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United States Patent [19][11] **Patent Number:** **5,677,171**

Hudziak et al.

[45] **Date of Patent:** **Oct. 14, 1997**[54] **MONOCLONAL ANTIBODIES DIRECTED TO THE HER2 RECEPTOR**[75] Inventors: **Robert M. Hudziak**, Corvallis, Oreg.; **H. Michael Shepard**, Rancho Santa Fe, Calif.; **Axel Ullrich**, Portola Valley, Calif.; **Brian M. Fendly**, Half Moon Bay, Calif.[73] Assignee: **Genentech, Inc.**, South San Francisco, Calif.[21] Appl. No.: **286,303**[22] Filed: **Aug. 5, 1994****Related U.S. Application Data**

[63] Continuation of Ser. No. 977,453, Nov. 18, 1992, abandoned, which is a continuation of Ser. No. 147,461, Jan. 25, 1988, abandoned, which is a continuation-in-part of Ser. No. 143,912, Jan. 12, 1988, abandoned.

[51] **Int. Cl.⁶** **C07K 16/00; G01N 33/574**[52] **U.S. Cl.** **435/240.27; 530/388.8; 530/388.85; 530/387.7; 435/7.23; 435/172.2**[58] **Field of Search** **530/387.7, 388.8, 530/388.85, 381.1; 435/7.23, 240.27, 172.2, 70.21**[56] **References Cited****U.S. PATENT DOCUMENTS**

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[57] **ABSTRACT**

Monoclonal antibodies which bind to the extracellular domain of the HER2 receptor and inhibit growth of SK-BR-3 breast tumor cells, which overexpress HER2, are disclosed. The monoclonal antibodies can be used for in vitro assays for detecting a tumor characterized by amplified expression of HER2.

