11/20/84 XR 4,483,929

United States Patent [19]

Szoka

[11] **Patent Number: 4,483,929**

[45] **Date of Patent: Nov. 20, 1984**

[54] **LIPOSOMES WITH GLYCOLIPID-LINKED ANTIBODIES**

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[21] Appl. No.: **374,031**

[22] Filed: **May 3, 1982**

[51] **Int. Cl.**[3] **G01N 33/54**; G01N 33/58

[52] **U.S. Cl.** **436/533**; 435/7; 435/8; 436/512; 436/532; 436/534; 436/548; 436/800; 436/803; 436/819; 436/828; 436/829

[58] **Field of Search** 436/512, 532, 533, 534, 436/808, 828, 829; 422/61; 435/7

[56] **References Cited**

U.S. PATENT DOCUMENTS

3,995,018	11/1976	Sjoquist	436/828 X
4,193,983	3/1980	Ullman	436/819 X
4,200,436	4/1980	Mochida	436/512
4,235,792	11/1980	Hsia	436/817 X
4,255,411	3/1981	Lim	436/815 X
4,342,739	8/1982	Kakimi	436/823 X
4,372,745	2/1983	Mandle	422/61 X
4,376,110	3/1983	David	436/529 X

OTHER PUBLICATIONS

T. J. Williams et al., Archives of Biochemistry and Biophysics, 195(1), 145–151 (1979).

D. Sinha et al., Biochemical and Biophysical Research Communications, 90(2), 554–560 (1979).

A. Huang et al., The Journal of Biological Chemistry, 255(17), 8015–8018 (1980).

G. S. Bethel et al., The Journal of Biological Chemistry, 254(8), 2572–2574 (1979).

T. D. Heath et al., Biochimica et Biophysica Acta, 640, 66–81 (1981).

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[57] **ABSTRACT**

Lipid vesicles, labelled with encapsulated reporter compositions and bound to antibodies comprise a new class of immunoreagent, useful in immunoassays for ligands.

9 Claims, No Drawings