

## Biosafety Clearing-House (BCH)

GENETIC ELEMENT (GENE)

BCH-GENE-SCBD-48453-2

LAST UPDATED: 05 JUL 2012

### General information

Name of genetic element

Branching Enzyme 2

EN

Abbreviation

CS-be2

EN

Category

Protein coding sequence

Is this genetic element a synthetic molecule?

No

### Donor organism

Donor organism(s)

[BCH-ORGA-SCBD-12106-6](#) ORGANISM | SOLANUM TUBEROSUM (POTATO, SOLTU) |

Crops

### Characteristics of the protein coding sequence

Name of the protein expressed by the coding sequence

Branching Enzyme 2

EN

Biological function of the protein

The be1 and be2 genes code for starch branching enzymes which catalyse the splitting of alpha-1,4-glucans and the subsequent formation of alpha-1,6-glycosidic bonds between glucan chains during amylopectin synthesis.

The isozymes BE1 and BE2 differ with regard to their amino acid sequences, their expression patten (BE1 is expressed mainly in potato tubers, BE2 mainly in leaves) and their specificity (e.g. size of the transferred carbohydrate chains).

EN

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

Other

altered carbohydrate composition: increased amylopectin content

## Additional Information

Other relevant website addresses and/or attached documents

? [Schwall GP et al. \(2000\) Production of very-high-amylose potato starch by inhibition of SBE A and B. Nat. Biotechnol., 18: 551-554 \( English \)](#)

? [A minor form of starch branching enzyme in potato \( Solanum tuberosum L.\) tubers has a major effect on starch structure cloning and characterisation of multiple forms of SBE A.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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on Biological Diversity**

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