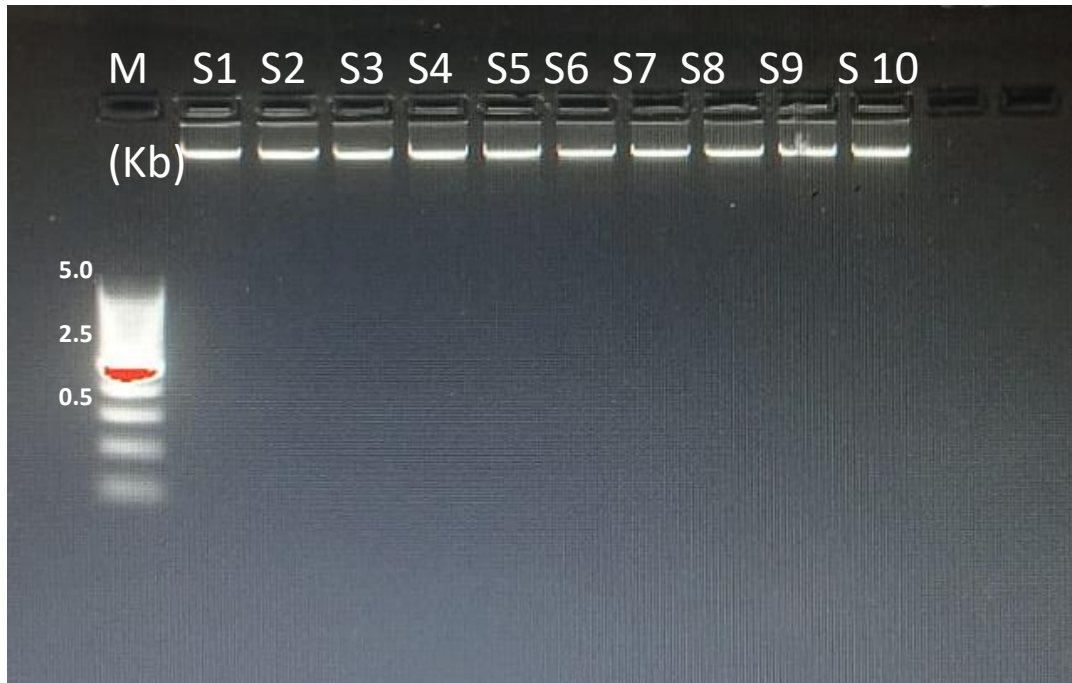
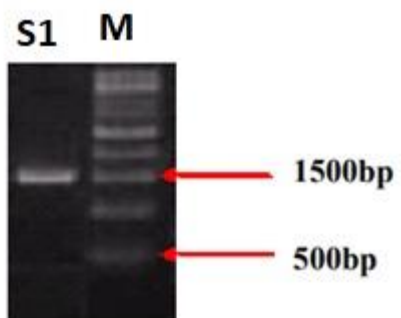


Supplementary Information

(a)



(b)



(c)

Aligned Sequence Data of Sample-TS3: (1209bp)

>TS3

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CACGGCGGCTACCACGTGCTAATCCCCATGTGCCTTAGGGTGAAAGATTTAT
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CAAGGCGACGATCTGTACTTGGTCTGAGAGGATGACCAGGCACACTGGAAGT
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GCGAAAGCCTGACGGAGCAATACCGCGTGAGGGAGGACGGCTTTTGGGTTGT
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AATTATTGGGCGTAAAGCGTCCGTAGGTGGTTTATCAAGTCTGCTGTCAAAGC
GTGCGGCTTAACCGCATAAGGGCAGTGGAACTGATGAACTAGAGTGCATA
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TTGGGAGCCGAGAGACAGGTGGTGTGCATGGCTGTCGTCAGCTCGTGTCTGA
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TGCGTCGGACAAAGAGCAGCCAGCCAGCGATGGTGAGCCAATCTCATAAAC
GACGCTCAGTTCAGATTGCAGGCTGCAACTTGCCTGCATGAATACGACC

(d)

Sl. No.	Organism Name	Accession No.	Percentage Match
1	<i>Phormidesmis molle</i> SAG	MK953011.1	98.85%
2	<i>Leptolyngbya</i> sp. YACCYB525	MH683778.1	98.85%
3	<i>Leptolyngbya</i> sp. YACCYB335	MH683749.1	98.85%
4	<i>Leptolyngbya</i> sp. YACCYB329	MH683747.1	98.85%
5	<i>Leptolyngbya boryana</i> LEGE 15486	MF629803.1	98.85%
6	<i>Leptolyngbya</i> sp. NIES-504	LC319755.1	98.85%
7	<i>Leptolyngbya</i> sp.	LN997861.1	98.85%
8	<i>Leptolyngbya</i> sp	LN997856.1	98.85%
9	<i>Leptolyngbya</i> sp. UIC 10054	KT899567.1	98.85%
10	<i>Leptolyngbya</i> sp. CENA104	EF088333.1	98.85%

