

## Chromatogram results of genes identified

**LOCUS** KJ955499 1926 bp DNA linear BCT 07-AUG-2014  
**DEFINITION** Bacillus cereus strain J17 zinc uptake P-type ATPase gene, complete cds.  
**ACCESSION** KJ955499  
**VERSION** KJ955499.1 GI:669114492  
**KEYWORDS** .  
**SOURCE** Bacillus cereus  
**ORGANISM** Bacillus cereus  
Bacteria; Firmicutes; Bacilli; Bacillales; Bacillaceae; Bacillus;  
Bacillus cereus group.  
**REFERENCE** 1 (bases 1 to 1926)  
**AUTHORS** Joonu,J. and Averal,H.I.  
**TITLE** Bacterial tolerance to heavy metals under the influence of pH,  
temperature and salinity  
**JOURNAL** Unpublished  
**REFERENCE** 2 (bases 1 to 1926)  
**AUTHORS** Joonu,J. and Averal,H.I.  
**TITLE** Direct Submission  
**JOURNAL** Submitted (11-JUN-2014) Zoology, Bishop Heber College, Plot No 127,Golden  
Avenue, K.Sathanur, Trichy-21, Trichy, Tamil Nadu 620021,India  
**COMMENT** ##Assembly-Data-START##  
Sequencing Technology :: Sanger dideoxy sequencing  
##Assembly-Data-END##  
**FEATURES** Location/Qualifiers  
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/organism="Bacillus cereus"  
/mol\_type="genomic DNA"  
/strain="J17"  
/isolation\_source="BHEL effluent"  
/db\_xref="taxon:1396"  
/country="India: Trichy, Tamilnadu"  
/PCR\_primers="fwd\_seq: atgaactcagaagtaaaaacggttacacgca,  
rev\_seq: cgttatttgcttccttttagtaatcgtaagc"  
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/EC\_number="3.6.3.-"  
/note="involved in zinc resistance"  
/codon\_start=1  
/transl\_table=11  
/product="zinc uptake P-type ATPase"  
/protein\_id="AII01137.1"

/db\_xref="GI:669114493"

/translation="MNSEVKT LHAKETISHPSLWDTLKKHYELVFAVASGIFIL  
VGWL FTKNDAMNVGITCYILAYIVGGYAKAKEGIEDTIEEKELNVEMLM  
LFAAIGAAIIGYW AEGAILIFIFALSGAMESYTLKSQKEISALLDLQPEE  
ALRISTGTEERVPVVGELQIN DIILIKPGERVPADGTIHNGETNIDEAAITGEPI  
PNEKRHGDEVFAGTVNLRGAIEVK ITKPSDQTLFQKIIRLVQSAQSEKSPS  
QLFIEKFEGTYVKGVLLVVALMMFVPHFLD WSWNETFYRAMILLVVASP  
CALVAAITPATLSAISNGARNGILFKGGIHLERLASVKA IAFDKTGTLTEGKP  
TVTDVYVRENITEKEVLYITASIESHSTHPLAESIVKYAQHAYD ITLKKP  
EKVEDVTGFGLKGILENNAYKIGKADFIGEETKTFHNGISASLEKEGKTVVY  
ISDEGGILGLIALKDTLRQETIAAIRDLQSIGVEAMITGDNEETAKAIASESNIKEY  
YASCLPETKVETIKKLKEKYGTVMVGDGINDAPALATASIGVAMGEGTDV  
ALETADV VLMKNELSRLSQAIRLSKRMNRIVKQNVIFSLAVIAMLICSNFLQFLA  
LPFGVIGHEG  
STILVILNGLRLLKGSK"

BASE COUNT 651 a 330 c 388 g 557 t

ORIGIN

1 atgaactcag aagtaaaaac gttacacgca aaagaacaa tttctcatcc ctctttatgg  
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121 gttggttggg tatttcaaaa gaacgatgca atgaatgtag gtattacttg ctatatacctt  
181 gcttatatag ttggtggata tgcaaaagca aaagaaggaa ttgaagatac gattgaagaa  
241 aaagagctaa atgttgaaat gctaatgctc tttgcagcta ttggtgctgc aattattggc  
301 tactgggcag aaggggctat ttaatacttc atctttgcac tcagcggctc tatggaatct  
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481 gacattattt taattaaacc cggatgaact gttcctgctg acggtacgat tcataacggt  
541 gaaacaaata tcgatgagc agcaatcaca ggagaacctt ttccaatga gaaaagacat  
601 ggcgatgaag tatttgcagg tactgtaaat ttactggtg ctatcgaagt taaaattacg  
661 aagccgagcg atcaaacatt attccaaaag attatccgctc tcgtccaaag tgcacaaagt  
721 gaaaaatcac catcacaact attcattgaa aagtttgaag gaacatacgt aaaaggtgta  
781 ctactcgttg ttgccttat gatgtcgtt cctcattct tacttgactg gagctggaat  
841 gaaacgtttt atcgcctat gatcttactt gtagtcgcat ctcttctgct gctcgtagct  
901 gccattacac cagctacgtt atcagccatt tctaaccggag cgagaaacgg tattctcttt  
961 aaagcggtta tacatttaga acgcttctt tctgtgaaag caatcgcgtt tgataaaaca  
1021 ggaacattaa cagaaggtaa acctaccgta acagatgtat atgttcgaga aaatataaca  
1081 gaaaaagaag tactttatat tacagcatca attgaaagtc actctacaca tcttttagct  
1141 gaatcattg ttaaatatgc acaacatgag tacgacatta cttaaaaaaa accagaaaag  
1201 gttgaagatg taactggtt ttgtctaaaa ggaatattgg aaaacaacgc ttataaaata  
1261 ggtaaagctg atttatcgg tgaagaaaca aagacattc ataattggtat ttctcctca