39 Claims, 6 Drawing Sheets

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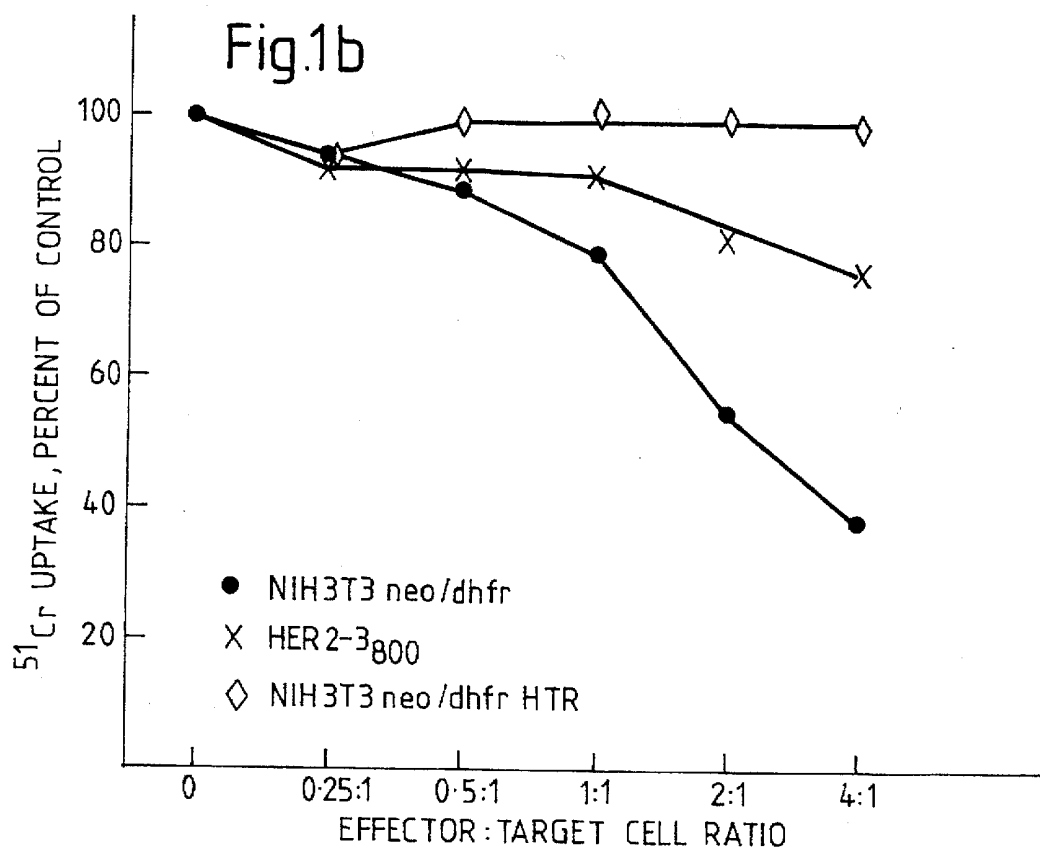
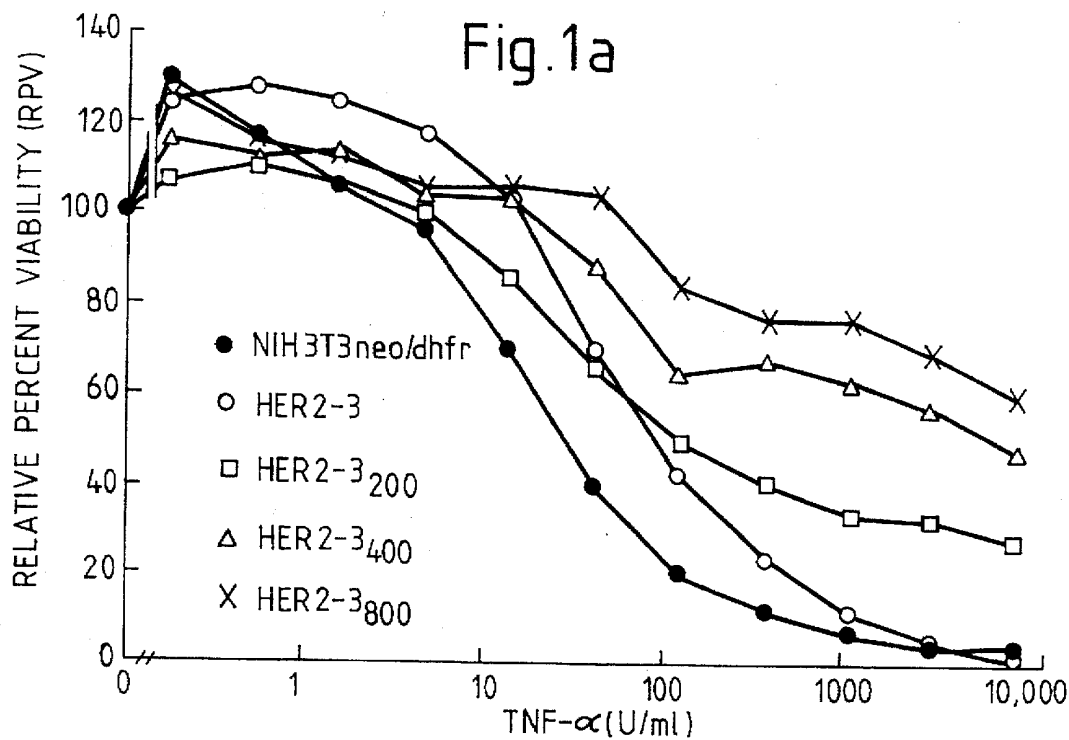


