Timeline for Fabrazyme, Replagal*

**This timeline was prepared by Claire Cassedy and James Love of KEI, last revised on July 14, 2014*

1990, October 24. Robert J. Desnick, David F. Bishop And Yiannis A. Loannou file patent application 07602824, titled Cloning And Expression Of Biologically Active Human Alpha-Galactosi- Dase A.

1994 October 18. Patent No. 5,356,804 is issued for the Desnick et al invention, and rights are assigned to Mount Sinai School of Medicine in the City of New York. The patent discloses that "This invention was made with government support under grant No. DK-34045 awarded by the National Institutes of Health. The Government has certain rights in the invention."

1995 February 3. Mount Sinai School of Medicine granted Genzyme Corporation an exclusive license to its Fabry patent.[1]

1998, January 19. Genzyme receives an Orphan Drug designation from US FDA, for Treatment of Fabry's disease.

1998, June 22. Transkaryotic Therapies (TKT) receives an Orphan Drug designation from US FDA, for long-term enzyme replacement therapy for the treatment of Fabry disease.

1999 December. Transkaryotic Therapies "in collaboration with the National Institutes of Health ("NIH"), completed a 26 patient pivotal Phase II study in patients with Fabry disease . . . The goal of the study was to assess safety and clinical activity of Replagal, TKT's enzyme replacement therapy, particularly its effect on pain and kidney function."[2]

2000 June 16. TKT announces[3] it has submitted a Biologics License Application (BLA) for Replagal to US FDA.[4] TKT submitted to the FDA "approximately one week before [Genzyme] submitted [their] application for Fabrazyme enzyme."[5] According to TKT:

> "The submission of TKT's BLA for the treatment of Fabry disease is based on clinical data from two independent trials conducted at the National Institutes of Health (NIH) and Royal Free Hospital in the United Kingdom. TKT's BLA also includes long-term data from twenty-five patients treated for approximately one-year as part of a maintenance study at the NIH."

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[1] http://www.sec.gov/Archives/edgar/data/732485/000104746910007260/a2199511zex-10_10.htm
[2] http://www.sec.gov/Archives/edgar/data/885259/000091205701506357/a2042542z10-k.txt
[3] http://www.prnewswire.com/news-releases/tkt-submits-biologics-license-application-for-replagaltm-to-treat-fabry-disease-73603697.html
[4] www.shire.com/shireplc/uploads/report/112002_AR.pdf
[5] http://www.sec.gov/Archives/edgar/data/732485/000091205702012898/0000912057-02-012898.txt

2000 June. Genzyme submits BLA for Fabrazyme to US FDA.[6]

2000 July. Genzyme submits MAA for Fabrazyme to the EMA.[7]

2000 July 25. Genzyme files a lawsuit against TKT seeking injunctive relief and damages for patent infringement resulting from TKT's manufacture and use of Replagal. The suit alleges infringement of US Patent No. 5.356,804 which Genzyme exclusively licensed from Mount Sinai.[8]

2000 August 8. EMA grants TKT orphan medicine designation for Replagal in EU.

2000 September 19. TKT files a lawsuit against Genzyme and Mount Sinai seeking declaratory judgments that the manufacture, use and sale of Replagal does not infringe the patent licensed from Mount Sinai and that the Mount Sinai patent is invalid.

2000 October. "TKT reported pivotal Phase II clinical results of Replagal from the NIH study, indicating that the enzyme replacement therapy had broad clinical effects in treating Fabry disease. Patients receiving Replagal had comprehensive clinical and biochemical improvement including a reduction in pain and stabilization or improvement in renal function."[9]

2000. Carl Icahn joins the board of trustees of Mount Sinai Medical School.

2001 January 2. TKT receives Complete Review Letter (CRL) from FDA stating that Replagal failed to demonstrate clinical benefits necessary for FDA approval. Recommends that TKT conduct additional clinical studies and submit the results to the FDA.

2001 August 3. TKT receives EU marketing authorization for Replagal from the European Medicines Agency (EMA) and is granted 10 years of exclusivity protection through orphan drug status.

2001 August 3. Genzyme Europe B.V. receives EU marketing authorization for Fabrazyme from the EMA and is granted 10 years of exclusivity protection through orphan drug status.