(e)

Phylogenetic Tree:

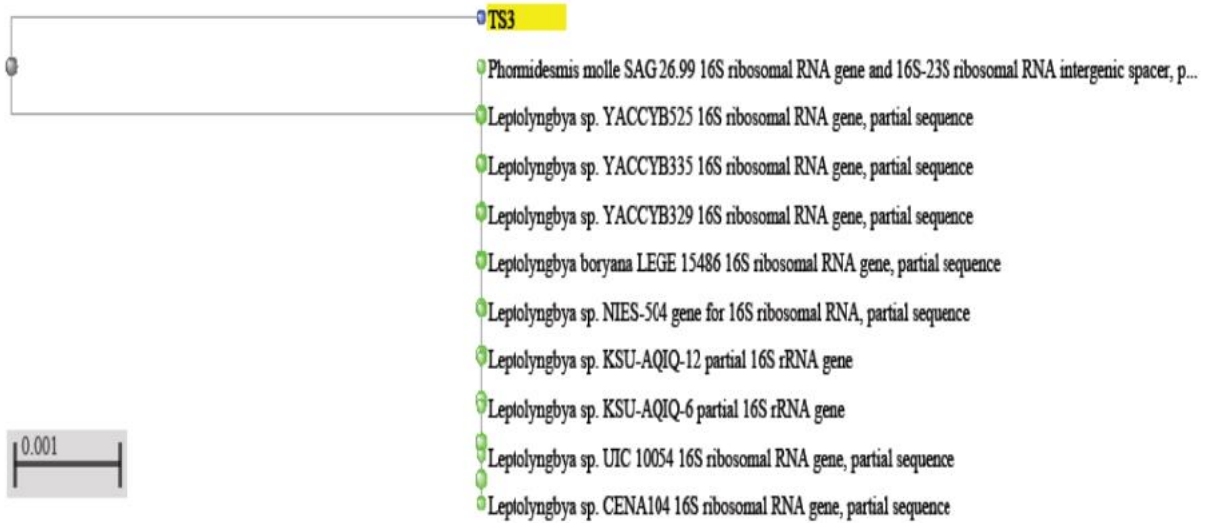
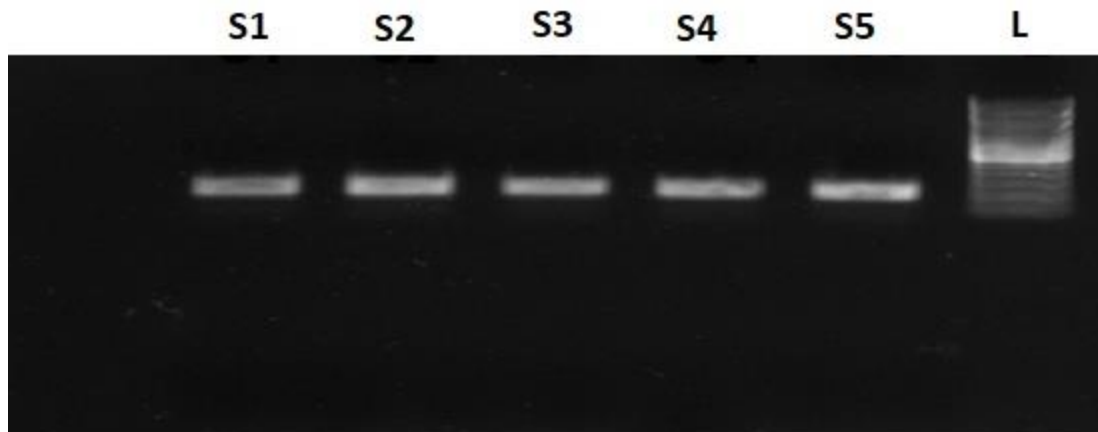


Figure S1: (a) Image represented genomic DNA isolated from 10 soil samples (S1-S10) in 1% agarose gel electrophoresis showing Chromium reductase activity (M-500 bp DNA marker and lane S1-S10 represents extracted genomic DNA from 10 site from where samples collected and showing Chromium reductase activity, (b) Image represented amplified genomic DNA of *L. boryana* in 1% agarose gel electrophoresis from isolated strain before sequencing, (c) Sequence of 16S rDNA (The sequencing was carried out by Chromous Biotech Pvt. Ltd., India), (d) Table of multiple sequence alignment of bacterial 16S rDNA by ClustalW, (e) Phylogenetic tree constructed after confirmation of isolated strain by 16S rDNA. (f) Multiple sequence alignment of bacterial 16S rDNA by ClustalW.