Fig. 3

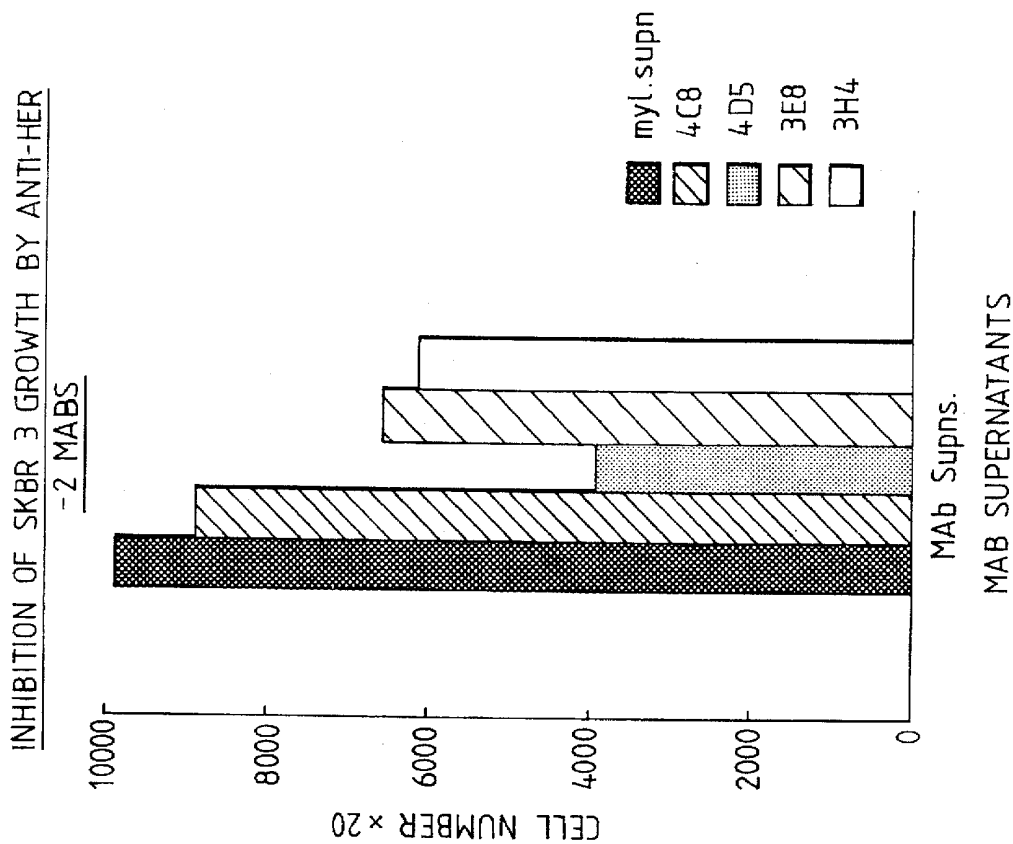


Fig. 2

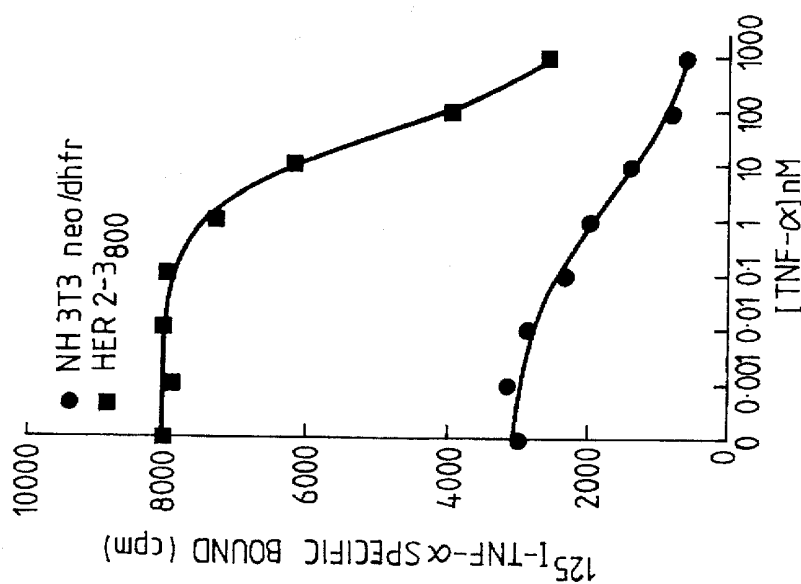
