

ORIGINAL

5156 DELNP 12

11 JUN 2012

Abstract: (EN)The invention relates to the use, for producing partially or totally apomictic plants, of a gene, of a transcript of this gene, or of the ORF thereof, encoding a protein comprising a DNA methyltransferase motif.

CLAIMS

1 - The use, for producing partially or totally apomictic plants, of a gene, of a transcript of this gene, or of its ORF, coding for a protein with a DNA methyltransferase motif.

2 - The use as claimed in claim 1, of a gene coding for a protein of sequence SEQ ID No.1 or SEQ ID No.5.

3 - The use as claimed in claim 2, characterized in that it is the DMT103 gene corresponding to sequence SEQ ID No.2, or of a transcript of said gene corresponding to sequence SEQ ID No.3, or of its ORF of sequence SEQ ID No.4.

4 - The use as claimed in claim 2, characterized in that it is the DMT102 gene corresponding to sequence SEQ ID No.6, or of the transcript of said gene corresponding to sequence SEQ ID No.7, or of its ORF of sequence SEQ ID No.8.

5 - The use as claimed in any one of claims 1 to 3, characterized in that the gene is inactivated by mutagenesis.

6 - A method for inducing, in cultivated species such as maize, rice or wheat, a totally or partially apomictic phenotype, characterized in that it comprises the targeted inactivation, by a transposable element, for example of the Mutator type, of a gene as defined in any one of claims 1 to 4, of a transcript of this gene as claimed in claim 1 or 4, or of its ORF as claimed in claim 1 or 5, and identification of the mutated locus.

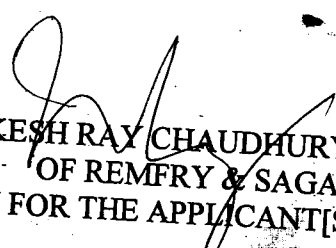
7 - An application of the method as claimed in claim 6, for the propagation of unstable genotypes,

control of pollen contaminations, improvement of plants and commercial seed production.

8 - Totally or partially apomictic plants of
5 cultivated species such as maize, rice or wheat, or
seeds thereof, characterized in that they comprise
inactivated alleles of a gene as defined in any one of
claims 1 to 4.

10 9 - Totally or partially apomictic plants of
cultivated species such as maize, rice or wheat, or
seeds thereof, obtained as claimed in claim 5.

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	Sexuality				Apomixis			
	mei	gam	emb	soma	mei	gam	emb	soma
CHR106								
CHI20								
DMT102								
DMT103								
DMT107								
HXA102								
MBD109								
SDG110								
ACT11								

FIGURE 1

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Homologies DMT103/DRM2

[illegible]

FIGURE 2

Homologies DMT102/CMT3

[illegible]

