For Immediate Release
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Genzyme Provides Update on Myozyme® Manufacturing

Will Host Conference Call Today at 5:00 p.m.

CAMBRIDGE, MA – Genzyme Corporation (NASDAQ: GENZ) announced today that the FDA has informed the company of its opinion that Myozyme® (alglucosidase alfa) produced at the 160L bioreactor scale and Myozyme produced at the 2000L scale should be classified as two different products because of differences in the carbohydrate structures of the molecules. Currently, Genzyme has U.S. approval to sell Myozyme manufactured at the 160L scale, and the company has been seeking clearance from the FDA for Myozyme produced at the 2000L scale. Production at this larger scale has already been approved in more than 40 countries.

Based on the global clinical experience of nearly 900 patients of all ages currently receiving Myozyme produced at the larger scale, including patients who participated in the Late-Onset Treatment Study (LOTS), Genzyme believes that Myozyme produced at both the 160L and 2000L scales is clinically effective and safe. Myozyme is the only treatment for Pompe disease—a severe, progressively debilitating and life-threatening inherited disorder affecting a very small number of people throughout the world.

The FDA will require Genzyme to submit a separate biologics license application (BLA) to gain approval for Myozyme produced at the 2000L scale. The agency proposed that Genzyme initiate a rolling BLA review process by submitting results from

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the LOTS study. Genzyme expects the FDA to give the BLA priority review and to act on the application by the end of this year. The LOTS study, which met its co-primary efficacy endpoints, was undertaken to evaluate the safety and efficacy of Myozyme in juvenile and adult patients with Pompe disease. Genzyme had already been preparing to submit results from this study to the FDA to fulfill a post-marketing commitment. Genzyme anticipates that this process will culminate in the availability of two commercial versions of Myozyme in the United States: one produced at the 160L scale and the other produced at the 2000L scale. The company expects to begin providing U.S. patients with commercial 2000L Myozyme during the first quarter of 2009.

To ensure that severely affected adults with Pompe disease in the United States have access to treatment, Genzyme, in collaboration with the FDA, created the Myozyme Temporary Access Program (MTAP) in May 2007. Through this program the company is currently providing Myozyme produced at the 2000L scale free of charge to approximately 140 patients. Infants and children with Pompe disease in the United States continue to receive commercially approved Myozyme produced at the 160L scale.

“We are extremely disappointed in the FDA’s decision because it will further delay broad patient access to Myozyme, which is not possible under the MTAP program,” said Henri A. Termeer, Genzyme’s chairman and chief executive officer.

Financial Impact

Myozyme sales for 2008 are now expected to be approximately $275-$285 million compared to previous guidance of $320-$330 million, reflecting the delay in the approval of 2000L production. Genzyme anticipates that this delay will have an impact on 2008 non-GAAP earnings of approximately $0.10 per diluted share. This reflects

both forgone commercial sales margin and the costs of continued administration of the MTAP program. Genzyme now expects 2008 non-GAAP earnings of approximately $3.90 per diluted share, compared with previous guidance of $4.00 per diluted share. GAAP earnings for 2008 are now expected to be approximately $2.65 per diluted share, compared with previous guidance of $2.75 per diluted share. GAAP figures include anticipated amortization and stock-compensation expenses and the effect of contingent convertible debt. Genzyme reaffirmed its commitment to 20 percent compound average growth in non-GAAP earnings per share through 2011.

About Genzyme

One of the world's leading biotechnology companies, Genzyme is dedicated to making a major positive impact on the lives of people with serious diseases. Since 1981, the company has grown from a small start-up to a diversified enterprise with more than 10,000 employees in locations spanning the globe and 2007 revenues of $3.8 billion. In 2007, Genzyme was chosen to receive the National Medal of Technology, the highest honor awarded by the President of the United States for technological innovation.

With many established products and services helping patients in nearly 90 countries, Genzyme is a leader in the effort to develop and apply the most advanced technologies in the life sciences. The company's products and services are focused on rare inherited disorders, kidney disease, orthopaedics, cancer, transplant, and diagnostic testing. Genzyme's commitment to innovation continues today with a substantial development program focused on these fields, as well as immune disease, infectious disease, and other areas of unmet medical need.

This press release contains forward-looking statements regarding Genzyme’s financial outlook and business plans and strategies, including without limitation: its 2008 earnings guidance; its 2008 Myozyme revenue guidance; its plans regarding the timing and content of the BLA submission for Myozyme manufactured at the 2000L scale; it expectations regarding FDA approval of that BLA and the timing thereof; its anticipated non-GAAP compound growth rate through 2011; and its belief there is no difference in the clinical effectiveness or safety of Myozyme produced at the 160L and the 2000L scales. These statements are subject to risks and uncertainties that could cause actual results to differ materially from those forecasted. These risks and uncertainties include, among others: Genzyme's ability to obtain and maintain regulatory approvals for Myozyme produced at the 2000L scale and the timing thereof; Genzyme’s ability to accurately anticipate regulatory actions on its Myozyme manufacturing applications; Genzyme's ability to manufacture its products, including Myozyme, in a timely and cost effective manner and in sufficient quantities to meet demand; Genzyme’s ability to

accurately forecast Myozyme revenues and the impact of reduced Myozyme revenues and other costs associated with the regulatory delay on earnings; and the risks and uncertainties described in Genzyme's SEC reports filed under the Securities Exchange Act of 1934, including the factors discussed under the caption "Risk Factors" in Genzyme's 2007 Annual Report on Form 10K. Genzyme cautions investors not to place substantial reliance on the forward-looking statements contained in this press release. These statements speak only as of today's date and Genzyme undertakes no obligation to update or revise the statements.

Conference Call Information

Genzyme will host a conference call today at 5:00 p.m. Eastern to discuss Myozyme manufacturing. To participate in the call, please dial 1-773-799-3828 and use passcode "Genzyme." The replay number for the call is 203-369-3292, and the replay will be available until midnight on May 5th. Today's call will also be Webcast on the investor events section of www.genzyme.com.

Genzyme's press releases and other company information are available at www.genzyme.com and by calling Genzyme's investor information line at 1-800-905-4369 within the United States or 1-678-999-4572 outside the United States.

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