

# United States Patent [19]

Cabilly et al.

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[54] **RECOMBINANT IMMUNOGLOBIN PREPARATIONS**

[75] Inventors: **Shmuel Cabilly**, Monrovia; **Herbert L. Heyneker**, Burlingame; **William E. Holmes**, Pacifica; **Arthur D. Riggs**, La Verne; **Ronald B. Wetzels**, San Francisco, all of Calif.

[73] Assignee: **Genentech, Inc.**, South San Francisco, Calif.

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[51] Int. Cl.<sup>4</sup> ..... **C07K 15/14; C07K 15/06; C12P 21/00; C12N 15/00; C12N 1/20**

[52] U.S. Cl. .... **530/387; 435/68; 435/172.3; 435/320; 435/252.3; 435/252.31; 435/252.33; 435/252.34; 935/10; 935/15; 935/29; 935/73; 530/388**

[58] Field of Search ..... **435/68, 172.3, 240, 435/253, 172.2, 317, 320; 260/112 B; 536/27; 935/11, 15, 27, 29, 73; 530/387, 388**

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[57]

**ABSTRACT**

Altered and native immunoglobulins, including constant-variable region chimeras, are prepared in recombinant cell culture. The immunoglobulins contain variable regions which are immunologically capable of binding predetermined antigens. Methods are provided for refolding directly expressed immunoglobulins into immunologically active form.

**7 Claims, 15 Drawing Sheets**

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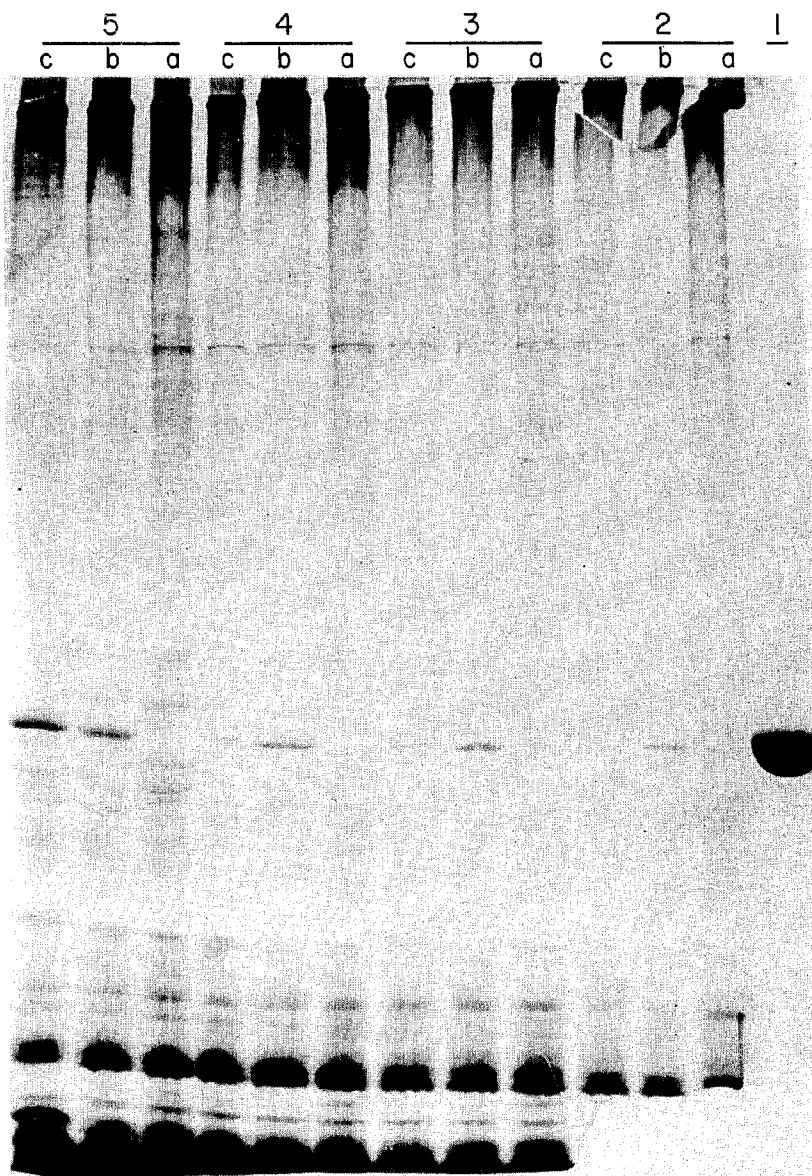
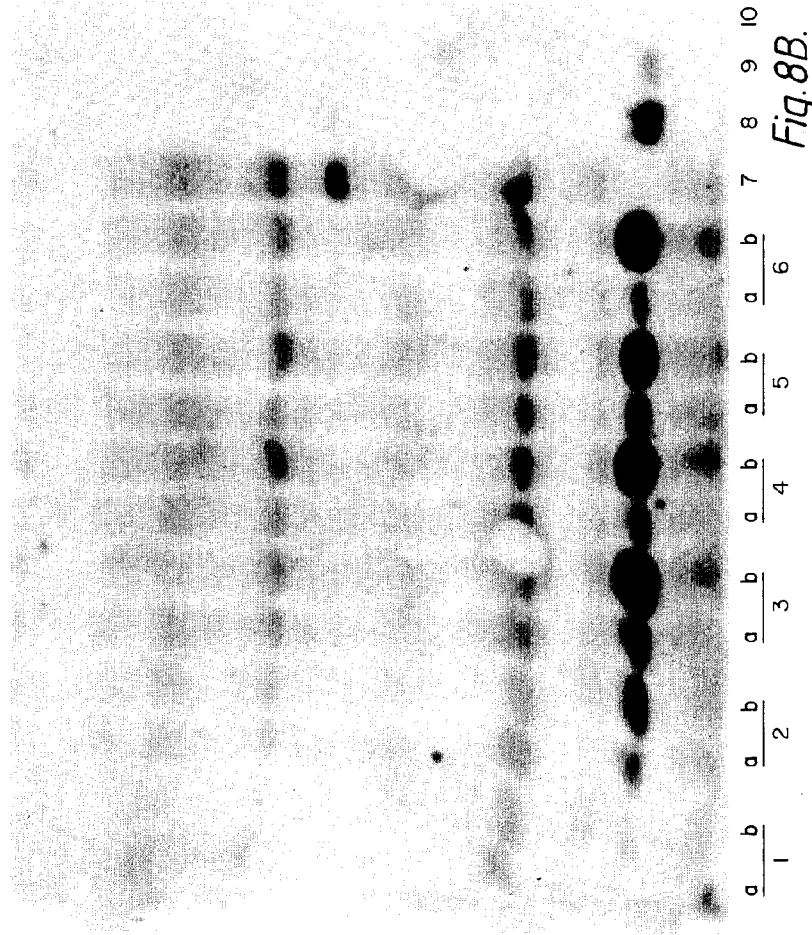


