



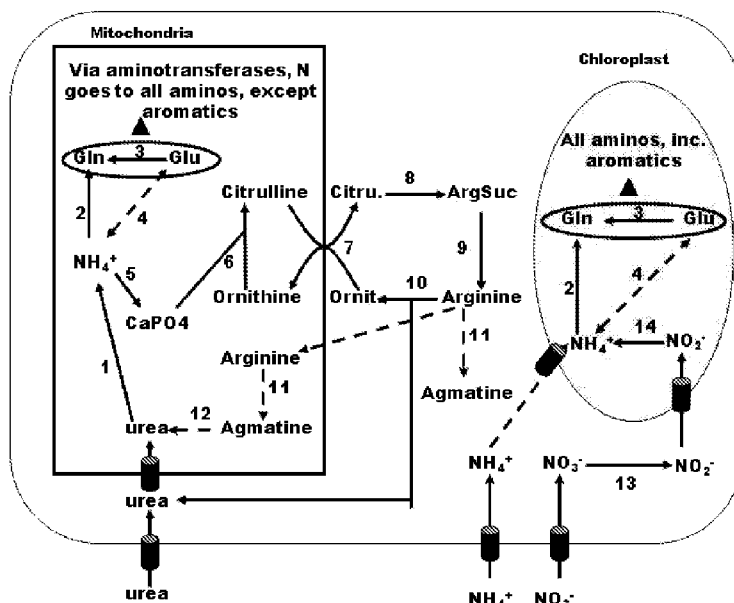
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[Continued on next page]

(54) Title: ENGINEERED MICROALGAE WITH ENHANCED LIPID PRODUCTION

Figure 1



(57) Abstract: Described herein are engineered microalgae that exhibit enhanced lipid production during exponential growth. Such engineered microalgae are useful, for example, for the production of biofuels.

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A. CLASSIFICATION OF SUBJECT MATTER*C12N 1/13(2006.01)i, C12N 15/63(2006.01)i, C12P 7/64(2006.01)i, C12N 15/52(2006.01)i*

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

C12N 1/13; C12P 5/02; C12M 1/36; C12P 1/00; C12P 7/04; C12N 15/09; C12P 1/04; C12P 7/00; C12N 1/12; C12P 7/64; C12Q 1/68

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: microalgae, lipid, carbon assimilation, nitrogen assimilation, diatom, reductase, decarboxylase, fucoxanthin binding protein promoter, rubisco, carbonic anhydrase, etc.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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Y	NOEMIE MANUELLE DORVAL COURCHESNE et al. "Enhancement of lipid production using biochemical, genetic, and transcription factor engineering approaches." In: Journal of Biotechnology. 20 April 2009, Vol.141(1-2), pp.31-41, ISSN 0168-1656. See Abstract; page 33, right column, lines 1-15.	2,3,17,18
Y	US 06027900 A (F. C. THOMAS ALLNUTT et al.) 22 February 2000 See Abstract; Table 1; column 6, lines 56-67; claims 5 and 7.	12,20
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 Further documents are listed in the continuation of Box C. See patent family annex.

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"&" document member of the same patent family


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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
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A	US 2008-0160591 A1 (BRYAN WILLSON et al.) 03 July 2008 See the whole document.	1-20
A	US 2010-0151539 A1 (SCOTT FRANKLIN et al.) 17 June 2010 See the whole document.	1-20
A	WO 2009-073822 A2 (THE OHIO STATE UNIVERSITY RESEARCH FOUNDATION) 11 June 2009 See the whole document.	1-20

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