GENETIC ELEMENT (GENE)

BCH-GENE-SCBD-101942-3

LAST UPDATED: 09 FEB 2021

General information

Name of genetic element

5-enolpyruvylshikimate-3-phosphate synthase EN

Abbreviation

CS-epsps-ARTGO EN

Category

Protein coding sequence

Is this genetic element a synthetic molecule?

No

Donor organism

Donor organism(s)

BCH-ORGA-SCBD-101938-6 ORGANISM | ARTHROBACTER GLOBIFORMIS (ARTHROBACTER) | Bacteria

Characteristics of the protein coding sequence

Name of the protein expressed by the coding sequence

5-enolpyruvylshikimate-3-phosphate-synthase EN

Biological function of the protein

The enzyme participates in biosynthesis of the aromatic amino acids phenylalanine, tyrosine and tryptophan. The enzyme is a target for herbicides as these amino acids are only synthesized in plants and microorganisms. Glyphosate acts as a competitive inhibitor for phosphoenolpyruvate, as substrate of EPSPS, and is used as a broad-spectrum systemic herbicide. EN

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

Resistance to herbicides
Glyphosate

Additional Information

Other relevant website addresses and/or attached documents

? 5—Enolpyruvylshikimate 3—Phosphate Synthase: From Biochemistry to Genetic Engineering of Glyphosate Tolerance *(English)*

? US7834249 (GRG23 EPSP synthase - compositions and methods of use).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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