
Vaccines and Diagnostics

Our Vaccines and Diagnostics Division is a leader in the research, development, manufacturing and marketing of vaccines and diagnostic tools worldwide. As of December 31, 2010, the Vaccines and Diagnostics Division employed 5 394 full-time equivalent associates worldwide in 30 countries. In 2010, the Vaccines and Diagnostics Division had consolidated net sales of USD 2.9 billion representing 6% of total Group net sales.

Leader in vaccines and diagnostic tools worldwide

The Novartis Vaccines and Diagnostics Division is a leading manufacturer of human vaccines, and is growing at double-digit rates. Novartis Vaccines' products include influenza, meningococcal, pediatric, adult and travel vaccines. Novartis Diagnostics is dedicated to preventing the spread of infectious diseases through the development and marketing of nucleic acid technology blood-screening products, and is also creating innovative diagnostics to detect, prevent, and predict disease and improve medical outcomes.

The current product portfolio of our Vaccines and Diagnostics Division includes more than 20 marketed products. In addition, the division's portfolio of development projects includes more than 15 potential new products in various stages of clinical development.

20 marketed products and 15 potential new products

Influenza

Influenza vaccines are a core franchise of the Division, with brands that include *Fluvirin*, *Fluad*, *Agrippal*, *Agriflu* and *Optaflu*. Additionally, during the 2009-2010 A(H1N1) pandemic, Novartis offered three pandemic products, an A(H1N1) non-adjuvanted vaccine manufactured using the *Fluvirin* platform, *Focetria* and *Celtura*. Today, Novartis is among the world's largest producers of influenza vaccines, and a major supplier to the US, UK, Italy, Germany and other countries. According to the World Health Organization, every year an estimated 3 million to 5 million people worldwide become seriously ill from influenza, and as many as 500 000 – primarily children and the elderly – die from the ensuing complications. In 2010, we began shipping seasonal vaccine in August, and completed our entire shipment of 45 million doses to the US for the

Influenza

2010/2011 season in October, earlier than in previous years and ahead of many competitors.

We continued to see strong clinical results supporting licensing applications for the broader use of *Fluad*, our adjuvanted seasonal vaccine currently available for the elderly in Europe and in countries in other regions. In October 2010, we presented data that demonstrated *Fluad* provided increased clinical protection against seasonal influenza in children as compared to traditional non-adjuvanted trivalent seasonal influenza vaccine, thus supporting potential expansion of its age indication and into additional markets including the US.

In the first half of 2010, we completed the distribution of A(H1N1) vaccine, meeting our commitments to government customers and helping to protect millions against the pandemic virus strain. The rapid production and distribution of these vaccines – which began within four months of the World Health Organization’s pandemic declaration on June 11, 2009 – was an unprecedented, one-time event. While the A(H1N1) pandemic has concluded, we continue our work of developing pre-pandemic vaccines with the potential to protect the global population against possible future pandemics. In September 2010, the CHMP issued a positive opinion for *Aflunov*, an investigational pre-pandemic avian influenza vaccine, for active immunization against H5N1 subtype of Influenza A virus in adults 18 years of age and older. H5N1 (commonly referred to as avian or bird flu) accounts for most avian influenza outbreaks globally and is a serious health concern given its potential to evolve into a deadly pandemic strain at any time. In general, a pre-pandemic vaccine is intended to be used to protect against disease from circulating subtypes of influenza virus not included in the seasonal products, but which causes human disease or carries the potential to cause a pandemic.

Meningitis

The Novartis meningococcal franchise is expected to be a cornerstone of future growth for the Division. Our marketed and candidate vaccines have the potential to protect millions against meningococcal disease, which causes approximately 50 000 deaths a year globally. Because almost all cases of infection are caused by five serogroups – A, B, C, W-135 and Y – and the

Meningitis

distribution of strains varies greatly over time and location, Novartis is working to deliver vaccines with broad coverage and the potential to protect all age groups at risk.

Menveo (MenACWY-CRM), a quadrivalent conjugate vaccine for the prevention of the A, C, Y and W-135 strains of meningococcal meningitis, was approved in 2010 in the US for use in individuals 11-55 years old and in the EU for individuals 11 years and up. Our *Menveo* development program to expand the age range for which *Menveo* is indicated – to cover persons aged 2 months to 10 years in the US and EU – is ongoing, and biologics license applications for use of *Menveo* in infants and toddlers were submitted in the US in 2010 with similar filings expected in Europe in 2011. *Menveo* has also received Halal certification in the US and Indonesia, facilitating its use for pilgrims from those and other countries to the Hajj and Umrah, where there is a history and increased risk of outbreaks of meningococcal disease.

Bexsero, the Novartis investigational multicomponent meningococcal serogroup B vaccine (4CMenB), has shown the potential to be the first vaccine to provide broad coverage against meningococcal B disease. In September 2010, Novartis released pivotal Phase III data that indicated that a large majority of infants vaccinated with *Bexsero* achieved a robust immune response against all vaccine antigens. In the trial involving more than 3 600 infants, results showed that *Bexsero* met its primary endpoints, and exhibited an acceptable tolerability profile when co-administered with other routine infant vaccinations, thus supporting potential use of this vaccine in the first year of life when the medical need is considered to be the greatest. Additional data published in November in the Proceedings of the National Academy of Sciences showed that antibodies induced by *Bexsero* killed 85% of a large collection of MenB strains in adults and 74% in infants, who are at the highest risk for meningococcal disease.