Fig. 8A.



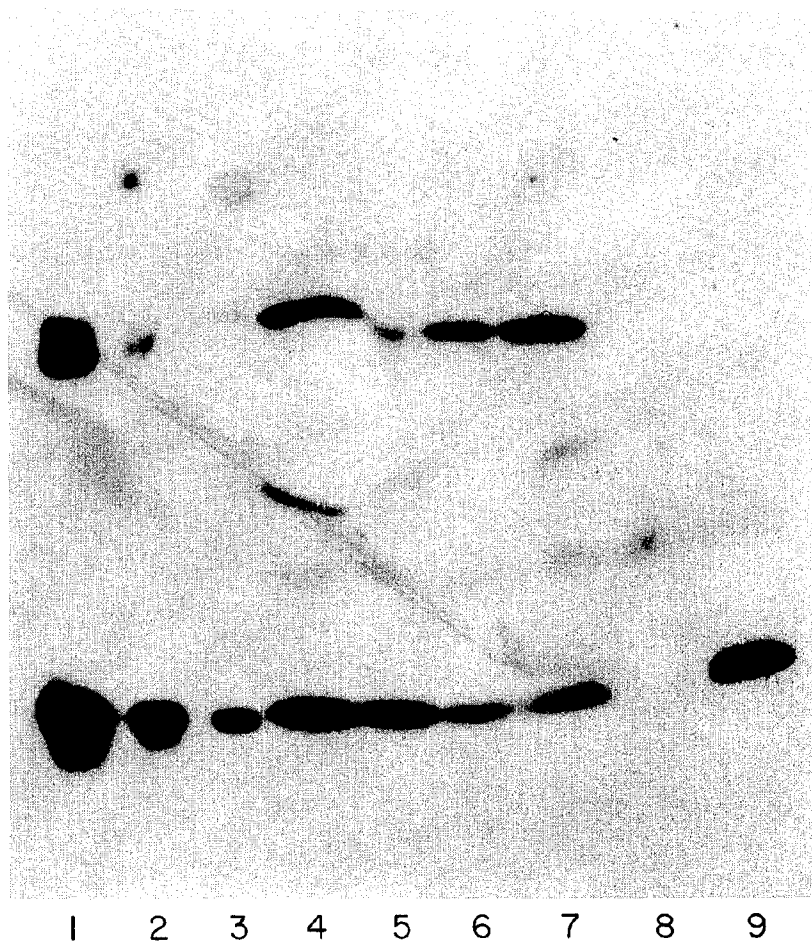


Fig. 8C.



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