CLAIMS

1. An isolated polynucleotide selected from the following polynucleotides:

(a) a polynucleotide having a nucleotide sequence represented by SEQ ID NO: 2; and

(b) a polynucleotide having a nucleotide sequence having a homology of 90% or higher with the nucleotide sequence of the polynucleotide of (a), wherein a polypeptide encoded thereby maintains stress resistance of the polypeptide encoded by the polynucleotide of (a).

2. The polynucleotide according to claim 1, having a nucleotide sequence represented by SEQ ID NO: 2.

3. An isolated PPAT polypeptide selected from the following polypeptides:

(a) a polypeptide having an amino acid sequence represented by SEQ ID NO: 1; and

(b) a polypeptide having an amino acid sequence having a homology of 90% or higher with the amino acid sequence of the polypeptide of (a), wherein the polypeptide maintains stress resistance of the polypeptide of (a).

4. The PPAT polypeptide according to claim 3, having an amino acid sequence represented by SEQ ID NO: 1.

5. A polynucleotide encoding the polypeptide according to claim 3 or 4.

6. A Jatropha plant transformation vector, wherein the polynucleotide according to claim 1, 2 or 5 is incorporated.

7. A transformant containing the vector according to claim 6.

8. A Jatropha plant transformed by using the vector according to claim 6, the plant being stress resistant transformed Jatropha capable of overexpressing a PPAT polypeptide compared with a wild type.

9. A seed harvested from the stress resistant transformed Jatropha according to claim 8.

10. A method of producing a Jatropha oil by squeezing the seed according to claim 9 and purifying it.

11. A Jatropha oil produced by the production method according to claim 10.

CLAIMS

1. A vector comprising:

(a) a cDNA comprising the polynucleotide represented by SEQ ID NO: 2 or

(b) a polynucleotide encoding a phosphopantetheine adenylyltransferase (PPAT) polypeptide having a homology of 95% or higher with the amino acid sequence of SEQ ID NO: 1, wherein said polynucleotide is operably linked to a heterologous regulatory element.

2. A cDNA comprising the polynucleotide represented by SEQ ID NO: 2.

3. An isolated PPAT polypeptide other than the polypeptide of SEQ ID NO: 1, wherein said polypeptide has an amino acid sequence having a homology of 95% or higher with the amino acid sequence of SEQ ID NO: 1, and wherein the polypeptide catalyzes an exchange reaction between 4'-phosphopantetheine and dephospho-coenzyme A.

4. A polynucleotide encoding the polypeptide according to claim 3.

5. The vector according to claim 1, wherein said vector is a *Jatropha* plant transformation vector.

6. A transformant containing the vector according to claim 5.

7. A transgenic *Jatropha* plant transformed with the vector according to claim 5, wherein said transgenic plant has increased stress tolerance when compared to a corresponding control *Jatropha* plant.

8. A transgenic seed harvested from the stress resistant transgenic *Jatropha* plant according to claim 7, wherein the seed comprises the vector.

9. A method of producing a *Jatropha* oil, comprising: squeezing the seed according to claim 8 to obtain a material oil, and purifying the material oil.

10. A method of producing a stress resistant *Jatropha* plant, comprising:

producing an isolated polynucleotide selected from the following polynucleotides:

(a) a cDNA comprising the polynucleotide represented by SEQ ID NO: 2; or

(b) a polynucleotide encoding a PPAT polypeptide having a homology of 95% or higher with the amino acid sequence of SEQ ID NO: 1;

producing a *Jatropha* plant transformation vector comprising said isolated polynucleotide; and

transforming a *Jatropha* plant with said vector.