(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
21 February 2002 (21.02.2002)

PCT

(10) International Publication Number
WO 02/14290 A1

(51) International Patent Classification[7]: C07D 263/32, G01N 33/50, 33/92, 33/58, C12N 5/00

(21) International Application Number: PCT/GB01/03695

(22) International Filing Date: 17 August 2001 (17.08.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

0020503.9	18 August 2000 (18.08.2000)	GB
60/247,994	14 November 2000 (14.11.2000)	US

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(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

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

WO 02/14290 A1

(54) Title: LIPO- OR AMPHIPHILIC SCINTILLATORS AND THEIR USE IN ASSAYS

(57) Abstract: The invention provides scintillator molecules, consisting of one or more X moieties, which is a phosphor, covalently attached to one or more R^1 moieties which is a lipophilic or amphiphilic group, wherein the scintillator molecule is capable of integrating into a cell, a cell membrane, a biological membrane, an artificial membrane or a delivery vehicle and when integrated can act as a phosphor. Preferred seintillator molecules are of formula. Also provided are liposomes or micelles containing the novel scintillator compounds, methods for preparing the liposomes or micelles containing the novel scintillator compounds and the use of the liposomes or micelles as delivery vehicles to insert the scintillator compounds into the cell membranes of cells. In addition, the invention provides cells containing the novel scintillator compounds and the use of the cells in assay systems.