



## The Lancet Publication Of LAPLACE-TIMI 57 And MENDEL Studies Showed AMG 145 Significantly Reduced LDL Cholesterol

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### LAPLACE-TIMI 57 Showed AMG 145 Reduced LDL Cholesterol up to 66 Percent in Patients Currently Taking Statins MENDEL Showed AMG 145 Reduced LDL Cholesterol up to 53 Percent in Patients Not Taking Statins Data Presented Simultaneously at American Heart Association Scientific Sessions 2012

THOUSAND OAKS, Calif., Nov. 6, 2012 /PRNewswire/ -- Amgen (NASDAQ:AMGN) today announced that results from the LAPLACE-TIMI 57 and MENDEL Phase 2 studies evaluating AMG 145 in hypercholesterolemic patients with or without statins, respectively, showed that treatment with AMG 145 resulted in a statistically significant reduction in low-density lipoprotein (LDL) cholesterol. The two studies were presented today at the American Heart Association Scientific Sessions 2012 and simultaneously published in *The Lancet*.

AMG 145 is an investigational fully human monoclonal antibody directed against PCSK9, a protein that reduces the liver's ability to remove LDL-C, or "bad" cholesterol from the blood. LDL-C is a major contributor of risk for cardiovascular disease.<sup>[i]</sup> Despite the availability of various treatments for lowering LDL-C, it is estimated that in two-thirds of treated high-risk patients, LDL-C is not well controlled.<sup>[ii], [iii]</sup>

#### LAPLACE-TIMI 57 Primary Results

- Results from the LAPLACE-TIMI 57 study showed that all six dose regimens of AMG 145 significantly decreased LDL-C, measured by preparative ultracentrifugation, from baseline compared to placebo at week 12 in patients at risk for cardiovascular disease already on statin therapy ( $p < 0.0001$ ).
- In these at risk patients, LAPLACE-TIMI 57 showed the addition of AMG 145 to statin therapy, with or without ezetimibe, achieved significant decreases in LDL-C.
- At week 12, AMG 145 reduced LDL-C, measured by preparative ultracentrifugation, by up to 66 percent when dosed every two weeks (Q2W) and up to 50 percent when dosed every four weeks (Q4W), compared to placebo ( $p < 0.001$  for the highest dose vs. placebo).
  - The mean reduction in LDL-C versus placebo for AMG 145 dosed Q2W was 42 percent in the 70 mg group; 60 percent in the 105 mg group; and 66 percent in the 140 mg group.
  - The mean reduction in LDL-C versus placebo for AMG 145 dosed Q4W was 42 percent in the 280 mg group; 50 percent in the 350 mg group; and 50 percent in the 420 mg group.
- The most commonly reported adverse events (AEs) for AMG 145 were nasopharyngitis, cough and nausea.

"Statins have been a critical tool in the management of high cholesterol, but even at high doses, statins do not always achieve the targeted level of LDL (bad) cholesterol in our high risk patients," said Robert Giugliano, M.D., Brigham and Women's Hospital, Cardiovascular Medicine. "The LAPLACE-TIMI 57 study is very relevant in that the addition of AMG 145 to background therapy with statins resulted in significant reductions in LDL-cholesterol at all the doses tested."

#### Efficacy and Safety of a Fully Human Monoclonal Antibody Against PCSK9 as Monotherapy for Hypercholesterolemia: Results from the MENDEL Study, a Global Phase 2 Trial of AMG 145

- MENDEL is the first monotherapy study of a PCSK9-inhibitor, and evaluated AMG 145 in patients who were not taking a statin.
- Results of the study at week 12 demonstrated that AMG 145, dosed Q2W or Q4W, significantly reduced LDL-C, measured by preparative ultracentrifugation, compared to placebo ( $p < 0.001$ ).
- At week 12, treatment with AMG 145 reduced LDL-C, measured by preparative ultracentrifugation, by up to 47 percent in the groups dosed Q2W; and up to 53 percent from baseline in the groups dosed Q4W, compared to placebo ( $p < 0.001$  for the highest dose vs. placebo).
  - The mean decrease in LDL-C from baseline for AMG 145 dosed Q2W was 41 percent in the 70 mg group; 44 percent in the 105 mg group; and 51 percent in the 140 mg group compared to four percent for placebo.
  - The mean decrease in LDL-C from baseline for AMG 145 dosed Q4W was 39 percent in the 280 mg group; 43 percent in the 350 mg group; and 48 percent in the 420 mg group compared to five percent increase for placebo.
- The most commonly reported AEs for AMG 145, were upper respiratory tract infection, nasopharyngitis and diarrhea.

