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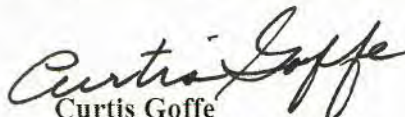
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ISSUE DATE: July 4, 1989

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Certifying Officer



- [54] **EX VIVO EFFECTOR CELL ACTIVATION FOR TARGET CELL KILLING**
- [75] Inventors: Cyril J. Honsik; Ralph A. Reisfeld, both of La Jolla, Calif.
- [73] Assignee: Scripps Clinic and Research Foundation, La Jolla, Calif.
- [21] Appl. No.: 916,173
- [22] Filed: Oct. 7, 1986
- [51] Int. Cl.⁴ A61K 39/395
- [52] U.S. Cl. 424/85.8; 424/93; 435/240.2; 530/387; 530/828; 530/388; 530/808
- [58] Field of Search 435/2, 4, 7, 29, 948; 935/107, 108; 424/85, 93; 436/512, 519

- [56] **References Cited**
- U.S. PATENT DOCUMENTS
- 4,444,878 4/1984 Paulus .
- 4,507,391 3/1985 Pukel et al. .
- 4,675,287 6/1987 Reisfeld 435/68

- OTHER PUBLICATIONS
- Honsik, C. J. et al., Proc. Natl. Acad. Sci., U.S.A., 83:7893-7897, (10-1986).
- Cheresh, D. A. et al., Proc. Natl. Acad. Sci., U.S.A., 82:5155-5159, (8-1985).
- Park, M. M. et al., Cellular Immunology, 84:94-103, (1984).
- Mule, J. J. et al., Science, 225:1487-1489, (9-1984).

- Rosenberg, S. et al., New Engl. J. Medicine, 313(23):1485-1492, (12-1985).
- Perez, P. et al., J. Exper. Med., 163:166-178, (1-1986).
- Jung, G. et al., Proc. Natl. Acad. Sci., U.S.A., 83:4479-4483, (6-1986).
- Staerz, U. D. et al., Nature, 314:628-631, (4-1985).
- Cancer Research, (1984), 44:806-809, Dippold et al.
- Natural Immunity and Biological Response, (1985), 4:253, Honsik et al.
- Eur. J. Immunol., (1986), 16:263-270, Staerz et al.
- Proc. Nat'l Acad. Sci. U.S.A., (1986), 83:1453-1457, Staerz et al.
- Proc. Nat'l Acad. Sci. U.S.A., (1985), 82:1242-1246, Houghton et al.

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Assistant Examiner—Jeff. P. Kushan
Attorney, Agent, or Firm—Dressler, Goldsmith, Shore, Sutker & Milnamow, Ltd.

[57] **ABSTRACT**

A method and composition for killing target cells is disclosed. The method utilizes ex vivo IL-2 activation of leucocyte effector cells and arming the activated leucocyte effectors with monoclonal antibodies whose Fc portions bind to the IL-2-activated effectors and whose paratopic portions immunoreact with an epitope expressed on the surfaces of the target cells. The composition contains a cytolytic amount of the armed, IL-2-activated effector cells dispersed in an aqueous physiologically tolerable diluent medium.

20 Claims, 4 Drawing Sheets

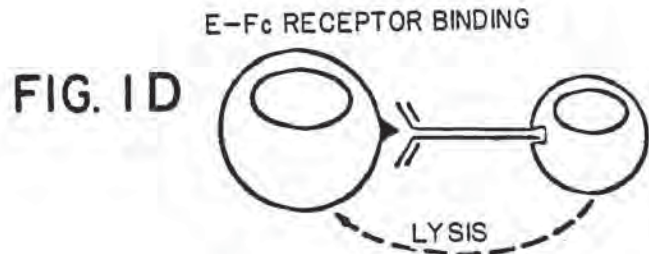
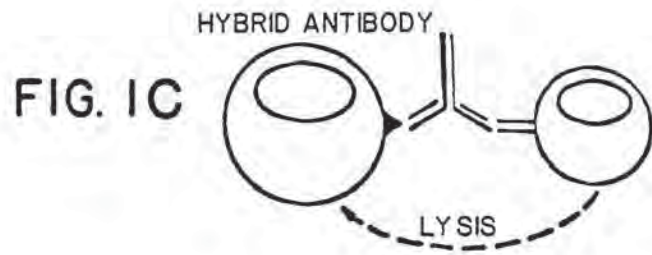
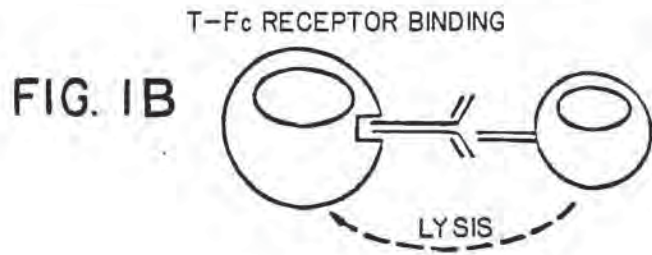
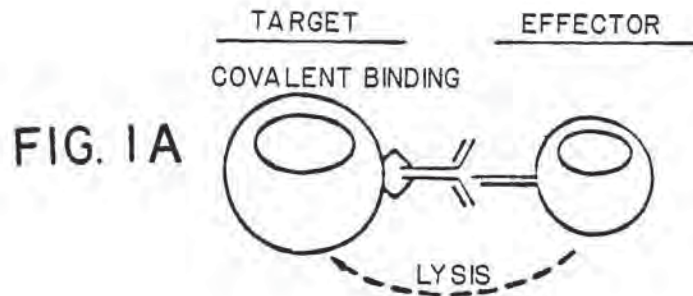


