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- (71) Applicant (for DE only): **ROCHE DIAGNOSTICS GMBH** [DE/DE]; Sandhofer Straße 116, 68305 Mannheim (DE).
- (71) Applicant (for all designated States except DE, US): **F. HOFFMANN-LA ROCHE AG** [CH/CH]; Grenzacher Strasse 124, CH-4070 Basel (CH).
- (72) Inventors; and  
(71) Applicants (for US only): **BERGMANN, Frank** [DE/DE]; Faltergatter 5, 82393 Iffeldorf (DE). **HEINDL, Dieter** [DE/DE]; Sternstrasse 4, 82396 Paehl (DE). **JOSEL, Hans-Peter** [DE/DE]; Ulmenstrasse 28, 82362 Weilheim (DE). **LUCKEY, John** [US/US]; S7545 W. Grandview Ave., Merrimac, Wisconsin 53561 (US).
- (74) Agents: **MISERA, Simon** et al.; P.O. Box 11 52, Nonnenwald 2, 82372 Penzberg (DE).

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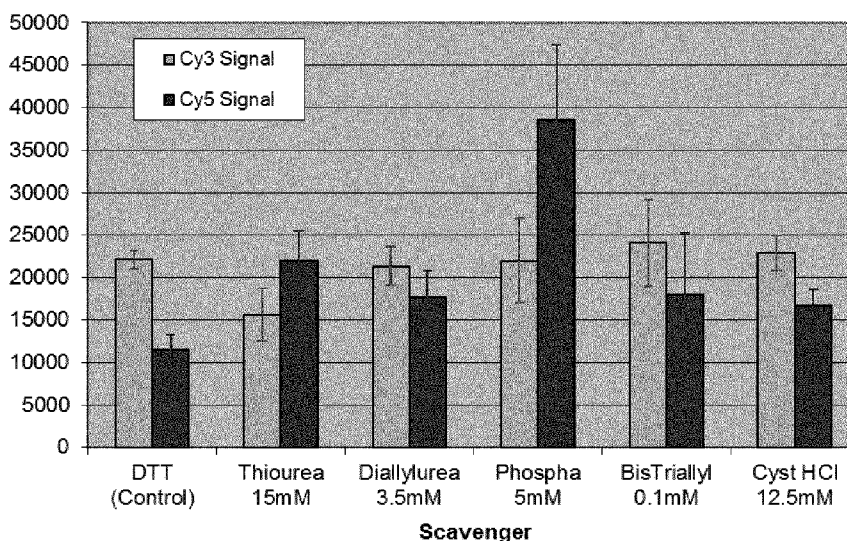
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[Continued on next page]

(54) Title: OZONE SCAVENGERS FOR NUCLEIC ACID HYBRIDIZATION EXPERIMENTS

Cy5 & Cy3 Signal vs Scavenger **Fig. 1**



(57) Abstract: The present invention relates to a method, a buffer and a kit for scavenging reactive oxygen species in nucleic acid hybridization experiments.

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INTERNATIONAL SEARCH REPORT

International application No  
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A. CLASSIFICATION OF SUBJECT MATTER  
INV. C12Q1/68  
ADD.  
  
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)  
C12Q  
  
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)  
EPO-Internal, WPI Data, BIOSIS, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2004/108966 A1 (AGILENT TECHNOLOGIES INC [US]; LEPROUST ERIC M [US]; KE WINNY W [US];) 16 December 2004 (2004-12-16) page 20 - page 21 page 24 - page 25 page 34 - page 35	1-13
X,P	WO 2012/037394 A1 (IBIS BIOSCIENCES INC [US]; ESHOO MARK W [US]; PICURI JOHN [US]) 22 March 2012 (2012-03-22) paragraph [0004]; claims paragraph [0010]	1-13
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Further documents are listed in the continuation of Box C.  See patent family annex.

