GENETIC ELEMENT (GENE) BCH-GENE-SCBD-103065-7

LAST UPDATED: 22 JUN 2021

## General information

Name of genetic element

Cold shock protein gene EN

Alternate genetic element name(s) (synonym(s))

cspB EN

Abbreviation

CS-cspB-BACIU EN

Category

Protein coding sequence

Is this genetic element a synthetic molecule?

No

## Donor organism

Donor organism(s)

BCH-ORGA-SCBD-103064-6 ORGANISM | BACILLUS SUBTILIS (BACILLUS, BACIU) |
Bacteria

## Characteristics of the protein coding sequence

Name of the protein expressed by the coding sequence

Cold shock protein B (CSPB) EN

Biological function of the protein

CspB is a type of stress-inducible protein that might be able to protect *B. subtilis* cells from damage caused by ice crystal formation during freezing. EN

Related trait(s) or use(s) in biotechnology

Tolerance to abiotic stress
Cold / Heat
Drought

**Additional Information**

| | |
|---|---|
| The gene of the Bacillus subtilis cold shock protein (CspB) encodes an acidic 67-amino-acid protein (pI 4.31) with a predicted molecular mass of 7,365 Da. Northern RNA blot and primer extension studies indicated the presence of one cspB transcript that was initiated 119 bp upstream of the initiation codon and was found to be induced severalfold when exponentially growing B. subtilis cell cultures were transferred from 37 degrees C to 10 degrees C. Consistent with this cold shock induction of cspB mRNA, a six- to eightfold induction of a cspB-directed beta-galactosidase synthesis was observed upon downshift in temperature. | EN |

Other relevant website addresses and/or attached documents

? Characterization of cspB, a Bacillus subtilis inducible cold shock gene affecting cell viability at low temperatures.pdf *( English )*

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## Further Information

Questions about the Cartagena Protocol on Biosafety or the operation of the Biosafety Clearing-House may be directed to the Secretariat of the Convention on Biological Diversity.

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