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(54) Title: NOVEL PHOTOLABILE PROTECTIVE GROUPS FOR IMPROVED PROCESSES TO PREPARE OLIGONUCLEOTIDE ARRAYS

(57) Abstract: The present invention discloses novel and improved nucleosidic and nucleotidic compounds that are useful in the light-directed synthesis of oligonucleotides, as well as, methods and reagents for their preparation. These compounds are characterized by novel photolabile protective groups that are attached to either the 5'- or the 3'- hydroxyl group of a nucleoside moiety. The photolabile protective group is comprised of a 2-(2-nitrophenyl) ethoxycarbonyl skeleton with at least one substituent on the aromatic ring that is either an aryl, an aroyl, a heteroaryl or an alkoxy carbonyl group. The present invention includes the use of the aforementioned compounds in light-directed oligonucleotide synthesis, the respective assembly of nucleic acid microarrays and their application.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B01J19/00 C07H19/00 C07H21/00

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)
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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 practical, search terms used)

EPO-Internal, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	R. ERITJA ET AL.: "A synthetic procedure for the preparation of oligonucleotides without using ammonia and its application for the synthesis of oligonucleotides containing 0-4-alkyl thymidines" TETRAHEDRON, vol. 48, no. 20, 1992, pages 4171-4182, XP002140390 * compounds 5, 7 and 9 page 4173 * * page 4171, line 5 from the bottom to page 4172 line 12 * ----- -/--	1-27

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>AVINO ET AL.: "New carbamate Supports for the preparation of 3' amino-modified Oligonucleotides" BIOORGANIC MEDICINAL CHEMISTRY, vol. 4, no. 10, 1996, pages 1649-1658, XP002302677 abstract; figure 4</p> <p>-----</p>	1-27
A	<p>HASAN A ET AL: "Photolabile protecting groups for nucleosides: Synthesis and photodeprotection rates" TETRAHEDRON, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL, vol. 53, no. 12, 24 March 1997 (1997-03-24), pages 4247-4264, XP004477215 ISSN: 0040-4020 cited in the application the whole document</p> <p>-----</p>	1-33
A	<p>WO 02/20150 A (AFFYMETRIX INC ; MCGALL GLENN H (US); BARONE ANTHONY D (US)) 14 March 2002 (2002-03-14) claims 1,54; figure 7</p> <p>-----</p>	1-33
A	<p>WO 02/062747 A (BEIER MARKUS ; FEBIT AG (DE)) 15 August 2002 (2002-08-15) claim 1</p> <p>-----</p>	1-33

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No PCT/EP2004/050158

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