

## Biosafety Clearing-House (BCH)

GENETIC ELEMENT (GENE)

BCH-GENE-SCBD-48368-4

LAST UPDATED: 06 JUL 2012

### General information

Name of genetic element

Amino acid permease 1 gene

EN

Abbreviation

CS-Vfaap1

EN

Category

Protein coding sequence

Is this genetic element a synthetic molecule?

No

### Donor organism

Donor organism(s)

[BCH-ORGA-SCBD-48359-3](#) ORGANISM | VICIA FABIA (BROAD BEAN, TICK BEAN, WINDSOR BEAN, HORSE BEAN, PIGEON BEAN, FIELD BEAN) |  
Crops

### Characteristics of the protein coding sequence

Name of the protein expressed by the coding sequence

Amino acid permease 1

EN

Biological function of the protein

The Vfaap1 gene from Vicia faba encodes an amino acid permease. Amino acid permeases transport amino acids from the plant vascular tissue into the symplasts of plant cells. They are differentially expressed according to plant development and tissue, and exhibit a range of specificity patterns for amino acids.

In the donor organism, Vicia faba, the Vfaa1 gene is expressed predominantly in the storage parenchyma cells of the cotyledons in developing seeds, particularly in early development. The strongest expression of Vfaap1 precedes the beginning of the expression of storage protein genes. VfAAP1 mediates the transport of a range of amino acids (mainly cysteine, arginine, glutamine, serine, leucine, methionine, histidine, glycine and threonine) with

EN

particular emphasis on cysteine.

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

Changes in quality and/or metabolite content

Protein and amino acids

### Additional Information

Other relevant website addresses and/or attached documents

? [Miranda M et al. \(2001\) Amino acid permeases in developing seeds of Vicia faba expression precedes storage protein synthesis and is regulated by amino acid supply. The Plant Journal 28 \(1\), 61-71 \( English \)](#)

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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.

### **Secretariat of the Convention on Biological Diversity**

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