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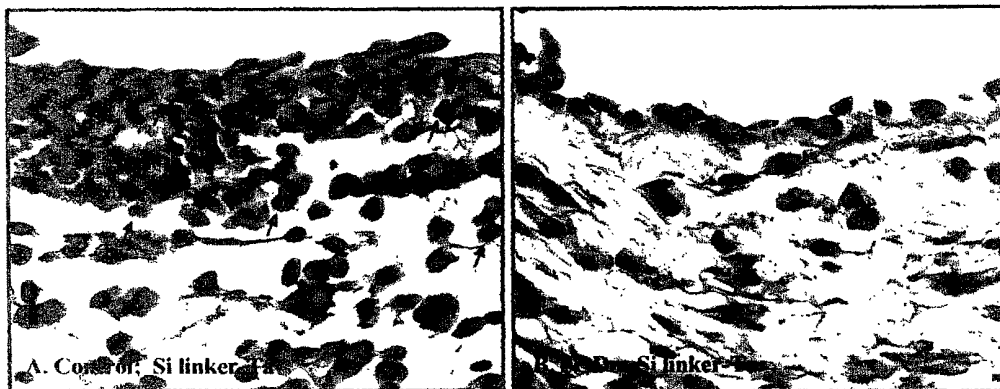
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For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: BIOMATERIALS MODIFIED WITH SUPEROXIDE DISMUTASE MIMICS



(57) Abstract: The present invention relates to biomaterials modified with non-proteinaceous catalysts for the dismutation of superoxide, and processes for making such materials. This modification may be by covalent conjugation, copolymerization, or admixture of the non-proteinaceous catalysts with the biomaterial. The resulting modified biomaterials exhibit a marked decrease in inflammatory response and subsequent degradation when placed in contact with vertebrate biological systems.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07F13/00 C07F15/02 A61L27/54

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 7 C07F A61L A61K

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, WPI Data, PAJ, 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 Y	US 5 386 012 A (STRID LARS) 31 January 1995 (1995-01-31) abstract column 1 -column 2 claims --- -/--	1,58-64, 66-70 1-58,61, 64, 66-78, 95-102, 119,186, 187,189, 195

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

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"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

"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.

"&" document member of the same patent family

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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.
Y	EP 0 524 161 A (MONSANTO CO) 20 January 1993 (1993-01-20) abstract page 3 -page 11 page 16 ---	1-58,61, 64, 66-78, 95-102, 119,186, 187,189, 195
X	US 5 874 421 A (WEISS RANDY H ET AL) 23 February 1999 (1999-02-23) cited in the application column 5 -column 9 column 19 example 23 ---	195
A	US 5 879 359 A (CALLEGARO LANFRANCO ET AL) 9 March 1999 (1999-03-09) cited in the application abstract column 3, line 33-62 column 5 ---	1,9,26, 42,64, 78,103, 139,153, 187,192, 193
A	EP 0 747 069 A (COOK INC) 11 December 1996 (1996-12-11) abstract column 4, line 16-46 column 9, line 5-24 column 11, line 21 -column 12, line 24 column 14, line 19-58 column 19, line 13-40 claim 3 ---	1,9,10, 26,34, 63,64, 78,79, 95,139, 153,162, 187,191, 193
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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.
A	US 5 873 904 A (BATES BRIAN L ET AL) 23 February 1999 (1999-02-23) abstract column 1, line 12-17 column 3, line 3-7 claims ---	1,9,10, 64,78, 79,187, 191
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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.
A	WO 97 33588 A (MONSANTO CO ;RILEY DENNIS P (US)) 18 September 1997 (1997-09-18) the whole document ---	1-3
A	US 5 227 405 A (FRIDOVICH IRWIN ET AL) 13 July 1993 (1993-07-13) abstract column 6, line 6-26 -----	1

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Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

Although claim 188 is directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound.
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

As a result of the prior review under R. 40.2(e) PCT,
no additional fees are to be refunded.

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☒ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. Claims: 1,58-63,64-77,119 (entirely) ; 9,78,153 (partially)

a biomaterial with a non-proteinaceous catalyst for the dismutation of superoxide and the process of producing a biomaterial by conjugation of the non-proteinaceous catalyst

2. Claims: 2-8 (entirely)

a biomaterial wherein the non-proteinaceous catalyst for the dismutation of superoxid is selected from the group consisting of manganese(II) or iron (II/III) pentaaza complexes

3. Claims: 10-17,79-86 (entirely) ; 9,78 (partially)

the biomaterial and the process for producing the biomaterial wherein the biomaterial is a metal provided with a non-proteinaceous catalyst for the dismutation of superoxide

4. Claims: 18-25,87-94, 154-161 (entirely) ; 9,78, 153 (partially)

the biomaterial and the process for producing the biomaterial and for co-polymerisation with a non-proteinaceous catalyst for dismutation of superoxide, wherein the biomaterial is a ceramic provided with a non-proteinaceous catalyst for the dismutation of superoxide

5. Claims: 26-41,95-102, 162-169 (entirely) ; 9,78, 153 (partially)

5.1

the biomaterial and the process for producing the biomaterial and for co-polymerisation with a non-proteinaceous catalyst for dismutation of superoxide, wherein the biomaterial is a polymer provided with a non-proteinaceous catalyst for the dismutation of superoxide

5.2 (claim 34)

the biomaterial and the process for producing the biomaterial and for co-polymerisation with a non-proteinaceous catalyst for dismutation of superoxide,

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

wherein the biomaterial is polyethylene glycol provided with a non-proteinaceous catalyst for the dismutation of superoxide

6. Claims: 42-49,103-110, 170-177 (entirely) ; 9,78, 153 (partially)

the biomaterial and the process for producing the biomaterial and for co-polymerisation with a non-proteinaceous catalyst for dismutation of superoxide, wherein the biomaterial is a biopolymer provided with a non-proteinaceous catalyst for the dismutation of superoxide

7. Claims: 50-57,111-118, 178-186 (entirely) ; 9,78, 153 (partially)

the biomaterial and the process for producing the biomaterial and for co-polymerisation with a non-proteinaceous catalyst for dismutation of superoxide, wherein the biomaterial is a composite material provided with a non-proteinaceous catalyst for the dismutation of superoxide

8. Claims: 120-152 (entirely) ; 153 (partially)

a process for producing a biomaterial modified by co-polymerisation with a non-proteinaceous catalyst for dismutation of superoxide, the process comprises providing with a at least another monomer

9. Claims: 187-194 (entirely)

a biocompatible article comprising a biomaterial provided with a non-proteinaceous catalyst for dismutation of superoxide

10. Claims: 195-196 (entirely)

a process for making a bisimine intermediate in the synthesis of a transition metal

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