTTTATTTCTTGTAGGGGTACCAGCTCGATATAATCGCGAGAGTATTAT
AAAATCAGCGCACAGTTTCCTTCCCTGCCGAAAAAAAGGTTTATAACA
CCACGAAGGGGCGTTTTCCCTCACGCCGGAGTGGGTTGNATAATCTGGN
TNTNCCNTTGTACAAAAAAATTTCCACATGGTGCCTCCCCCCTAGCCT
GAGGG

ID: Sideroxydans lithotrophicus ES-1 (98.5%)

>6-2f well C03 UT080626 Run01 Cimarron 4.00 Even Spacing 170

ACTCAAGATGGANTTCGACTGTGATACCTGCTCANAAGTAAGCANCCGTG
GCTTATAACTATCGGTGGCCACGTACACGCCCTGCGGTCGTAAATACTGG
TAGTGGGTGCGAAAGCGTTAAGTCTGGAACCTACTGGGCGTAAAGCGTAC
GCAGGCGGCNNTTGCAAAGACNNGGTGTGAAATCCCCGGGCCTTAACCT
GGGAACCTGCCATTTGTNGACTGCAATGGCTTGAAGTTTGTCAAAAGGGG
GGTGGAATTTCCACTGTGTATGCCAAGTTGAAAATGCGGTAAAAATTATC
NTGGGAAAGGAAAACACCCCAAGTTGCGAAAACGNGGGNACCCCTCTC
GGCAACACTTTTATATACCCCTTCTCACAAAAAACAACCGTTGGGGA
GCCAAAACCAGGGGAATTTAAAATTACACCCCTTGGTAGTTCCCACTG
CCCCCTAAACGAATGTCAAACCTAATTGTTGTTGGGGAGGGGGTTTAT
TTCCCTCTCGCGTAACCCACCTAACTCGTTANNTAGACGCCTTCGGGAG
TAAAGGGCCCCAAG

ID: none

>6-2r well G03 UT080626 Run01 Cimarron 4.00 Even Spacing 104
TTTGATGGCAATATTTAACCCCAACNTANGGCTAGTCCTTCNTCACNGCT
AGGTGATATGCATGCCTCCACCCGTCGTCTTCTGCTAGCACTNTCGATCG
ACGGTCGAATCGATGCATCATTCGCGCACGCAGGGAGAGCTGTCGCCGTN
TCTCTGTCCACTCAGCGGTGGTTCTCTCTCCCCTCACAGTATCATAACTG
ACGAACTTTCTACCTATGCGTACTAACGACTGGGAATNACTCTCACCCCA
CTCTTCCTTCATCACACAAACATCTACAACCACCTAGCAGATCATCATAC
AAGATAGGCAGGGGATTCTCTCCCNAGGGTGTATAGGACGCCNGGGGGGG
AGTTAATTAACACCTGGTTCGNATGTTAAAAAAGAGCCGGCCCGTTGCTG
ATAACGGCCTTTTTAATAACCCCCCNACAAAAATAAANCNAATAAAAAA
AAACGTTTGGTACCCCCACCCCTTAATTNAATTCNCGCGGGGGGGGGGG
TTGTTGGGGGGGGGGGAAAAAAATNTATATTTTCGGGGGGGGGGGGTT
TATTTTCTTTTTTATANGGGGTACCCAGCCGGATTAAAAACCGCCCGGA
AGGATAATTTGATCGCGGGCCAGGTATTTTCGTTTCCCCTGGGCCCCGAA
AAAAAAAGGGGGGTGTTTATTAATAAACCCCGCGANAGAGAGGGGCGTAT
CTTTCCCCTGCCACCGCGCGGGGAGGTGGTGGGTGGGAATACGAGCCTT
GTTGNCCCCNTCAATTTCAAAAAAATTATCCCCCTGNCTGC

ID: none

RECEIVED April, 23, 2015
ACCEPTED May, 11, 2015
