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(71) Applicant *(for all designated States except US)*: **SENSE PROTEOMIC LIMITED** [GB/GB], The Babraham Bioincubator, Babraham Hall, Babraham, Cambridge CB2 4AT (GB).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **KOZLOWSKI, Roland, Zbignieiw** [GB/GB]; The Corner House, West End, Wooton, Woodstock OX20 1DL (GB) **BLACKBURN, Jonathan, Michael** [GB/GB], 36 Woodlark Road, Cambridge CB3 0HS (GB). **SUTHERLAND, John, David** [GB/GB], 7 Newstead Close, Poynton, Cheshire SK12 1ES (GB). **CULLIFORD, Steven, John** [GB/GB], Garden Flat, 39 Vicarage Road, Southville, Bristol BS3 1PD (GB). **SUTHERLAND, Andrew, James** [GB/GB], Bracebridge House, 139 Chester Road South, Kiddermmster, Worcestershire DY10 1XB (GB)

(74) Agents: **CHAPMAN, P., W.** et al.; Kilburn & Strode, 20 Red Lion Street, London WC1R 4PJ (GB).

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(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 scintillator 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