2002 February 20. US District Court enters a summary judgement in favor of TKT in the case versus Genzyme. *Genzyme Corp. v. Transkaryotic Therapies, Inc., 2002 U.S. Dist. LEXIS 1682.*

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[6] http://www.sec.gov/Archives/edgar/data/732485/000091205701506403/0000912057-01-506403.txt
[7] http://www.sec.gov/Archives/edgar/data/732485/000091205701506403/0000912057-01-506403.txt
[8] http://www.sec.gov/Archives/edgar/data/732485/000091205701506403/0000912057-01-506403.txt
[9] http://www.sec.gov/Archives/edgar/data/885259/000091205701506357/a2042542z10-k.txt

2002 March 20. Genzyme files appeal of decision in favor of TKT by US District Court on patent infringement case of Replagal.

2003 April 24. Genzyme receives approval from the US FDA for Fabrazyme and also received seven years of U.S. Orphan Drug market exclusivity.[10]

2003 October 9. The United States Court of Appeals for the Federal Circuit (CAFC) issues a decision affirming that TKT's Replagal did not infringe on Genzyme's Fabrazyme. *Genzyme Corp. v. Transkaryotic Therapies, Inc., 346 F.3d 1094 (Fed. Cir. 2003)*

2004 January. TKT "determined that it would cease its efforts to seek the approval of Replagal from the FDA and withdrew its BLA for Replagal."[11]

2005 June 28. Shire Human Genetic Therapies AB acquires Transkaryotic Therapies Inc. (TKT) [12] for $1.6 billion.

2006 October 20. Mount Sinai is granted a 1440 day patent term extension on US Patent no. 5,356,804 (the patent in question). The new patent expiration date is set for September 27, 2015. [13]

2007 November 15. The Boston Globe reports Carl Icahn has acquired 1.5 million shares in Genzyme.

2008 Sept 15 to October 2008. The Food and Drug Administration (FDA) conducted an inspection of the Genzyme Allston Landing Facility, and "documented significant deviations from current good manufacturing practice (CGMP) in the manufacture of licensed therapeutic drug products, bulk drug substances, and drug components. These products include Fabrazyme, Cerezyme, and Myozyme."[14]

2009 February 27. The US FDA sends Warning Letter NEW-08-09W regarding the manufacturing problems at the Allston Landing Facility.[15] The letter closes by noting that "If corrective actions cannot be completed within 15 working days, state the reason for the delay and the time within which the corrections will be completed. Failure to promptly correct these deviations may result in further regulatory action without further notice. Such actions may include license suspension and/or revocation, seizure or injunction."

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[10] http://www.fda.gov/Drugs/DevelopmentApprovalProcess/HowDrugsareDevelopedandApproved/ApprovalApplications/TherapeuticBiologicApplications/ucm128159.htm

[11] http://www.sec.gov/Archives/edgar/data/885259/000095013505001487/0000950135-05-001487.txt

[12] http://www.boston.com/business/articles/2005/07/28/tkt_shareholders_ok_shire_buyout_at_16b/

[13] http://www.uspto.gov/web/offices/pac/dapp/opla/term/certs/5356804.pdf

[14] http://www.fda.gov/ICECI/EnforcementActions/WarningLetters/ucm148998.htm

[15] http://www.fda.gov/ICECI/EnforcementActions/WarningLetters/ucm148998.htm

2009 June 16. Genzyme announced a virus in a manufacturing facility in at Allston, Massachusetts where Fabrazyme was manufactured would cause a halt in the production of Fabrazyme.[16] Working with a Fabrazyme Stakeholders Working Group ("FSWG"), Genzyme issued a "Guidance to the Fabry Community on the Management of Fabrazyme Supply" recommending that physicians reduce the use of Fabrazyme to approximately 80 percent of normal levels.

2009 July. Genzyme resumed production of Fabrazyme but at lower than anticipated volumes.

2009 September 23. A meeting of the U.S. Fabrazyme Stakeholders Working Group approves a "Revised Guidance to the U.S. Fabry Community"[17] recommending physicians reduce the use of Fabrazyme to 30 percent of normal levels for the remainder of 2009 (a reduction that was subsequently extended several times).

2009 October 8-November 13. During an inspection by the US FDA, inspectors find that Genzyme's "systems for ensuring manufacturing quality were inadequate resulting in production delays, critical shortages of medically necessary products to consumers and drugs contaminated with metal, fiber, rubber and glass particles. These manufacturing problems violated the FDA's regulations for manufacturing practice. Genzyme also temporarily suspended manufacturing of some products due to a viral contamination in a bioreactor that makes bulk amounts of its drugs."[18] These manufacturing failures cause extended shortages of Fabrazyme in the US.