Novartis Vaccines continued to expand globally, nearing completion of the acquisition of an 85% stake in the vaccines company Zhejiang Tianyuan Bio-Pharmaceutical Co., Ltd., which offers marketed vaccine products in China. In addition, we have achieved significant milestones in Brazil, entering into an agreement in 2009 with the Fundação Ezequiel Dias for

meningitis C vaccine technology transfer. This agreement has helped the vaccine to be made available to all children in the country under two as part of a national immunization program starting in 2010.

Diagnosics

The Diagnosics business continued to grow in 2010. EFS, the French national blood service, began using Novartis nucleic acid testing (NAT) systems to screen the entire French blood supply for HIV and hepatitis. (Previously, EFS used Novartis systems to screen 30% of its blood supply.) EFS is testing its blood donations in individual donor format (vs. pools of multiple donors) to ensure maximum analytical sensitivity, and at the same time eliminate the pooling and pool-resolution stages. Also during 2010, Novartis signed a long-term agreement with Creative Testing Solutions, the second-largest blood-testing laboratory in the United States, which will expand its use of Novartis NAT blood screening products, including the addition of testing blood donations for hepatitis B virus DNA using NAT.

Diagnosics

We also expanded our line of nucleic acid testing products in the Asia Pacific with approval of the *Procleix Ultrio* test in China. The test detects HIV Type 1, hepatitis B virus, and hepatitis C virus in donated blood in a single assay. Novartis signed a collaboration and license agreement with Smiths Detection (UK) in April 2010 under which Novartis is granted exclusive rights to market Smiths Detection's Bio-Seeq instrument and the associated LATE PCR DNA analysis technology in the area of infectious disease diagnostics. Smiths Detection will leverage its expertise in instrument development and point-of-care diagnostic devices to further enhance the Bio-Seeq platform and sample preparation consumables and to develop a range of diagnostic tests. Novartis Diagnosics will be responsible for clinical trials, regulatory affairs, sales and marketing. Payments to Smiths Detection will be linked to product development and commercial milestones.

Disclaimer

These materials contain forward-looking statements that can be identified by terminology such as “proposed,” “pipeline,” “momentum,” “should,” “will,” “opportunity,” “proposes,” “strategy,” “expected,” “would,” “promising,” “opportunities,” “commitment,” “committed,” “opportunities,” “potential,” “priority review,” “promise,” “suggested,” “intent,” “planned,” “expect,” “outlook,” “potentially,” “likely,” “plan,” “expects,” “seek,” “strategic,” “anticipate,” “expectations,” “launch,” “on track,” “pursuing,” “set,” “due,” “intend,” “to be,” or similar expressions, or by express or implied discussions regarding potential new products, potential new indications for existing products, or regarding potential future revenues from any such products; or regarding potential growth opportunities from the acquisition of a 77% majority ownership in Alcon, Inc. or regarding the expected merger with Alcon, or the potential impact on Alcon or Novartis of the expected merger; or regarding potential future sales or earnings of the Novartis Group or any of its divisions as a result of the expected merger or otherwise, or of Alcon, or any potential synergies, strategic benefits or opportunities as a result of the expected merger; or by discussions of strategy, plans, expectations or intentions. You should not place undue reliance on these statements. Such forward-looking statements reflect the current views of the Group regarding future events, and involve known and unknown risks, uncertainties and other factors that may cause actual results to be materially different from any future results, performance or achievements expressed or implied by such statements. There can be no guarantee that any new products will be approved for sale in any market, or that any new indications will be approved for existing products in any market, or that such products will achieve any particular revenue levels. Nor can there be any guarantee that the expected merger with Alcon will be completed in the expected form or within the expected time frame or at all. Nor can there be any guarantee that Novartis will be able to realize any of the potential synergies, strategic benefits or opportunities as a result of either Novartis' acquisition of a 77% majority ownership in Alcon, Inc., or as a result of the expected merger with Alcon. Nor can there be any guarantee that the Novartis Group, or any of its divisions, or Alcon will achieve any particular financial results, whether as a result of the merger or otherwise. In particular, management's expectations could be affected by, among other things, unexpected regulatory actions or delays or government regulation generally; unexpected clinical trial results, including additional analyses of existing clinical data or unexpected new clinical data; the Group's ability to obtain or maintain patent or other proprietary intellectual property protection; disruptions from the Alcon 77% implementation and the expected merger making it more difficult to maintain business and operational relationships, and relationships with key employees; unexpected product manufacturing issues; uncertainties regarding actual or potential legal proceedings, including, among others, litigation seeking to prevent the merger from taking place, product liability litigation, litigation regarding sales and marketing practices, government investigations and intellectual property disputes; competition in general; government, industry, and general public pricing and other political pressures; uncertainties regarding the after-effects of the recent global financial and economic crisis; uncertainties regarding future global exchange rates and uncertainties regarding future demand for our products; uncertainties involved in the development of new pharmaceutical products; the impact that the foregoing factors could have on the values attributed to the Group's assets and liabilities as recorded in the Group's consolidated balance sheet; and other risks and factors referred to in Novartis AG's current Form 20-F on file with the US Securities and Exchange Commission. Should one or more of these risks or uncertainties materialize, or should underlying assumptions prove incorrect, actual results may vary materially from those described herein as anticipated, believed, estimated or expected. Novartis is providing the information in these materials as of this date and does not undertake any obligation to update any forward-looking statements as a result of new information, future events or otherwise.

All product names appearing in italics are trademarks licensed to or owned by Novartis Group companies.