

Title (en)
NOVEL ELECTROPOLYMERISABLE MONOMERS WHICH ARE SOLUBLE IN AN AQUEOUS SOLUTION AND COMPRISE A METALLOPORPHYRINE

Title (de)
IN EINER WÄSSRIGEN LÖSUNG LÖSLICHE UND METALLOPORPHYRINHALTIGE NEUARTIGE ELEKTROPOLYMERISIERBARE MONOMERE

Title (fr)
NOUVEAUX MONOMERES ELECTROPOLYMERISABLES, SOLUBLES EN SOLUTION AQUEUSE, COMPORTANT UNE METALLOPORPHYRINE

Publication
EP 1943505 A1 20080716 (FR)

Application
EP 06841993 A 20061102

Priority
• FR 2006051131 W 20061102
• FR 0511187 A 20051103

Abstract (en)
[origin: FR2892723A1] Electropolymerizable monomer, to be polymerized in aqueous solution, comprises an electropolymerizable unit such as acetylene, pyrroles, thiophenes, indoles, anilines, azines, p-phenylenevinylenes, p-phenylenes, pyrenes, furans, selenophenes, pyridazines, carbazoles or (meth)acrylates or their derivatives and a metallo-porphyrin substituted by at least two entities that are ionized or ionizable in aqueous solution, is new. Independent claims are included for: (1) a metallo-porphyrin monomer of formula (I); (2) the preparation of (I); (3) electroactive probe either in the form of a conducting homopolymer susceptible to be obtained by electropolymerization of a monomer carrying a biological ligand, or in the form of a conducting copolymer susceptible to be obtained by copolymerization of at least two different monomers, where at least one of the monomers carrying a biological ligand such as (I); (4) detection of at least a target ligand in a biological sample, comprising contacting the sample with an electroactive probe carrying a ligand probe, for the ligand probe/target ligand interaction and recording and optionally quantifying the potential or current difference emitted by the probe before and contacting with the sample; (5) electrode comprising a conducting support of which whole or part of the surface is covered with the probe; (6) polymerization process comprising electropolymerization of (I) in aqueous phase; and (7) polymer susceptible to be obtained by the process. R 1-R 3H, a group i.e. ionized or ionizable in aqueous solution or a biological ligand; A 1-A 3spacer group e.g. -(CH 2) n1-, -(CH 2-CH 2-O) n2-, phenyl-diyl, phenyl moiety of formula (IIa) or phenoxy moiety of formula (IIb); n1 : 0-5; n2 : 1-5; R, R a-R hH or electron donor/attractor; X : a spacer e.g. -(CH 2) m1-, substituted phenyl moiety of formula (IIc), -(CH 2-CH 2-O) m4-, a polypeptide chain containing 1-3 amino acids or -(CH=CH) m5-; m1 : 1-6; m2-m5 : 1-3; R 11H or 1-4C alkyl; M : transition metal, Mg, Al, Sn or Ge; and R : R f, H, methyl, ethyl or O-CH 3. Provided that at least two groups of R 1-R 3are the groups i.e. ionized or ionizable in aqueous solution or a biological ligand. [Image] [Image].

IPC 8 full level
G01N 27/00 (2006.01); **C07D 487/22** (2006.01); **C08G 61/12** (2006.01)

CPC (source: EP US)
C07D 487/22 (2013.01 - EP US); **C08G 61/124** (2013.01 - EP US); **G01N 27/48** (2013.01 - EP US)

Citation (search report)
See references of WO 2007051947A1

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)
FR 2892723 A1 20070504; FR 2892723 B1 20090424; EP 1943505 A1 20080716; JP 2009515002 A 20090409; US 2009314660 A1 20091224; US 8092661 B2 20120110; WO 2007051947 A1 20070510

DOCDB simple family (application)
FR 0511187 A 20051103; EP 06841993 A 20061102; FR 2006051131 W 20061102; JP 2008538386 A 20061102; US 8447606 A 20061102