2009 December 22. At the request of the US FDA, Shire submits a new BLA application Replagal.

2010 February 17. Genzyme writes to health care professionals, noting it "must extend the period of 30 percent Fabrazyme supply allocation until the end of June 2010."

2010 February 22. Genzyme Corporation announced it has received notice from Icahn Partners LP and certain of its affiliates of their intention to nominate four individuals to Genzyme's board of directors: Carl C. Icahn, Dr. Steven Burakoff, Dr. Alexander J. Denner and Dr. Richard Mulligan. [19]. According to an SEC proxy statement, Icahn owns or controls ownership to 13,100,100 share of Genzyme, equal to 4.91 percent of Genzyme stock.[20] On February 22, 2010, the shares traded at $56.04, placing the value of the Icah holdings at $734 million.

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[16] http://news.genzyme.com/press-release/genzyme-reports-progress-related-allston-plant

[17] Revised Guidance to the U.S. Fabry Community: Management of Fabrazyme (agalsidase beta for injection) Supply Temporary Conservation of Fabrazyme Supply for the Remainder of 2009. Prepared by the U.S. Fabrazyme Stakeholders Working Group* (meeting held September 23, 2009)

[18] http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm213212.htm

[19] http://news.genzyme.com/press-release/genzyme-receives-notice-icahn-partners-nomination-directors, http://www.sec.gov/Archives/edgar/data/732485/000091062710000086/genzdefc14a042910.txt

[20] http://www.nytimes.com/2010/02/23/business/23genzyme.html

2010 February 24. Shire issues a press release stating that as a result of the US FDA requesting additional pharmacokinetic comparability data, Shire has withdrawn its' December 2009 BLA, and at the suggestion of the FDA, has requested and received a Fast Track Designation. Shire immediately initiates a rolling BLA submission.[21]

2010 April 14-20. According to a Shire SEC filing[22],

> "Mt. Sinai School of Medicine of New York University ("Mt. Sinai") initiated lawsuits against Shire in Sweden on April 14, 2010 , and in Germany on April 20, 2010, alleging that Shire's enzyme replacement therapy ("ERT") for Fabry disease, REPLAGAL, infringes Mt. Sinai's European Patent No. 1 942 189, granted April 14, 2010. Mt. Sinai sought injunctions against the use of REPLAGAL in these jurisdictions until expiration of the patent. Mt. Sinai has been granted Supplementary Protection Certificates ("SPC") in respect of the patent in certain EU countries (including Sweden and Germany) which, where granted, extends the patent until August 2016. Where no SPC has been granted, the patent expires November 2013.

2010 April 22. Genyzme issues "Direct Healthcare Professional Communication on the supply of Fabrazyme (agalsidase beta)" which notes "Further extension of the delay in the normal supply and recommendations on treatment for patients experiencing clinical deterioration." The communication states that "Until at least the end of September 2010, Genzyme will only have sufficient Fabrazyme to meet 30% of the global demand."

2010 April 24. US Orphan drug exclusivity expires for Fabrazyme.

2010 May 24. Genzyme signs consent decree to correct violations at Allston, MA, manufacturing plant and a fine of $175 million.[23]

2010 June 9. Carl Icahn settles a proxy battle with Genzyme by placing two persons on the Genzyme Board of Directors: Steven Burakoff, a director of the Tisch Cancer Institute at the Mount Sinai Medical Center, and Eric Ende, a former biotechnology analyst at Merrill Lynch.[24]

2010 July 23. Shire files an opposition against Mount Sinai's patent before the European Patent Office.

2010 August 2. Fabry patients Joseph M. Carik, Anita Hochendoner, and Anita Bova request the Secretary of DHH to exercise Bayh-Dole march-in rights and grant compulsory licenses to use patents related to the manufacture of Fabrazyme (agalsidase beta). The grounds for the request are that the patent owner and its exclusive licensee have harmed the public health by severely

[21] http://www.sec.gov/Archives/edgar/data/936402/000095010310000520/0000950103-10-000520.txt
[22] Shire Form 10-Q, for period ending June 30, 2012, page 20.
[23] http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm213212.htm
[24] http://news.genzyme.com/press-release/genzyme-and-carl-icahn-reach-agreement

rationing the supply of agalsidase beta, the only approved therapeutic treatment for Fabry disease..[25] [26]

2010 Oct 22. The European Medicines Agency issues a press release titled: "European Medicines Agency reviews treatment recommendations for Fabrazyme. The EMA statement[27] reported a recommendation to restore full doses of Fabrazyme or Replagal for most patients, and read in part:

> The Committee for Medicinal Products for Human Use (CHMP) noted that since the introduction of a lower dose of Fabrazyme in June 2009, there has been a steady increase in the number of reported adverse events, matching the increase in the number of patients on the lower dose. At first, most of the events were pain-related, soon followed by reports of events affecting the heart, the central nervous system and the kidneys. This pattern suggests a progression of Fabry disease. Recently, a decrease in number of reported adverse events has been observed, which reflects the fact that more patients have either been switched to Replagal or have started receiving a full dose of Fabrazyme again.

