

Title (en)
NUCLEIC ACID SENSOR

Title (de)
NUKLEINSÄURE-SENSOR

Title (fr)
CAPTEUR D'ACIDE NUCLEIQUE

Publication
EP 0990149 A4 20030226 (EN)

Application
EP 97921532 A 19970522

Priority
• AU 9700316 W 19970522
• US 1812596 P 19960522

Abstract (en)
[origin: WO9744651A1] The present invention provides biosensors and methods for the detection selected nucleic acid sequences. In one form the biosensor comprises an electrode and a bilayer membrane having a top and a bottom layer. The bottom layer being proximal to and connected to the electrode in a manner such that a space exists between the membrane and the electrode, with the conductance or impedance of the membrane being dependent on the presence or absence of the selected nucleic acid sequence. The membrane comprises a closely packed array of amphiphilic molecules and a plurality of ion channels comprising first half membrane spanning monomers dispersed in the top layer and second half membrane spanning monomers dispersed in the bottom layer. The first half membrane spanning monomers are capable of lateral diffusion within the upper layer and the second half membrane-spanning monomers are prevented from lateral diffusion within the bottom layer. A first ligand specifically reactive with the selected nucleic acid sequence is attached to an end of a proportion of the first half membrane-spanning monomers proximal the surface of the membrane and a second ligand reactive with the selected nucleic acid or marker attached thereto is attached to an end of the remainder of the first half membrane-spanning monomers proximal the surface of the membrane.

IPC 1-7
G01N 27/327; **G01N 27/333**; **G01N 27/40**; **G01N 33/53**; **G01N 33/553**; **G01N 33/569**; **C12Q 1/68**; **G01N 27/403**

IPC 8 full level
C12Q 1/68 (2006.01); **C12Q 1/6825** (2018.01); **G01N 27/327** (2006.01); **G01N 27/333** (2006.01); **G01N 33/50** (2006.01)

CPC (source: EP)
C12Q 1/6825 (2013.01)

Citation (search report)
• [AD] WO 9008783 A1 19900809 - AU MEMBRANE & BIOTECH RES INST [AU]
• [T] LUCAS SALLY WRIGHT ET AL: "Detection of DNA via an ion channel switch biosensor", ANALYTICAL BIOCHEMISTRY, ACADEMIC PRESS, SAN DIEGO, CA, US, vol. 282, no. 1, 15 June 2000 (2000-06-15), pages 70 - 79, XP002217060, ISSN: 0003-2697
• See references of WO 9744651A1

Designated contracting state (EPC)
AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)
WO 9744651 A1 19971127; AU 2757897 A 19971209; AU 734086 B2 20010531; CA 2255952 A1 19971127; EP 0990149 A1 20000405; EP 0990149 A4 20030226; JP 2000513811 A 20001017

DOCDB simple family (application)
AU 9700316 W 19970522; AU 2757897 A 19970522; CA 2255952 A 19970522; EP 97921532 A 19970522; JP 54127497 A 19970522