Title: COMPOSITIONS AND METHODS FOR RAPIDLY GENERATING RECOMBINANT NUCLEIC ACID MOLECULES

Abstract: A method of generating a double stranded (ds) recombinant nucleic acid molecule covalently linked in both strands by contacting two or more ds nucleotide sequences with a topoisomerase under conditions such that both termini of at least one end of a first ds nucleotide sequence are covalently linked by the topoisomerase to both termini of at least one end of a second ds nucleotide sequence is provided. Also provided is a method for generating a ds recombinant nucleic acid molecule covalently linked in one strand, by contacting two or more ds nucleotide sequences with a type IA topoisomerase under conditions such that one strand, but not both strands, of one or both ends of a first ds nucleotide sequence are covalently linked by the topoisomerase. Compositions for performing such methods, and compositions generated from such methods also are provided, as are kits containing components useful for conveniently practicing the methods.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC(7) : C10Q 1/68; C12P 19/94; C07H 21/02, 21/04
US CL : 435/6, 7.1, 91.1, 91.2; 536/22.1,23.1,24.2,24.3,24.31,24.32,24.33
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)
U.S. : 435/6, 7.1, 91.1, 91.2; 536/22.1,23.1,24.2,24.3,24.31,24.32,24.33

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)
EAST-USPATFULL, PGPUB, EPO,PWO, IBM TECH, STN- biosis, medline, cancerlit, biotechnls,lifesci,esplus, embase, search terms: topoisomerase, ds, double, covalent, bond

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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</table>

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

Date of the actual completion of the international search
15 JULY 2002

Date of mailing of the international search report
12 SEP 2002

Authorized officer

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