2010 December 1. The US NIH rejects Fabry's patients' request for a compulsory license, though the decision references the ongoing patent litigation in Europe and reports that Mount Sinai has committed to the NIH to "not pursue an injunction against the marketing and sale of Replagal during any period of an existing or future shortage of Fabrazyme."[28]

2010 December 8. Shire commences patent invalidity proceedings in the UK. Mount Sinai in turn, counterclaiming alleging infringement in the UK proceedings.

2010. December 10. Shire tells a German court they intend to initiate a complaint for compulsory license before the Federal Patent Court.

2011 January 3. Sally Strauss writes to Ann Hammersla in the NIH Technology office, copying Dennis Charney, the Dean of the Mount Sinai School of Medicine. "This letter shall serve as Mount Sinai School of Medicine's first monthly submission to the NIH pursuant to its request and Determination not to exercise its March-in-Authority." Strauss says:

> "With respect to the request for a license to the 804 patent and related patents owned by Mount Sinai, we note that Shire has advised us that it may file a motion with a German court seeking a compulsory license for the territory of Germany. Shire has stated that it also intends to seek a preliminary decision on such compulsory license in the event that a finding of infringement is made in the pending infringement proceedings allowing Mount

[25] http://keionline.org/sites/default/files/fabrazyme_cover_2aug2010.doc
[26] http://keionline.org/sites/default/files/fabrazyme_petition_2aug2010.doc
[27] (EMA/CHMP/654389/2010).
[28] http://keionline.org/sites/default/files/francis_collins_rejection_fabrazyme_marchin_1dec2010.pdf

> Sinai to impose an injunction against Repligal. We have confirmed to Shire and to the German court overseeing the infringement action that we will not enforce an injunction during any period of drug shortage."

A fact not clear from Sally Strauss's January 3, 2011 report is that Mount Sinai's offer to forgo an injunction was only through September 30, 2011.

2011 January 13. Joseph M. Carik and Amber Britton, both suffering for Fabry's disease, file a citizens petition with the US FDA, asking that the FDA prevent Genzyme from exporting Fabrazyme, since patients in the United States are suffering from a shortage, but patients outside the United States can benefit from the Shire product, Replagal, which is not available for sale in the United States.[29]

2011 January 18. Mount Sinai obtains an injunction against Shire in German. Among other things, the injunction requires Shire to "destroy, or at the discretion of the defendants to surrender" the infringing Fabry products (Replagal), and to compensate Mount Sinai for the infringement.

2011 January 19. Christian Paul of Jones Day, representing Mount Sinai which is under pressure from the NIH as regards the shortage, writes to Dr. v. Falck, representing Shire, to state Mount Sinai will not enforce its injunction through September 30, 2011.

2011 February 16. France-based Sanofi-Aventis acquires Genzyme for $20.1 billion.[30] The Wall Street Journal reports "Sanofi is paying $74 a share, or $20.1 billion, plus a contingent value right, or CVR—a pledge of additional payment of up to $14 a share if Genzyme meets certain sales and manufacturing targets."[31] Shares trade at $76.25 before they are actually purchased in April.

2011 March 1. Mount Sinai informs the NIH that it has been served with Shire's motion for a compulsory license for the territory of Germany.[32]

2011 May 12. Alan Black, the attorney representing Fabry's patents Joseph M. Carik and Amber Britton submits additional documentation to the FDA on the practice of Genzyme to provide European patients with full doses of Fabrazyme, while rationing or providing no access to U.S. patients.[33]

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[29] http://www.regulations.gov/#!docketDetail;D=FDA-2011-P-0055
[30] http://online.wsj.com/news/articles/SB10001424052748703373404576147483489656732
[31] http://online.wsj.com/news/articles/SB10001424052748703373404576147483489656732
[32] March 1, 2011. Letter of Sally Strauss, Senior Associate General Counsel, Mount Sinai Medical Center, to Ann Hammersla, Director, Division of Policy, Office of Technology Transfer, U.S. National Institutes of Health.
[33] Joseph M. Carik and Amber Britton (Law Office of C. Allen Black, Jr., Ph.D.) - Supplement. http://www.regulations.gov/#!documentDetail;D=FDA-2011-P-0055-0011.

