



## New Detailed Phase 3 Data Show Amgen's Novel Investigational Cholesterol-Lowering Medication Evolocumab Significantly Reduced LDL Cholesterol In Patients With A Rare And Serious Genetic Disorder That Causes High Cholesterol

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### Data From Phase 3 TESLA Study in Patients With Homozygous Familial Hypercholesterolemia (HoFH) and Phase 2/3 TAUSSIG Study in Patients With Severe Familial Hypercholesterolemia Presented in Late-Breaking Session at EAS 2014 First Phase 3 Data Presentation of a PCSK9 Inhibitor in HoFH Patients

THOUSAND OAKS, Calif., June 1, 2014 /PRNewswire/ -- Amgen (NASDAQ:AMGN) today announced new detailed data from the Phase 3 TESLA study evaluating its novel investigational cholesterol-lowering medication, evolocumab (AMG 145), in patients with homozygous familial hypercholesterolemia (HoFH), a rare and serious genetic disorder characterized by extremely high low-density lipoprotein cholesterol (LDL-C), or "bad" cholesterol, and premature cardiovascular disease.<sup>1</sup> Phase 3 data from the TESLA study showed that adding evolocumab 420 mg subcutaneous monthly to a stable dose of statin therapy and other lipid-lowering medications significantly reduced LDL-C by 31 percent ( $p < 0.001$ ) from baseline at week 12 compared to placebo. Results from the TESLA study, along with preliminary findings from the Phase 2/3 TAUSSIG study in patients with severe familial hypercholesterolemia (FH), were presented today in a Clinical & Late-Breaking Session at the 82<sup>nd</sup> Congress of the European Atherosclerosis Society (EAS 2014).

Evolocumab is an investigational fully human monoclonal antibody that inhibits proprotein convertase subtilisin/kexin type 9 (PCSK9), a protein that reduces the liver's ability to remove LDL-C from the blood.<sup>2</sup>

"The data from the clinical studies evaluating evolocumab in patients with homozygous and severe familial hypercholesterolemia add to the growing body of clinical evidence supporting the effectiveness of our investigational cholesterol-lowering medication in multiple patient populations," said Sean E. Harper, M.D., executive vice president of Research and Development at Amgen. "We are extremely encouraged by these results and look forward to initiating global regulatory filings this year."

In the Phase 3 TESLA study in 49 HoFH patients, the most common adverse events (AEs), (more than one subject), in the evolocumab group were upper respiratory tract infection (three patients on evolocumab; one patient on placebo), influenza (three patients on evolocumab; 0 patients on placebo), gastroenteritis (two patients on evolocumab; 0 patients on placebo) and nasopharyngitis (two patients on evolocumab; 0 patients on placebo).

"These results are especially exciting as it's the first time we've seen Phase 3 data for a PCSK9 inhibitor in patients with homozygous familial hypercholesterolemia. These patients are the most difficult to treat as many of them have fewer functioning LDL receptors than patients studied in previously reported Phase 3 trials with evolocumab," said lead investigator Frederick J. Raal, M.D., University of Witwatersrand, Johannesburg, South Africa. "Data from the TESLA study showed evolocumab has the potential to offer additional LDL lowering for these patients who have extremely high levels of LDL or bad cholesterol because their liver cannot properly remove it from their blood stream."

In addition to data from the TESLA study, a preliminary analysis of the ongoing Phase 2/3 TAUSSIG study in five patients with severe FH due to PCSK9 gain-of-function mutations (including two receiving lipid apheresis therapy at baseline) was presented. A total of 12 AEs were reported in four patients on evolocumab. None of the AEs were serious and none resulted in permanent discontinuation of evolocumab. Additionally, the study showed that evolocumab 420 mg subcutaneous every two weeks or monthly for at least 12 weeks reduced mean LDL-C by 67 percent from baseline in five patients. Patients on apheresis were treated with evolocumab 420 mg every two weeks; all others were treated with evolocumab 420 mg monthly and could be increased to 420 mg every two weeks based on their clinical response.