FIG. 2

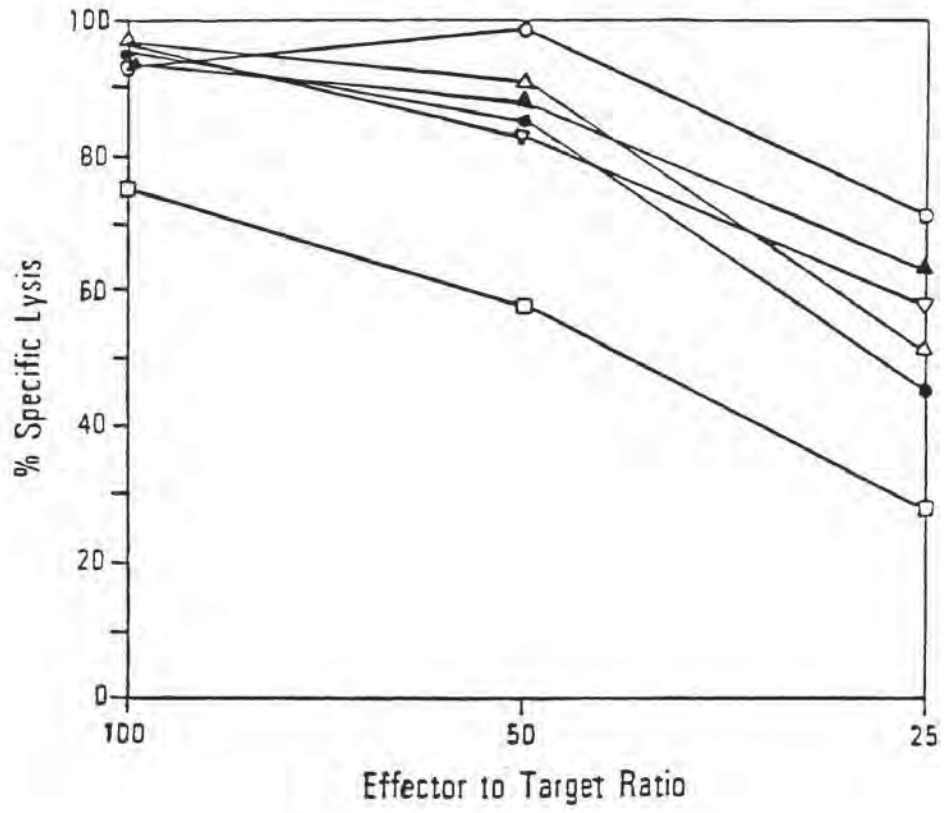
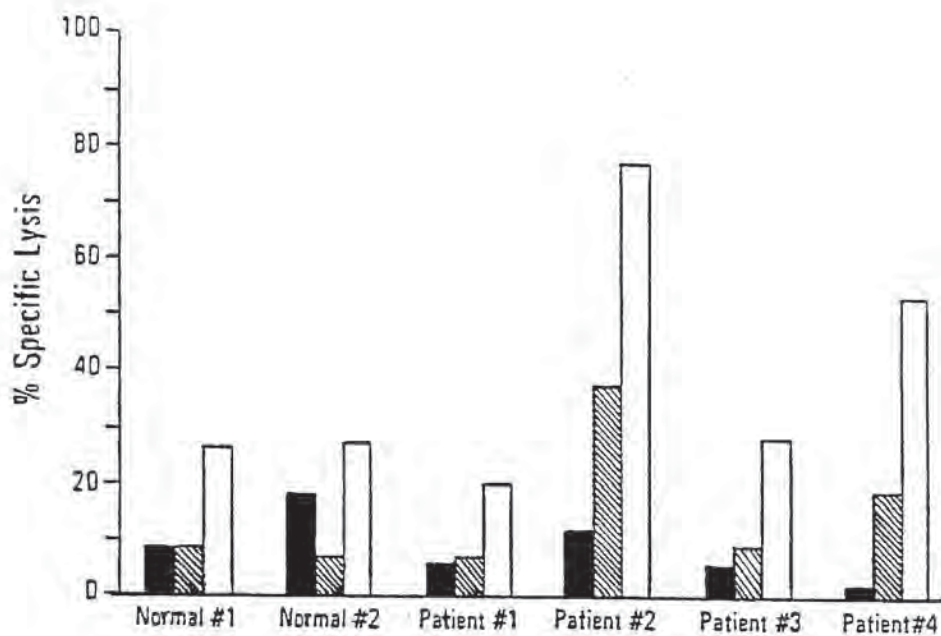


FIG. 3



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