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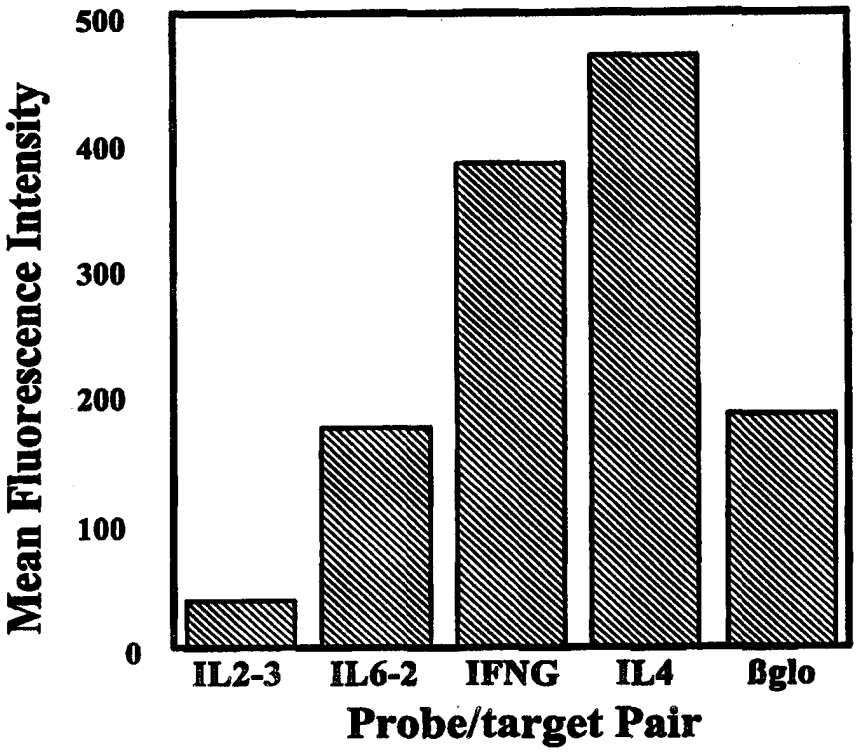
(54) Title: FIBER OPTIC BIOSENSOR FOR SELECTIVELY DETECTING OLIGONUCLEOTIDE SPECIES IN A MIXED FLUID SAMPLE

(57) Abstract

The present invention provides biosensors, apparatus and methods for selectively detecting at least one complementary oligonucleotide target specie in a fluid sample containing a mixture of different oligonucleotide fragments. One preferred embodiment of the biosensor is as a unitary fiber optic array having an in-situ hybridization zone comprising not less than one specie of single stranded oligonucleotide disposed as individual deposits in aligned organization upon multiple strand end faces at differing spatial positions on the distal array end surface. In this manner, a collective of deployed, single specie, multiple fixed probes are presented for selective in-situ hybridization on-demand with at least one mobile complementary target specie ultimately bearing a joined identifying label. The biosensor provides for optical detection of in-situ hybridization on the distal end surface via the presence of the concomitantly disposed joined identifying label at the differing spatial positions.



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INTERNATIONAL SEARCH REPORT

Int. ional Application No
PCT/US 98/09163

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 G01N21/77 G01N21/64 C12Q1/68

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 6 G01N

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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X	EP 0 723 146 A (SRI INTERNATIONAL) 24 July 1996 see page 31, line 9 - line 32	1,4
Y	see figure 23	2,3,5-8

Y	US 5 244 636 A (WALT) 14 September 1993 cited in the application see abstract see column 4, line 53 - column 5, line 9 see column 5, line 58 - column 7, line 9 see column 8, line 40 - line 43 see column 24, line 34 - line 56 see column 26, line 3 - line 35 see figures 17,18	2,3,5-8

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[X] Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
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Name and mailing address of the ISA	Authorized officer
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Int. ional Application No
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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.
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X	US 5 002 867 A (MACEVICZ) 26 March 1991 see abstract see column 8, line 4 - line 27	1,4
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