

Title (en)  
PAPAVER BRACTEATUM WITH MODIFIED ALKALOID CONTENT

Title (de)  
ARMENISCHER MOHN MIT MODIFIZIERTEM ALKALOIDGEHALT

Title (fr)  
PAPAVER BRACTEATUM À TENEUR EN ALCALOÏDES MODIFIÉE

Publication  
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Application  
**EP 11837323 A 20111031**

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Abstract (en)  
[origin: WO2012058714A1] The present invention relates to genetically modified plants of the species *Papaver bracteatum* wherein the type or amount of one or more alkaloids produced by the plants has been modified. Specifically, the genetically modified plants have an increased expression of one or more of thebaine 6-O-demethylase, codeine O-demethylase and/or codeinone reductase relative to wild type *P. bracteatum* such that the genetically modified poppy plants produce an increased quantity of an alkaloid selected from codeine, oripavine and/or morphine relative to a wild type *P. bracteatum*. Also provided are progeny plants having the genetically modified poppy plants described above as a parent; mutant or derivative plants of the aforementioned plants; reproductive material derived from, straw produced from, straw concentrate produced from, latex derived from, or one or more isolated cells derived from, the aforementioned plants. Methods for producing an alkaloid from the aforementioned plants are also provided, together with nucleic acid and amino acid sequence variants of the 6-O-demethylase and codeine O-demethylase genes.

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Citation (search report)  
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• [Y] SARA ROSTAMPOUR ET AL: "Influence of *Agrobacterium rhizogenes* on induction of hairy roots and benzyloquinoline alkaloids production in Persian poppy (*Papaver bracteatum* Lindl.): preliminary report", WORLD JOURNAL OF MICROBIOLOGY AND BIOTECHNOLOGY, KLUWER ACADEMIC PUBLISHERS, DO, vol. 25, no. 10, 20 June 2009 (2009-06-20), pages 1807 - 1814, XP019734669, ISSN: 1573-0972, DOI: 10.1007/S11274-009-0081-8  
• [T] SHARAFI ALI ET AL: "Metabolic engineering of morphinan alkaloids by over-expression of codeinone reductase in transgenic hairy roots of *Papaver bracteatum*, the Iranian poppy", BIOTECHNOLOGY LETTERS, vol. 35, no. 3, March 2013 (2013-03-01), pages 445 - 453, XP002721216  
• See references of WO 2012058714A1

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