

GENENTECH INC  
 Form 424B4  
 October 05, 2004

PROSPECTUS SUPPLEMENT

FILED PURSUANT TO RULE 424(B)(4)

TO PROSPECTUS DATED MARCH 28, 2001

REGISTRATION NO. 333-37072

## GENENTECH, INC.

### SHARES OF COMMON STOCK

This prospectus supplement relates to the sale by certain selling shareholders of our common stock, par value \$.02 per share, that was originally delivered in exchange for Liquid Yield Option Notes due 2015 issued by Roche Holdings, Inc.

This prospectus supplement should be read in conjunction with the prospectus dated March 28, 2001, which is to be delivered with this prospectus supplement. All capitalized terms used but not defined in the prospectus supplement shall have the meanings given them in the prospectus.

The table below sets forth information as of the date hereof concerning beneficial ownership of the common stock of the selling shareholders as listed below. All information concerning beneficial ownership has been furnished by the selling shareholders.

| NAME                           | NUMBER OF SHARES OF<br>COMMON STOCK<br>OWNED PRIOR TO<br>OFFERING | NUMBER OF<br>SHARES OFFERED | NUMBER OF SHARES OF<br>COMMON STOCK<br>OWNED AFTER THE<br>OFFERING | PERCENTAGE OF<br>COMMON STOCK<br>OUTSTANDING |
|--------------------------------|---|-----------------------------|--|--|
| AXA IM<br>CONVERTIBLES<br>PLUS | 121,144   | 121,144                     | 0  | *  |

\* Less than 1%

THE SECURITIES OFFERED HEREBY INVOLVE A HIGH DEGREE OF RISK. SEE  
 [RISK FACTORS] BEGINNING ON PAGE 3 OF THE PROSPECTUS.

THESE SECURITIES HAVE NOT BEEN APPROVED OR DISAPPROVED BY THE  
 SECURITIES AND EXCHANGE COMMISSION NOR HAS THE SECURITIES AND  
 EXCHANGE COMMISSION OR ANY STATE SECURITIES COMMISSION PASSED  
 UPON THE ACCURACY OR ADEQUACY OF THIS PROSPECTUS. ANY  
 REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this Prospectus Supplement is October 5, 2004.