"The interim 12-week results from the TAUSSIG study showed that evolocumab reduced cholesterol levels in patients with severe familial hypercholesterolemia who have markedly elevated LDL cholesterol levels due to a mutation in the PCSK9 gene, including those who also have LDL receptor mutations," said lead investigator Mariko Harada-Shiba, M.D., National Cerebral and Cardiovascular Center Research Institute, Suita, Osaka, Japan. "We look forward to additional results from the long-term five-year TAUSSIG study, which will provide further insights on evolocumab in patients with this devastating disease."

Elevated LDL-C is recognized as a major risk factor for cardiovascular disease.<sup>3,4</sup> FH is an inherited condition caused by a gene mutation which leads to high levels of LDL-C at an early age. Patients can have either one of two types of FH, heterozygous or homozygous.<sup>1</sup> Homozygous FH is the rare, more severe form of FH, occurring in approximately one in a million individuals.<sup>5</sup> It can cause a four-fold increase in LDL-C levels (e.g., 400-1,000 mg/dL).<sup>1,6</sup> Heterozygous FH (HeFH) is the more common type of FH and occurs in approximately one in 200 to 500 people.<sup>1,7,8</sup> In general, individuals with HeFH have LDL-C levels twice as high as normal (e.g., 190-350 mg/dL).<sup>1,6</sup>

#### TESLA Study Design

TESLA (Trial Evaluating PCSK9 Antibody in Subjects with LDL Receptor Abnormalities) is a two-part Phase 2/3 trial designed to evaluate the safety, tolerability and efficacy of evolocumab.

The Phase 3 12-week, double-blind, randomized, placebo-controlled, multicenter part of the TESLA trial (TESLA Part B) evaluated evolocumab compared to placebo in 49 adults and adolescents aged 12 years and over with HoFH (LDL-C  $\geq 130$  mg/dL) who were on a stable dose of statin therapy and other lipid-lowering medications. Patients were randomized to evolocumab 420 mg subcutaneous monthly or placebo subcutaneous monthly. The primary endpoint was the percent reduction from baseline in LDL-C at week 12. Secondary endpoints included mean percent change from baseline in LDL-C, apolipoprotein B (ApoB) and lipoprotein(a) (Lp(a)) at weeks 6 and 12, and percent change from baseline in ApoB and Lp(a) at week 12.

The Phase 2 12-week, open-label, single-arm, multicenter part of the TESLA trial (TESLA Part A) evaluated eight patients with HoFH who were on

stable drug therapy for four weeks or more. Patients received evolocumab 420 mg subcutaneous once monthly for a minimum of 12 weeks, followed by every two weeks for another 12 weeks. The primary endpoint was the percent reduction from baseline in LDL-C at week 12. Positive results from the Phase 2 TESLA trial were presented at the 81<sup>st</sup> Congress of the European Atherosclerosis Society (EAS 2013) and published in *Circulation*.<sup>9</sup>

### **TAUSSIG Study Design**

TAUSSIG (Trial Assessing Long Term Use of PCSK9 Inhibition in Subjects with Genetic LDL Disorders) is a Phase 2/3 trial designed to evaluate the long-term safety, tolerability and efficacy of evolocumab with an estimated enrollment of 310 patients with severe FH.

In the ongoing, multicenter, open-label, long-term, active treatment-only study, patients with severe FH are randomized to subcutaneous evolocumab 420 mg every two weeks or monthly and assessed for up to five years. The primary endpoint of the study is subject incidence of treatment emergent adverse events (TEAEs). Secondary endpoints include the following, measured from baseline at each scheduled visit: percent change in LDL-C, percent change in non-high-density lipoprotein cholesterol (non-HDL-C), percent change in apolipoprotein B (ApoB), percent change in total cholesterol (TC)/HDL-C ratio, percent change in ApoB/apolipoprotein A1 ratio, percent change in lipoprotein(a) and response rate of subjects with 15 percent or greater reduction in LDL-C.

Adolescent and adult patients were eligible for the study if they participated in a qualifying evolocumab parent study or have a diagnosis of FH. For subjects without diagnosed coronary heart disease (CHD)/CHD risk equivalent, LDL-C was  $\geq 130$  mg/dL (3.4 mmol/L) while for subjects with diagnosed CHD or CHD risk equivalent, LDL-C was  $\geq 100$  mg/dL (2.6 mmol/L). Subjects on apheresis did not have a LDL-C entry requirement. Patients on apheresis were initiated with treatment with evolocumab 420 mg every two weeks; all others were initiated with evolocumab 420 mg monthly and could be increased to 420 mg every two weeks based on their clinical response.