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1441 attggtgctg aagcaattat gattactgga gataatgaag aaacggcaaa agcaattgcc  
1501 tetgaaagta atataaagga atattacgca tcatgcttac cagaaacaaa agtgaaacg  
1561 attaaaaagt taaaagaaaa atacggtaca gtagcaatgg ttggagacgg tataaatgat  
1621 gcacctgecc tagctactgc tagcattggt gtcgcaatgg gagaaggaac agatgtagct  
1681 ttagaaactg cagatgttg actgatgaag aacgaactat ctcgcttcc ccaagcaatt  
1741 cgtttatcaa aacgaatgaa cegtattgtg aagcaaaacg taatctttc gctagccgtt  
1801 attgcatgc taattgttc aaactcttg caatttttag ctcttcatt cgggtgttatt  
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1921 aaataa

//

**LOCUS** KJ955500 2367 bp DNA linear BCT 07-AUG-2014  
**DEFINITION** Bacillus cereus strain J17 zinc-transporting ATPase gene, complete  
cds.

**ACCESSION** KJ955500

**VERSION** KJ955500.1 GI:669114494

**KEYWORDS** .

**SOURCE** Bacillus cereus

**ORGANISM** Bacillus cereus

Bacteria; Firmicutes; Bacilli; Bacillales; Bacillaceae; Bacillus;  
Bacillus cereus group.

**REFERENCE** 1 (bases 1 to 2367)

**AUTHORS** Joonu,J. and Averal,H.I.

**TITLE** Bacterial tolerance to heavy metals under the influence of pH,  
temperature and salinity

**JOURNAL** Unpublished

**REFERENCE** 2 (bases 1 to 2367)

**AUTHORS** Joonu,J. and Averal,H.I.

**TITLE** Direct Submission

**JOURNAL** Submitted (11-JUN-2014) Zoology, Bishop Heber College, Plot No 127,  
Golden Avenue, K.Sathanur, Trichy-21, Trichy, Tamil Nadu 620021,  
India

**COMMENT** ##Assembly-Data-START##

Sequencing Technology :: Sanger dideoxy sequencing

##Assembly-Data-END##

**FEATURES** Location/Qualifiers

source 1..2367

/organism="Bacillus cereus"

/mol\_type="genomic DNA"

**/strain="J17"**  
**/isolation\_source="BHEL effluent"**  
**/db\_xref="taxon:1396"**  
**/country="India: Trichy, Tamilnadu"**  
**/PCR\_primers="fwd\_seq: atggctgaagcgttagtgaaaaagaaact,**  
**rev\_seq: cttataaatctttcactcgtaatacacgcat"**

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**/EC\_number="3.6.3.5"**  
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**VNFATK**

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**LDCANCAMKI**  
**ENKVKEMPAVSEATVDFVSKKLRVEVANKRELEATVANITNVVQKLEP**  
**DVKVVREEKN**  
**GHDHGHSHDHGEANVKKMVGRLVVGILTAIAALAGLPQMVTIPLFV**  
**LAYLLIGGDIV**  
**WRAVRNITRGQVFDENFLMAIATVGAFAIQQYSEAVAVMLFYQVGELF**  
**QSIAVNRSRK**  
**SITSLMDIRPDYANVKLGNETKQVSPEDVQIGDYIIVKPGEKVPLDGKVI**  
**EGTSMVDT**  
**SALTGESVPREVEVGNDVLSGFVNQNGVLTIEVTKEFGESTVSKILDLV**  
**QNASSKKAP**  
**TENFITKFARYYTPVVVITAAIMAFIPPLILEGATFSEWIYRALVFLVISC**  
**PCALVVS**  
**IPLGFFGGIGGASKSGVLVKGSNYLEALNDVKYIVFDKTGTLTKGVFKV**  
**TKMEPSEGT**  
**TSEELLEYAAFAEVYSNHPIAQSIRKAYGKSIDEKIIDDYNEISGHGTVV**  
**KVQGKEIF**  
**AGNAKLMRKENIEFKQPETVGTLVHVAVDGRYAGYIVISDEVKEDSKQ**  
**AIQKLKELGI**  
**KKTVMMLTGDAKPVGEAVGKELGLDEVHAE LLPQKVEEIEKIDA AKH**  
**GKEKIAFVGDG**  
**INDTPVLARADVGIAMGGLGSDAAIEAADIVIMTDEPSKIATAVKIAKRT**  
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"

BASE COUNT 845 a 325 c 541 g 656 t

ORIGIN

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241 aataaaattg ctaagaagt atttatatta gaaggttag attgcgcgaa ctgtcaatg  
301 aaaattgaaa ataaagtaa ggaaatgcca gctgtctcag aagcaactgt tgattcgta  
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661 gcgtaagaa acataactcg tggcaagta ttgatgaaa acttctaat ggcaattgca  
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