(a)



(b)

>sequence 1

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CGTTGTACAACGAGGACGTCGAGGCCGAAGCGCCCGGAGGCGTGGAAGCGGTTTCGCGAG
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CGACGGCGGTGGTGAGTGTATCGCCCGGGGCCATTGGCGGCTTTGGCGCCAACCATGCCGTGC
GCCAGTCGCTGGTGTCTTCTGGACATGCCGTGCATGCAGATGCCCGAAGCCTACATTGGCGGTGC
CGCAAGCCTGTTTCGACGATTCTGGG
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(c)

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Query 1 CGTTGTACAACGAGGACGTCGAGGCCGAAGCGCCGCCGAGGCGTGAAGCGGTTTCGCG 60
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Sbjct 238 CGTTGTACAACGAGGACGTCGAGGCCGAAGCGCCGCCGAGGCGTGAAGCGGTTTCGCG 297

Query 61 AGGAGATCCGTCGCAGTGATGCGGTGTTGTTTCGTCACGCCAGAATACAACCGATCAGTGC 120
      |||
Sbjct 298 AGGAGATCCGTCGCAGTGATGCGGTGTTGTTTCGTCACGCCAGAACACAACCGATCAGTGC 357

Query 121 CGGGCTGCCTGAAAAATGCCATCGATGTGGGCTCGCGGCCGTACGGGCAAAGTGCCTGGA 180
      |||
Sbjct 358 CGGGCTGCCTGAAAAATGCCATCGATGTGGGCTCGCGGCCGTACGGGCAAAGTGCCTGGA 417

Query 181 GTGGCAAGCCGACGGCGGTGGTGTAGTGTATCGCCCGGGGCCATTGGCGGCTTTGGCGCCA 240
      |||
Sbjct 418 GTGGCAAGCCGACGGCGGTGGTGTAGTGTATCGCCCGGGGCCATTGGCGGCTTTGGCGCCA 477

Query 241 ACCATGCCGTGCGCCAGTCGCTGGTGTCTTGACATGCCGTGCATGCAGATGCCCGAAG 300
      |||
Sbjct 478 ACCATGCCGTGCGCCAGTCGCTGGTGTCTTGACATGCCGTGCATGCAGATGCCCGAAG 537

Query 301 CCTACATTGGCGGTGCCGAAGCCTGTTTCGACGATTCGGG 340
      |||
Sbjct 538 CCTACATTGGCGGTGCCGAAGCCTGTTTCGACGATTCGGG 577
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(d)