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Ovule in gametogenesis



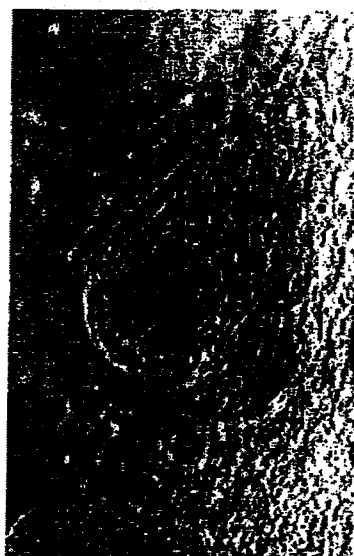
DMT103 probe

Ovule in gametogenesis



DMT102 probe

Ovule in meiosis



DMT102 probe

FIGURE 3

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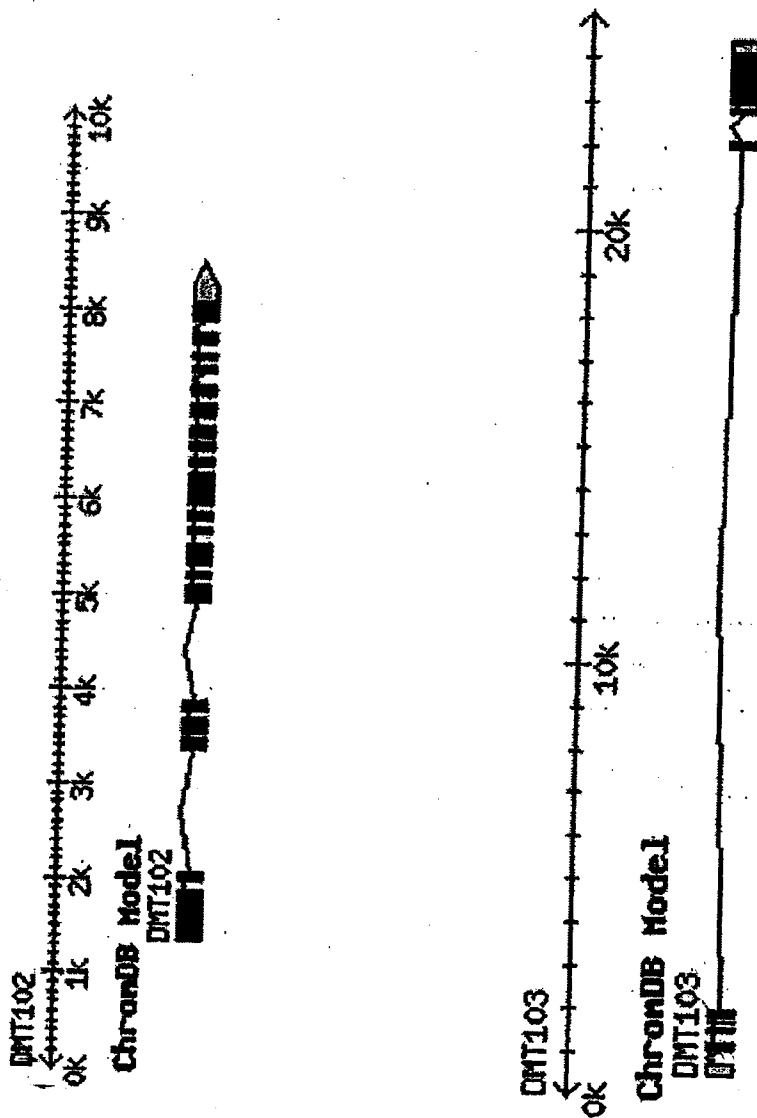


FIGURE 4

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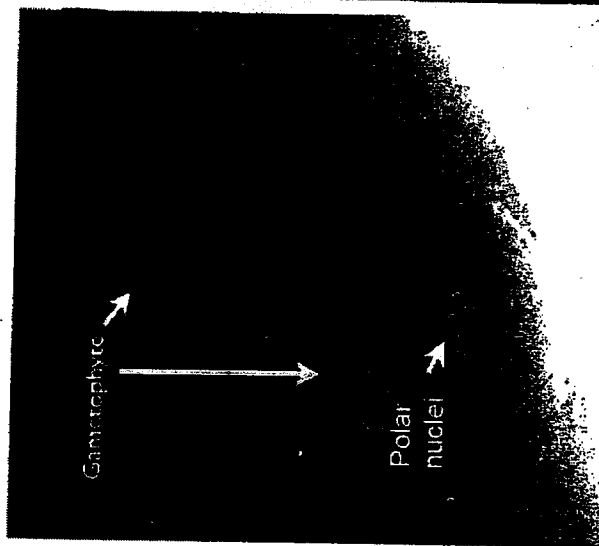
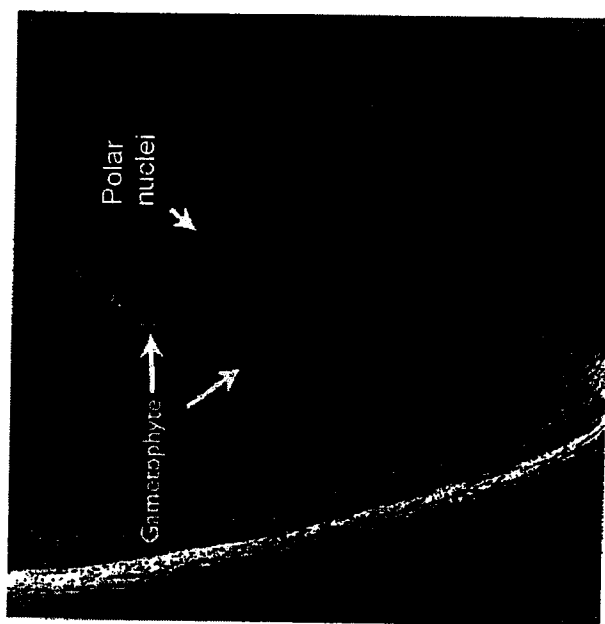
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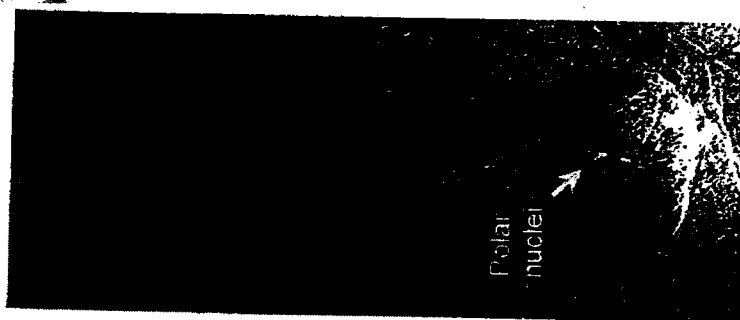
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dmt103
Mature
Gametophyte