2011 March, 25. Genzyme announces that because of a new manufacturing failure for Fabrazyme supplies, the company will reallocate stocks away from U.S. to foreign patients, in order to “share the impact of this loss” globally.

2011 April 13. Mount Sinai’s Sally Strauss sends “supplemental materials” to the NIH:

> This letter provides further details on: (1) our ongoing commitment to the NIH, the Fabry patient/physician community, and Shire that Mount Sinai will not seek to enforce an injunction against Replagal during any period of an existing or future shortage of Fabrazyme; (2) the status of the compulsory license proceeding in Germany; and, (3) Genzyme's confirmation that it has not changed its allocation of Fabrazyme to the United States market. . . .
>
> Mount Sinai has repeatedly issued written commitments to the NIH and to Shire that it will not seek to enforce an injunction against Shire's product Replagal during any period where there is a current or future shortage of Fabrazyme. For example, after Mount Sinai received the German Court's infringement decision authorizing an injunction, it reached out to Shire in a letter dated January 19, 2011 to reiterate that it would not seek to enforce an injunction against the marketing and sale of Replagal during any period of an existing or future shortage of Fabrazyme. Further, Mount Sinai explicitly committed not to pursue the enforcement of an injunction in Germany before September 30, 2011 and to provide Shire with specific notice on July 1, 2011 as to whether it will extend this categorical commitment. (We have attached this letter and an English translation at Tab B). Consistent with this commitment, Mount Sinai submitted a reduced bond with the Mannheim Court only related to that portion of the Court's judgment requiring Shire to provide financial information and an accounting. If Mount Sinai had sought to•enforce an injunction it would have had to place a much higher bond with the Court. (We have attached the bond submission and a corresponding translation at Tab C 2). Mount Sinai confirmed this commitment to Shire yet again in connection with the lawsuit in the United Kingdom where Shire sued Mount Sinai attacking the validity of our patent, and Mount Sinai counterclaimed with an infringement action. In two sequential letters to Shire (attached hereto in Tab D) Mount Sinai reiterated that it will not seek to enforce an injunction during any period of shortage. Finally, Mount Sinai voiced this commitment most recently to the German Court overseeing Shire's motion for a compulsory license (Tab E). 3
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> . . . Mount Sinai believes that based on the above information, there are no new facts that would warrant the NIH to reverse its earlier decision and issue a march-in petition at this time . . .

2011 July 1. Sally Strauss files Mount Sinai's seventh monthly report regarding Fabrazyme issues with Ann Hammersla at NIH, with additional details on the issue of the Mount Sinai position on the injunction:

> Mount Sinai continues to stand by its commitment not to enforce the Mannheim Court's judgment regarding the imposition of an injunction of the sale of Repligal in Germany. We had previously advised Shire that we would commit to not pursuing an injunction through September 30, 2011. We have recently advised Shire that we would extend this categorical commitment at least through December 31, 2011.

2011 August. The 10 year EU Orphan exclusivity for Replagal and Fabrazyme ends.

2012 January. New Genzyme facility in Framingham, MA is approved by US FDA and EMA for the production of Fabrazyme.[34]

2012 March 14. Shire withdraws Replagal US FDA BLA,[35][36] and issues a statement with says in part:

> Lexington, Massachusetts, US – March 14, 2012 – Shire plc (LSE: SHP, NASDAQ: SHPGY), the global specialty biopharmaceutical company, announced today that it has withdrawn its Biologics License Application (BLA) for REPLAGAL (agalsidase alfa) with the US Food and Drug Administration (FDA). Shire has been in ongoing dialogue with the FDA since the supply shortage of the only US approved treatment for Fabry disease. In 2009, and again in 2011, the FDA encouraged Shire to submit an application for the approval of REPLAGAL. The information in the application included relevant updates such as manufacturing and open long-term clinical trial data. These discussions led the Company to file a BLA last November in anticipation of a quick review process and eventual approval - allowing Shire to supply more US patients with a therapy they desperately needed at the time. Recent interactions with the FDA have led the Company to believe that the agency will require additional controlled trials for approval. No concerns over the product's safety profile were raised by the FDA. Shire has concluded that the likely additional studies would cause a significant delay, and an approval of REPLAGAL for US patients would only be possible in the distant future. Shire has therefore decided to withdraw its BLA. Shire has been providing REPLAGAL free of charge to around 140 US patients – about 20% of the treated US patients - through treatment access programs.

