

Title (en)
RED-SHIFTED PHTHALOCYANINE AND TETRABENZTRIAZAPORPHYRIN REAGENTS

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Application
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Abstract (en)
[origin: WO9002747A1] Red-shifted, water-soluble, fluorescent, monomerically-tetherable derivatives having formula (I), wherein M represents either H₂ or is selected from among the following metals: aluminum, silicon, phosphorus, gallium, germanium, cadmium, scandium, magnesium, tin, and zinc. Each R₁ is independently selected from -XYW, -YW, and -W. X represents either a carbon, or heteroatom selected from among oxygen, nitrogen, sulfur, phosphorus, silicon, and selenium; Y represents a linking group; and W represents a water solubilizing group. The substituent R₂ is selected from among -A, -Y'A, -XA, and -XY'A, where A denotes a biological entity such as an antibody, antibody fragment, nucleotide, nucleic acid probe, antigen, oligonucleotide, deoxynucleotide, dideoxynucleotide, avidin, streptavidin or membrane probe, or R₂ is a reactive or activatable group suitable for conjugating to a biological entity. Y' is a linking group that tethers the biological entity to the phthalocyanine or tetrabenztriazaporphyrin macrocycle. Z is either a nitrogen atom or a carbon substituted with hydrogen, alkyl, aryl, or aralkyl groups. Z may also be attached to R₂. Also disclosed are derivatives of the compounds of formula (I) in which 1-4 of the benzo ring(s) contain 1 or 2 N atoms. Methods of sequencing DNA and detecting analytes, including cells, using these derivatives are disclosed, as are kits for carrying out assays for the analytes and flow cytometry. Methods of detecting DNA using cationic compounds of formula (I), wherein R₂ = R₁ and W = -N<+>D₁D₂D₃ are also disclosed. Further, compounds containing Tc, Gd, etc. as the metal in formula (I) may be used for imaging or therapy.

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