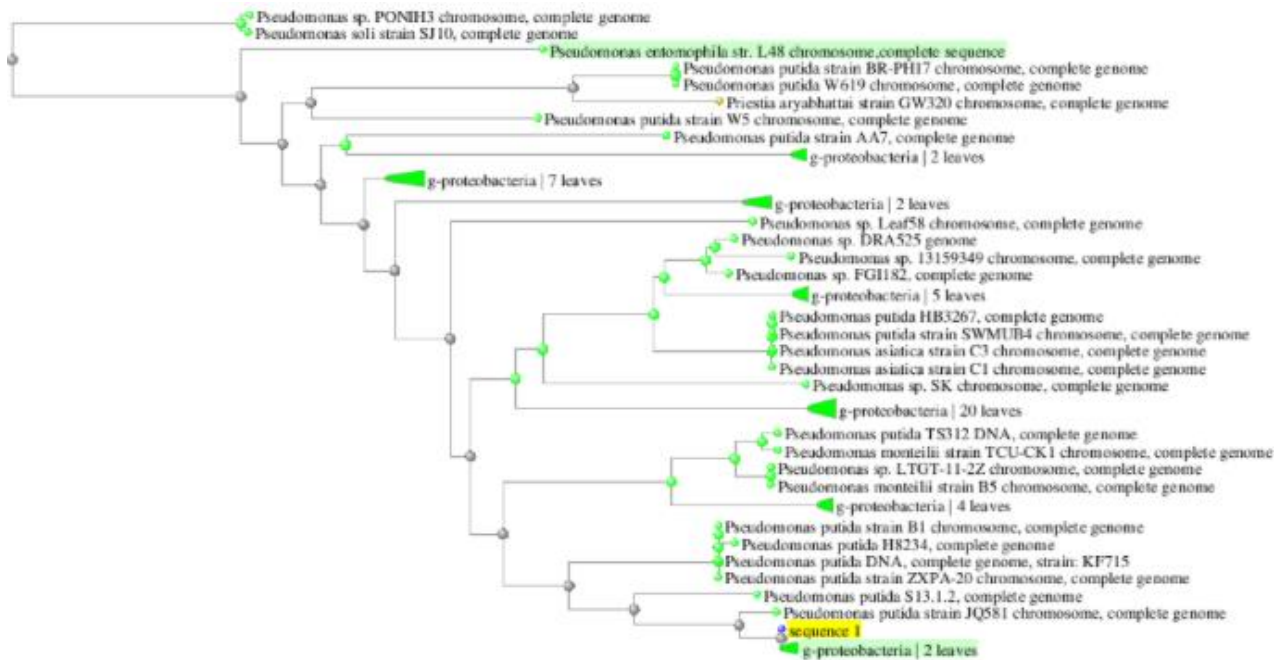


Figure S2: (a) Agarose gel (1%) image of PCR product of Chromium Reductase Gene (340 bp) on from isolated strain showing Chromium reductase activity from sample S1-S5 (b) Partial gene sequence of *ChrR* gene in *L. boryana*, (c) Homology and (d) Phylogenetic analysis of obtained partial gene sequence of *ChrR* gene in *L. boryana*.

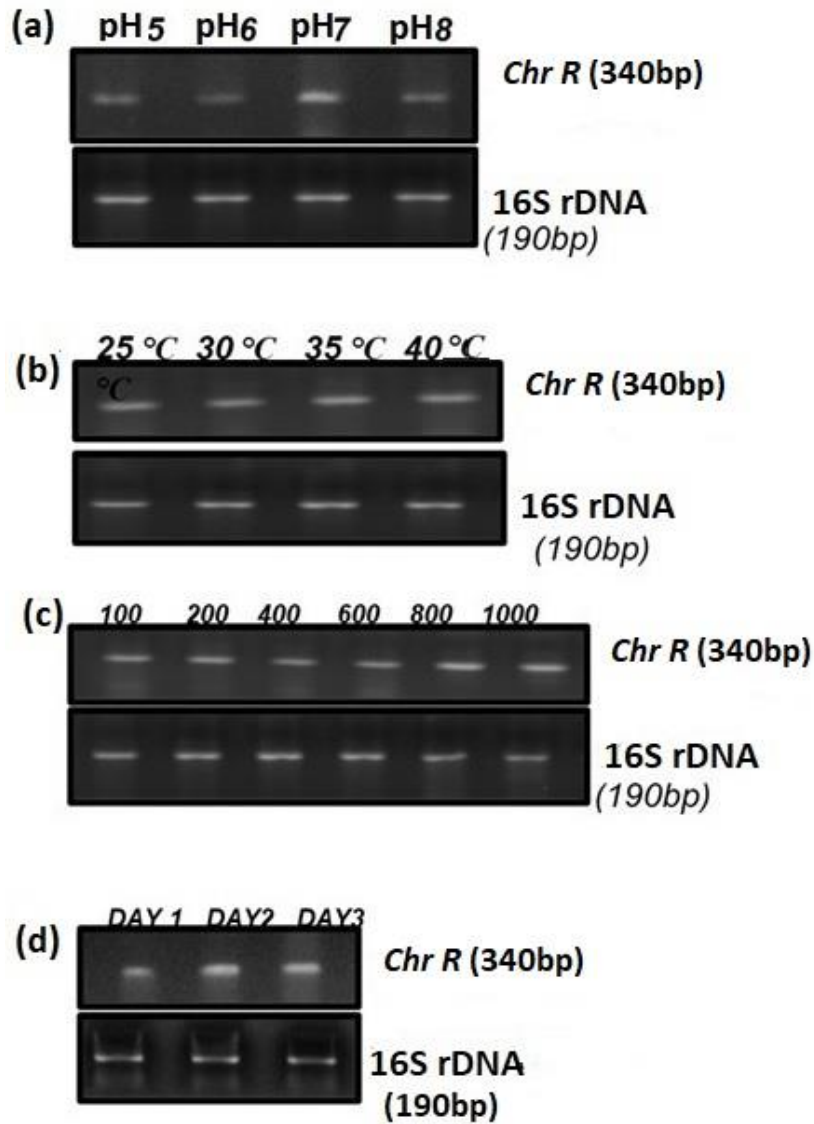


Figure S3: Agarose gel photograph showing ChrR gene and 16S rDNA expression at (a) Different pH (b) Different temperature (c) Different concentration (d) Different time interval.



Figure S4: Gene sequencing chromatogram of *ChrR* gene.