W23
Mature
Gametophyte

FIGURE 5

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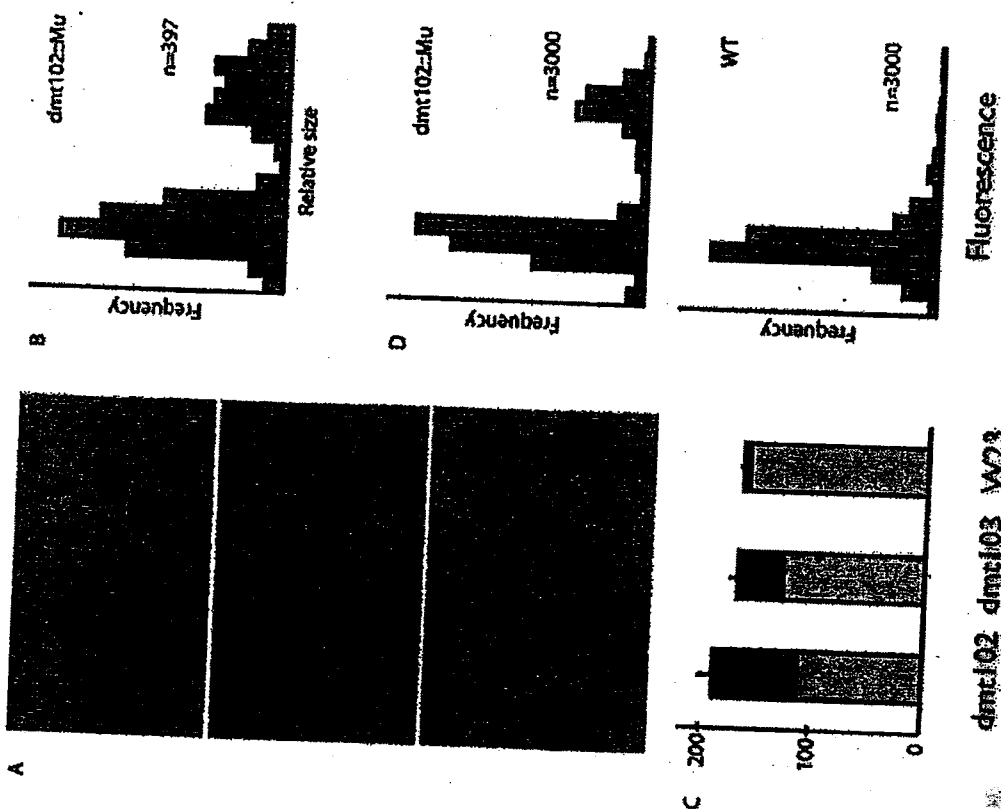


FIGURE 6