### **About Evolocumab**

Evolocumab is a fully human monoclonal antibody that inhibits proprotein convertase subtilisin/kexin type 9 (PCSK9).<sup>2</sup> PCSK9 is a protein that targets LDL receptors for degradation and thereby reduces the liver's ability to remove LDL-C, or "bad" cholesterol, from the blood.<sup>10</sup> Evolocumab, being developed by Amgen scientists, is designed to bind to PCSK9 and inhibit PCSK9 from binding to LDL receptors on the liver surface. In the absence of PCSK9, there are more LDL receptors on the surface of the liver to remove LDL-C from the blood.<sup>2</sup>

### **About PROFICIO: The Evolocumab Clinical Trial Program**

PROFICIO, which stands for the Program to Reduce LDL-C and Cardiovascular Outcomes Following Inhibition of PCSK9 In Different Populations, is a large and comprehensive clinical trial program evaluating evolocumab in 20 clinical trials, with a combined planned enrollment of nearly 30,000 patients.

The Phase 3 program includes 14 trials to evaluate evolocumab administered every two weeks and monthly in multiple patient populations, including in combination with statins in patients with hyperlipidemia (LAPLACE-2 and YUKAWA-2); in patients with hyperlipidemia who cannot tolerate statins (GAUSS-2 and GAUSS-3); as a stand-alone treatment in patients with hyperlipidemia (MENDEL-2); in patients whose elevated cholesterol is caused by genetic disorders called heterozygous (RUTHERFORD-2 and TAUSSIG) and homozygous (TESLA and TAUSSIG) familial hypercholesterolemia; as well as the administration of evolocumab (THOMAS-1 and THOMAS-2).

Five studies in the evolocumab Phase 3 program will provide long-term safety and efficacy data. These include FOURIER (Eurther Cardiovascular Outcomes Research with PCSK9 Inhibition in Subjects with Elevated Risk), which will assess whether treatment with evolocumab in combination with statin therapy compared to placebo and statin therapy reduces recurrent cardiovascular events in approximately 22,500 patients with cardiovascular disease; DESCARTES (Durable Effect of PCSK9 Antibody CompAred with PlacEbo Study) in patients with hyperlipidemia at risk for cardiovascular disease; OSLER-2 (Oupen Label Study of Long TERm Evaluation Against LDL-C Trial-2) in patients with high cholesterol who completed any of the Phase 3 studies; GLAGOV (Global Assessment of Plaque ReGression with a PCSK9 Antibody as Measured by IntraVascular Ultrasound), which will determine the effect of evolocumab on coronary atherosclerosis in approximately 950 patients undergoing cardiac catheterization; and TAUSSIG (Trial Assessing Long Term Use of PCSK9 Inhibition in Subjects with Genetic LDL Disorders), which will assess the long-term safety and efficacy of evolocumab on LDL-C in patients with severe familial hypercholesterolemia.

### **About Amgen's Commitment to Cardiovascular Disease**

Amgen is dedicated to addressing important scientific questions in order to advance care and improve the lives of patients with cardiovascular disease. Through its own research and development efforts and innovative partnerships, Amgen has built a robust cardiology pipeline consisting of several investigational molecules in an effort to address a number of today's important unmet patient needs, such as high cholesterol and heart failure.

### **About Amgen**

Amgen is committed to unlocking the potential of biology for patients suffering from serious illnesses by discovering, developing, manufacturing and delivering innovative human therapeutics. This approach begins by using tools like advanced human genetics to unravel the complexities of disease and understand the fundamentals of human biology.

Amgen focuses on areas of high unmet medical need and leverages its biologics manufacturing expertise to strive for solutions that improve health outcomes and dramatically improve people's lives. A biotechnology pioneer since 1980, Amgen has grown to be the world's largest independent biotechnology company, has reached millions of patients around the world and is developing a pipeline of medicines with breakaway potential.

