

# United States Patent [19]

[11] Patent Number: 4,708,933

Huang et al.

[45] Date of Patent: Nov. 24, 1987

- [54] IMMUNOLIPOSOME ASSAY-METHODS AND PRODUCTS
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- [21] Appl. No.: 619,844
- [22] Filed: Jun. 12, 1984
- [51] Int. Cl.<sup>4</sup> ..... G01N 33/543; G01N 33/544; G01N 33/545; G01N 33/552
- [52] U.S. Cl. .... 435/7; 436/501; 436/518; 436/527; 436/528; 436/531; 436/533; 436/534; 436/815; 436/829
- [58] Field of Search ..... 435/7, 810, 4, 176, 435/177; 436/527, 528, 529, 518, 534, 531, 532, 533, 829, 808, 809, 501

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[57] ABSTRACT

This invention is directed to a new membrane lytic immunoassay. In one embodiment of this assay, an antigen is first covalently coupled with lipids and this antigen-lipid complex is mixed with a hexagonal phase forming lipid to form bilayer liposome vesicles additionally containing a self-quenching fluorescent dye. When this antigen-containing liposome is brought into contact with a solid surface coated with antibody molecules, binding occurs between the antigen and the antibody, disrupting the liposome and releasing the dye. To assay a biological fluid for free antigen the fluid is first contacted with the solid surface-antibody complex, to saturate the bound antibody. Binding by the liposomes is thereby inhibited, leading to reduced dye release. Comparing dye release against a standardized curve of dye release versus known antigen concentrations allows for rapid determination of the unknown antigen concentration in the biological fluid. Similarly, antibodies and other entities, e.g., enzymes, drugs, etc., may be determined using slightly modified versions of this assay.

39 Claims, 8 Drawing Figures