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[34] http://www.sec.gov/Archives/edgar/data/1121404/000119312512098598/d279567d20f.htm
[35] http://www.shire.com/shireplc/en/investors/irshirenews?id=577
[36] Trista Kelley, Shire Reversal on Rare-Disease Drug Application Stumps Patients, Bloomberg Businessweek, April 3, 2012. http://www.businessweek.com/news/2012-04-03/shire-reversal-on-rare-disease-drug-application-stumps-patients.

2012 May 9. Mount Sinai grants Shire a non-exclusive license to the patent in connection with the on-going sales of Replagal in the European Union. Shire and Mt. Sinai agree to settle all proceedings in connection with the validity and infringement by REPLAGAL of Mt. Sinai's European Patent No. 1 942 189. The parties agree to discontinue all court and related proceedings in this dispute.[37] Shire also reported that:[38]

> "Mt. Sinai has granted Shire a non-exclusive license to the patent in connection with the on-going sales of REPLAGAL in the EU and in certain other non-EU territories. Shire has made an up-front cash payment to Mt.Sinai and will make additional cash payments based on REPLAGAL sales over the license term."

2012. June 25. BioCentury publishes a report suggesting the Shire BLA decision was related to FDA concerns about Shire manufacturing practices.[39]

2012. November 15. The Mount Sinai Medical School issues a press release announcing it will be renamed the Icahn School of Medicine at Mount Sinai.[40]

> Mount Sinai President and CEO Kenneth L. Davis, MD and Chairman of the Boards of Trustees Peter W. May announced today that the Mount Sinai School of Medicine has been renamed the Icahn School of Medicine at Mount Sinai in honor of Trustee Carl C. Icahn. Mr. Icahn, whose latest gift is the largest in Mount Sinai's history and among the biggest ever given to a medical school, signed the formal agreement Tuesday, November 13, 2012 at his offices in midtown Manhattan. The new name was approved by the Boards of Trustees on September 24 in recognition of Mr. Icahn's many years of dedicated service to the institution, his leadership in advancing medical science, and his nearly $200 million in lifetime giving to Mount Sinai. In addition, the Institute for Genomics and Multiscale Biologywill be renamed the Icahn Institute for Genomics and Multiscale Biology.

2013. February 13. The NIH writes to Alan Black, stating:

> The December 2012 report from Genzyme stated that: (1) U.S. Fabry patients remain on full dose regimens, (2) Genzyme continues to accommodate new patients with full dosing and without placing them on a waiting list; and (3) Genzyme is able to provide full

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[37] http://www.sec.gov/Archives/edgar/data/936402/000095010313001253/0000950103-13-001253.txt
[38] SEC form 10-Q, for period ending June 30, 2012.
[39] Steve Usdin, Behind Shire's decision to abandon Replagal for Fabry's in U.S. The Replagal saga, BioCentury. June 25, 2012. http://www.biocentury.com/biotech-pharma-news/coverstory/2012-06-25/behind-shires-decision-to-abandon-replagal-for-fabrys-in-us-a1
[40] Mount Sinai School of Medicine to be Named in Honor of Carl Icahn. Newest Gift to Mount Sinai Caps Nearly $200 Million in Lifetime Support. Press Release. November 15, 2012. http://www.mountsinai.org/about-us/newsroom/press-releases/mount-sinai-school-of-medicine-to-be-named-in-honor-of-carl-icahn

doses of Fabrazyme to patients transitioning to Fabrazyme as a result of the Shire PLC's decision to withdraw its FDA Biologics License Application for Replagal Based on Mount Sinai's and the Genzyme's representations in their respective December 2012 reports and the ability of U.S. Fabry patients to obtain full doses of Fabrazyme, NIH has closed the above march-in case.

2013. November 27. Judge Howell of the US District Court for the District of Columbia grants a motion by the US Department of Health and Human Services (DHHS) to dismiss Civil Action 12-00272, a civil action by Joseph m. Carik and other Fabry patients, seeking to compel the FDA to take steps "ensure an adequate supply of the medications they need."

2015. September 27. The Mount Sinai patent number 5,356,804 expires in the United States.[41]

2016. August. Mount Sinai's European patent (based upon US Patent 5,356,804) expires in Europe.

[41] http://www.uspto.gov/web/offices/pac/dapp/opla/term/certs/5356804.pdf