For more information, visit [www.amgen.com](http://www.amgen.com) and follow us on [www.twitter.com/amgen](http://www.twitter.com/amgen).

### **Forward-Looking Statements**

This news release contains forward-looking statements that are based on management's current expectations and beliefs and are subject to a number of risks, uncertainties and assumptions that could cause actual results to differ materially from those described. All statements, other than statements of historical fact, are statements that could be deemed forward-looking statements, including estimates of revenues, operating margins, capital expenditures, cash, other financial metrics, expected legal, arbitration, political, regulatory or clinical results or practices, customer and prescriber patterns or practices, reimbursement activities and outcomes and other such estimates and results. Forward-looking statements involve significant risks and uncertainties, including those discussed below and more fully described in the Securities and Exchange Commission (SEC) reports filed by Amgen, including Amgen's most recent annual report on Form 10-K and any subsequent periodic reports on Form 10-Q and Form 8-K. Please refer to Amgen's most recent Forms 10-K, 10-Q and 8-K for additional information on the uncertainties and risk factors related to our business. Unless otherwise noted, Amgen is providing this information as of June 1, 2014, and expressly disclaims any duty to update information contained in this

news release.

No forward-looking statement can be guaranteed and actual results may differ materially from those Amgen Inc. and its subsidiaries (which are collectively referred to as we, or us) project. Discovery or identification of new product candidates or development of new indications for existing products cannot be guaranteed and movement from concept to product is uncertain; consequently, there can be no guarantee that any particular product candidate or development of a new indication for an existing product will be successful and become a commercial product. Further, preclinical results do not guarantee safe and effective performance of product candidates in humans. The complexity of the human body cannot be perfectly, or sometimes, even adequately modeled by computer or cell culture systems or animal models. The length of time that it takes for us and our partners to complete clinical trials and obtain regulatory approval for product marketing has in the past varied and we expect similar variability in the future. We develop product candidates internally and through licensing collaborations, partnerships and joint ventures. Product candidates that are derived from relationships may be subject to disputes between the parties or may prove to be not as effective or as safe as we may have believed at the time of entering into such relationship. Also, we or others could identify safety, side effects or manufacturing problems with our products after they are on the market. Our business may be impacted by government investigations, litigation and product liability claims. If we fail to meet the compliance obligations in the corporate integrity agreement between us and the U.S. government, we could become subject to significant sanctions. We depend on third parties for a significant portion of our manufacturing capacity for the supply of certain of our current and future products and limits on supply may constrain sales of certain of our current products and product candidate development.

In addition, sales of our products (including products of our wholly-owned subsidiaries) are affected by the reimbursement policies imposed by third-party payers, including governments, private insurance plans and managed care providers and may be affected by regulatory, clinical and guideline developments and domestic and international trends toward managed care and healthcare cost containment as well as U.S. legislation affecting pharmaceutical pricing and reimbursement. Government and others' regulations and reimbursement policies may affect the development, usage and pricing of our products. In addition, we compete with other companies with respect to some of our marketed products as well as for the discovery and development of new products. We believe that some of our newer products, product candidates or new indications for existing products, may face competition when and as they are approved and marketed. Our products may compete against products that have lower prices, established reimbursement, superior performance, are easier to administer, or that are otherwise competitive with our products. In addition, while we and our partners routinely obtain patents for products and technology, the protection of our products offered by patents and patent applications may be challenged, invalidated or circumvented by our competitors and there can be no guarantee of our or our partners' ability to obtain or maintain patent protection for our products or product candidates. We cannot guarantee that we will be able to produce commercially successful products or maintain the commercial success of our existing products. Our stock price may be affected by actual or perceived market opportunity, competitive position, and success or failure of our products or product candidates. Further, the discovery of significant problems with a product similar to one of our products that implicate an entire class of products could have a material adverse effect on sales of the affected products and on our business and results of operations. Our efforts to integrate the operations of companies we have acquired may not be successful.

The scientific information discussed in this news release related to our product candidates is preliminary and investigative. Such product candidates are not approved by the U.S. Food and Drug Administration (FDA), and no conclusions can or should be drawn regarding the safety or effectiveness of the product candidates.

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