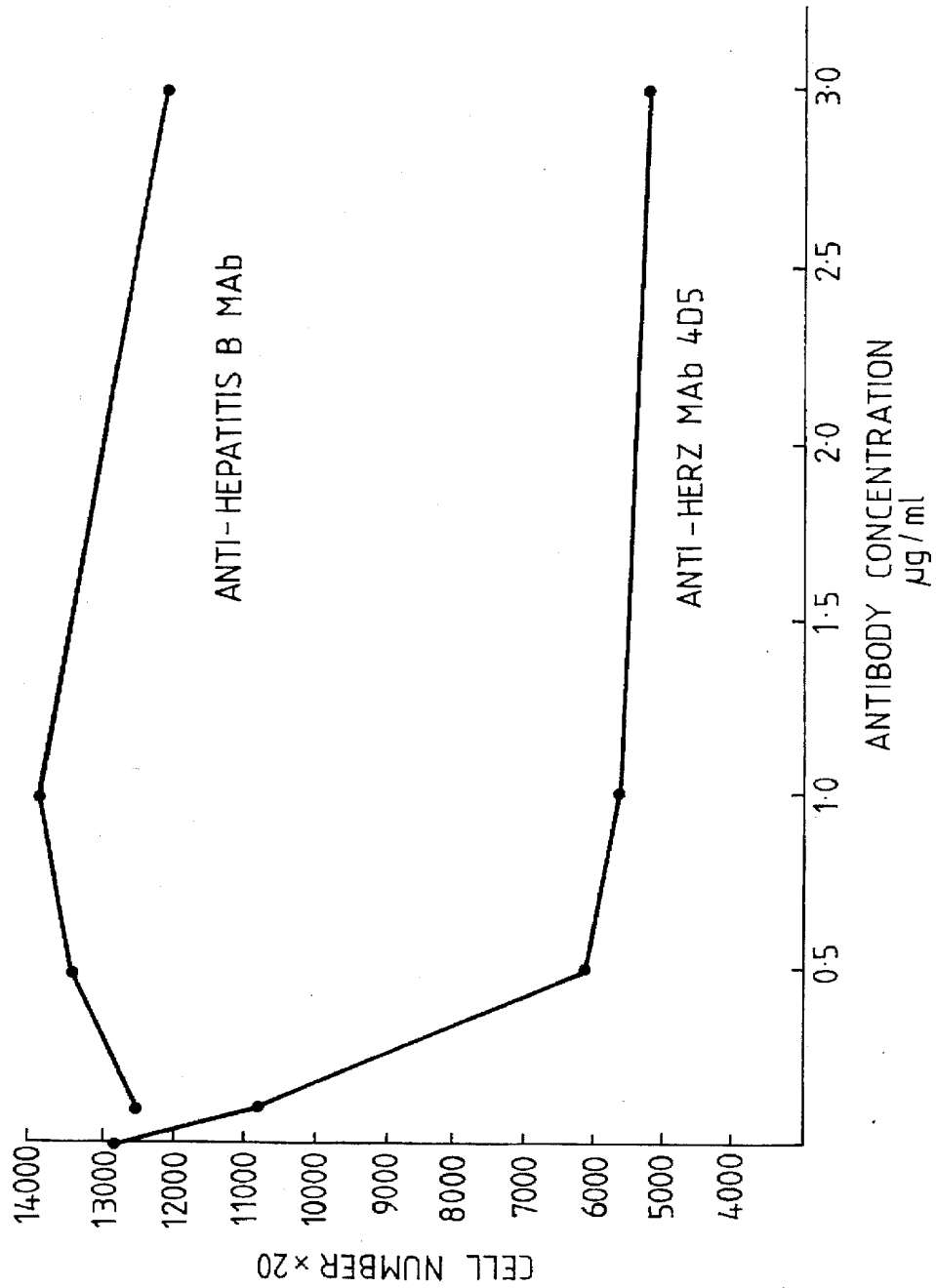


Fig. 4



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