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(54) Title: SYSTEM FOR CAPTURING AND MODIFYING LARGE PIECES OF GENOMIC DNA AND CONSTRUCTING ORGANISMS WITH SYNTHETIC CHLOROPLASTS

(57) Abstract: The functional analysis of genes frequently requires the manipulation of large genomic regions. A yeast-bacteria shuttle vector is described that can be used to clone large regions of DNA by homologous recombination. Also described is a method for isolating entire genomes, including chloroplast genomes, or large portions thereof, and manipulating the same. Also described are methods for determining minimal genomes, minimal pathway requirements, and minimal organelle genomes.



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A. CLASSIFICATION OF SUBJECT MATTER*C12N 15/00(2006.01)i, C12N 15/09(2006.01)i, C07H 21/04(2006.01)i, C07K 14/52(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)

IPC C12N 15/00, 15/09, 15/29, 15/82, C07H 21/04, C07K 14/52, A01H 5/00

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

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

eKIPASS(KIPO internal), PubMed(NCBI), JPO, USPTO, Google

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 7,129,391 B1 (Henry Daniell) October 31, 2006. See Abstract, Examples 1-16, column 16 line 34 - column 22 line 59	44, 47-53, 56-63, 75, 76, 87-90, 103 and 104
Y		1-43, 45, 46, 54, 55, 64-74, 77-86, 91-102 and 105-131
Y	US 5,866,404 A (M. Suzanne Bradshaw) February 2, 1999. See Abstract, column 3 line 12 - column 11 line 55	1-43, 45, 46, 54, 55, 64-74, 77-86, 91-102 and 105-131
A		44, 47-53, 56-63, 75, 76, 87-90, 103 and 104
A	M. Suzanns Bradshaw et al. 'A new vector for recombination-based cloning of large DNA fragments from yeast artificial chromosomes' Nucleic Acids Research, Vol. 23, No. 23, pp. 4850-4856, 1995. See Abstract, Pages 4850-4852(Material and methods)	1-131
A	Delin Liang et al. 'Site-directed mutagenesis and generation of chimeric viruses by homologous recombination in yeast to facilitate analysis of plant-virus interactions' MPMI, Vol. 17, No. 6, pp. 571-576, 2004. See Abstract, Fig. 1, Pages 575-576(Material and methods)	1-131

 Further documents are listed in the continuation of Box C. See patent family annex.

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Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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