\* Special categories of cited documents :

<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&amp;" document member of the same patent family</p>
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Date of the actual completion of the international search  13 June 2013	Date of mailing of the international search report  26/08/2013
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer  Reuter, Uwe
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## INTERNATIONAL SEARCH REPORT

International application No  
PCT/EP2013/051915

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
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X	<p>A. Stuart: "Hybridization of Yeast cDNAs to Microarrays",  <sup>3</sup>  22 September 2009 (2009-09-22),  XP002698814,  Retrieved from the Internet:  URL:<a href="http://phobos.ramapo.edu/~astuart/CMB_Lab/Genisphere_hybridiz_protocol.doc">http://phobos.ramapo.edu/~astuart/CMB_Lab/Genisphere_hybridiz_protocol.doc</a>  [retrieved on 2013-06-13]  page 3  &amp; "Index of /~astuart/CMB_Lab",  <sup>3</sup>  22 September 2009 (2009-09-22),  Retrieved from the Internet:  URL:<a href="http://phobos.ramapo.edu/~astuart/CMB_Lab/">http://phobos.ramapo.edu/~astuart/CMB_Lab/</a>  [retrieved on 2013-06-13]</p> <p style="text-align: center;">-----</p>	1-13
X	<p>Luckey et al.: "Ozone effects on NimbleGen dual-color DNA labeling microarray data quality",  NimbleGen Technical Note January 2012,  21 January 2012 (2012-01-21), XP002698815,  Retrieved from the Internet:  URL:<a href="http://iucontent.iu.edu.sa/scholars/workflow%20development/Ozone%20effects%20on%20NimbleGen%20dual-color%20DNA%20labeling%20microarray%20data%20quality.pdf">http://iucontent.iu.edu.sa/scholars/workflow%20development/Ozone%20effects%20on%20NimbleGen%20dual-color%20DNA%20labeling%20microarray%20data%20quality.pdf</a>  [retrieved on 2013-06-13]  page 2, last paragraph</p> <p style="text-align: center;">-----</p>	1-13
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## INTERNATIONAL SEARCH REPORT

International application No  
PCT/EP2013/051915

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>Chan et al.: "Development of a Dye-Protecting Solution for Preventing Fluorescent Dye Degradation on DNA microarrays",</p> <p>15 March 2004 (2004-03-15), XP002698817, Retrieved from the Internet: URL:<a href="http://www.chem.agilent.com/library/po-sters/public/5989_0924en_ozone_abrf.pdf">http://www.chem.agilent.com/library/po-sters/public/5989_0924en_ozone_abrf.pdf</a> [retrieved on 2013-06-13] page 2</p> <p style="text-align: center;">-----</p>	1-13

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-13(partially)

A method for scavenging reactive oxygen species in nucleic acid hybridization experiments comprising the steps of ) providing nucleic acids labeled with at least one detection dye,ii) hybridizing the labeled nucleic acids to substantially complementary nucleic acids which are immobilized on a solid support,iii) removing from the solid support the labeled nucleic acids which are not hybridized to the substantially complementary nucleic acids,iv) washing the solid support at least once with a buffer comprising a compound having at least one scavenger group, wherein the at least one scavenger group is a sulfur(II) containing group, wherein the compound is capable of scavenging reactive oxygen species and wherein the compound comprises at least one entity capable of binding to nucleic acids, and v) detecting the fluorescence signal of the detection dye.

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2. claims: 14-16(completely); 1-13(partially)

A method for scavenging reactive oxygen species in nucleic acid hybridization experiments comprising the steps of ) providing nucleic acids labeled with at least one detection dye,ii) hybridizing the labeled nucleic acids to substantially complementary nucleic acids which are immobilized on a solid support,iii) removing from the solid support the labeled nucleic acids which are not hybridized to the substantially complementary nucleic acids,iv) washing the solid support at least once with a buffer comprising a compound having at least one scavenger group, wherein the at least one scavenger group is a phosphor(III) containing group, wherein the compound is capable of scavenging reactive oxygen species and wherein the compound comprises at least one entity capable of binding to nucleic acids, and v) detecting the fluorescence signal of the detection dye, as well as a buffer for nucleic acid hybridization experiments and a kit.

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3. claims: 1-13(partially)

A method for scavenging reactive oxygen species in nucleic acid hybridization experiments comprising the steps of ) providing nucleic acids labeled with at least one detection dye,ii) hybridizing the labeled nucleic acids to substantially complementary nucleic acids which are immobilized on a solid support,iii) removing from the solid support the labeled nucleic acids which are not hybridized to the substantially complementary nucleic acids,iv) washing the solid support at least once with a buffer comprising a compound having at least one scavenger group, wherein the at

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

least one scavenger group is an olefinic group, wherein the compound is capable of scavenging reactive oxygen species and wherein the compound comprises at least one entity capable of binding to nucleic acids, and v) detecting the fluorescence signal of the detection dye.

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No

PCT/EP2013/051915

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