## E N U

## **ELI LILLY AND COMPANY**

## **HERITAGE**

Skip to: Milestones in Medical Research

Eli Lilly and Company has been in business for 140 years. The global, research-based company was founded in May 1876 by Colonel Eli Lilly in Indianapolis, Ind., in the Midwestern section of the United States. A 38-year-old pharmaceutical chemist and a veteran of the U.S. Civil War, Colonel Lilly was frustrated by the poorly prepared, often ineffective medicines of his day. Consequently, he made these commitments to himself and to society:

- He would found a company that manufactured pharmaceutical products of the highest possible quality.
- His company would develop only medicines that would be dispensed at the suggestion of physicians rather than by eloquent sideshow hucksters.
- Lilly pharmaceuticals would be based on the best science of the day.

Although his business flourished, Colonel Lilly wasn't satisfied with the traditional methods of testing the quality of his products. In 1886, he hired a young chemist to function as a full-time scientist, using and improving upon the newest techniques for quality evaluation. Together, they laid the foundation for the Lilly tradition: a dedication that first concentrated on the quality of existing products and later expanded to include the discovery and development of new and better pharmaceuticals.

Eventually, Colonel Lilly's son, Josiah K. Lilly Sr., and two grandsons, Eli Lilly and Josiah K. Lilly Jr., each served as president of the company, and each contributed a distinctive approach to management. Together, these management styles established a corporate culture in which Lilly employees were viewed as the company's most valuable assets, a belief that is still the cornerstone of our corporate philosophy. For well more than a century, Lilly employees have worked to discover and develop important medical breakthroughs.

## MILESTONES IN MEDICAL RESEARCH

1880s

Lilly was one of the first companies to initiate a bonafide pharmaceutical research program, hiring a pharmaceutical chemist as its first scientist.

1920s

Our researchers collaborated with Frederick Banting and Charles Best of the University of Toronto to isolate and purify insulin for the treatment of diabetes, then a fatal disease with no effective treatment options. The work resulted in Lilly's introduction of Iletin, the world's first commercially available insulin product, in 1923.

Lilly initiated a research program to find a treatment for pernicious anemia, a life-





threatening blood disorder, and introduced a liver-extract product that served as a standard of therapy for decades. The company's collaborators on the project, two researchers at Harvard University, later shared a Nobel Prize for the discovery of liver therapy against anemias.

1940s

Lilly was among the first companies to develop a method to mass-produce penicillin, the world's first antibiotic, marking the beginning of a sustained effort to fight infectious diseases.

1950s

The company introduced vancomycin, a powerful antibiotic that remains the last line of defense for patients suffering from serious hospital infections associated with certain types of resistant bacteria.

Lilly launched erythromycin, an antibiotic whose broad antimicrobial spectrum expands the alternatives for penicillin-allergic patients.

1960s



Lilly launched the first of a long line of oral and injectable antibiotics in a new class called cephalosporins. Over the next two decades, the company pioneered important chemical breakthroughs that allowed the large-scale production of these products, which include Keflex® and Kefzol®.

The company also introduced vincristine and vinblastine, anticancer drugs known as vinca alkaloids that are derived from the rosy periwinkle plant.

1970s

Ceclor®, a member of the cephalosporin family, was launched and eventually became the world's top-selling oral antibiotic. Lilly introduced Dobutrex®, an innovative and lifesaving cardiovascular product.

1980s

The most significant breakthrough in diabetes care since the 1920s was marked by Lilly's 1982 introduction of Humulin® insulin identical to that produced by the human body. Humulin is the world's first human-health-care product created using recombinant DNA technology. Lilly later applied this technology to the introduction of





1990s



Lilly launched Prozac®, the first major introduction in a new class of drugs for treatment of clinical depression.

Lilly introduced a stream of innovative new products: Gemzar®, a drug for the treatment of pancreatic and non-small-cell lung cancer; ReoPro®, a cardiovascular drug that prevents blood clots following certain heart procedures, such as angioplasty; Zyprexa®, now the world's top-selling antipsychotic for the treatment of schizophrenia; Humalog®, a fast-acting insulin product that offers greater dosing convenience to improve blood-sugar control; and Evista®, the first of a new class of drugs to be used for the prevention and treatment of postmenopausal osteoporosis. In 1999, Takeda Chemical Industries, Ltd. and Lilly successfully launched Actos®, an oral antidiabetes agent.

In late 2000, Lilly submitted Forteo®, a novel treatment for osteoporosis, for regulatory review.

2000s

Lilly launched another first-in-class product, Xigris®, for the treatment of severe sepsis in adult patients with a high risk of death. In 2001, the company also submitted several innovative new compounds for regulatory review: atomoxetine for the treatment of attention-deficit hyperactivity disorder in children, adolescents, and adults; Cialis® for the treatment of erectile dysfunction; and duloxetine for the treatment of major depressive disorder.

In 2002, Cialis®, a medication to treat male erectile dysfunction, was approved for marketing in the European Union; the U.S. launch followed in 2004. Forteo®, a first-in-class medicine for osteoporosis patients to stimulate new bone formation, also was approved. Strattera®, a nonstimulant, noncontrolled medication to treat attention-deficit hyperactivity disorder received approval.

In 2004, Symbyax®, the first and only FDA-approved medication to treat bipolar depression, was launched in the U.S. Alimta® was approved for use with cisplatin, a standard chemotherapy







new treatment for major depressive disorder and diabetic peripheral neuropathic pain.

In 2005, Byetta®, a first in a new class of medicines known as incretin mimetics to treat type 2 diabetes, was approved and launched in the U.S.

In 2006, Gemzar® was approved for use in the treatment of women living with recurrent ovarian cancer. This marked the fourth approval by the FDA for this anti-cancer agent.

In 2007, the FDA approved osteoporosis drug, Evista®, to reduce the risk of invasive breast cancer in two populations of postmenopausal women: women with osteoporosis and women at high risk for invasive breast cancer. The FDA also approved Cymbalta® for the maintenance treatment of major depressive disorder (MDD) in adults.

In 2008, Cialis® was approved by the FDA for once-daily use for the treatment of erectile dysfunction.

In 2009, Effient was approved by the FDA for the reduction of thrombotic cardiovascular events (including stent thrombosis) in patients with acute coronary syndromes who are managed with an artery-opening procedure known as percutaneous coronary intervention (PCI). PCI usually includes the placement of a stent to help keep the artery open.