"In the MENDEL study, AMG 145 monotherapy showed robust reductions in serum LDL-C with both the Q2W and Q4W dosing regimens in patients with high cholesterol regardless of sex, age, race or cardiovascular risk factors," said Michael Koren, M.D., C.P.I. of Jacksonville Center for Clinical Research. "This study provides support that treatment with AMG 145 may be an alternative approach for LDL-C reduction in patients who cannot take statins."

These studies are two of four Phase 2 studies of AMG 145 being presented at the American Heart Association Scientific Sessions 2012.

#### LAPLACE-TIMI 57 Study Design

LAPLACE-TIMI 57 (LDL-C Assessment with PCSK9 monoclonal Antibody inhibition Combined with statin therapy – Thrombolysis In Myocardial

Infarction-57) is a Phase 2 randomized, double-blind, dose-ranging, placebo-controlled study that included eight treatment arms to evaluate the efficacy, safety and tolerability of AMG 145, administered subcutaneously, in 629 patients at risk for cardiovascular disease with LDL-C  $\geq$  85 mg/dL when added to a stable dose of statin with or without ezetimibe. Treatment arms included AMG 145 (70 mg, 105 mg and 140 mg) versus placebo Q2W and AMG 145 (280 mg, 350 mg and 420 mg) versus placebo Q4W. The primary endpoint of the study was the percent change from baseline in LDL-C, measured by preparative ultracentrifugation, at week 12. Secondary efficacy endpoints included the absolute change from baseline in LDL-C at week 12 and the percentage changes from baseline to week 12 in non-high-density lipoprotein (non-HDL-C), apolipoprotein B (ApoB), total cholesterol (TC)/HDL-C ratio and ApoB/ApoA1 ratio.

### **MENDEL Study Design**

MENDEL (Monoclonal Antibody Against PCSK9 to Reduce Elevated LDL-C in Patients Currently Not Receiving Drug Therapy For Easing Lipid Levels) is a Phase 2 randomized, multi-center, double-blind, controlled trial designed to evaluate the efficacy, safety and tolerability of AMG 145 in 406 patients with low cardiovascular risk (LDL-C  $\geq$  100 mg/dL and  $<$  190 mg/dL) who were not receiving statin therapy. AMG 145 was evaluated across nine treatment groups, including AMG 145 at 70 mg, 105 mg and 140 mg dosed Q2W compared to placebo Q2W; and AMG 145 at 280 mg, 350 mg and 420 mg dosed Q4W compared to placebo Q4W; or daily ezetimibe 10 mg. The primary endpoint was percentage change from baseline in LDL-C, measured by preparative ultracentrifugation, at week 12. Secondary efficacy endpoints included the absolute change from baseline in LDL-C at week 12 and the percentage changes from baseline to week 12 in non-high-density lipoprotein (non-HDL-C), apolipoprotein B (ApoB), total cholesterol (TC)/HDL-C ratio and ApoB/ApoA1 ratio.

### **Webcast Information**

Amgen will hold an analyst/investor event on Tuesday, Nov. 6, at 7:00 p.m. Pacific Standard Time to discuss data presented at AHA. A webcast of the event can be found on Amgen's website at [www.amgen.com](http://www.amgen.com), under Investors. The audio webcast will be archived and available for replay for at least 72 hours.

### **About AMG 145**

AMG 145 is a fully human monoclonal antibody directed against proprotein convertase subtilisin/kexin type 9 (PCSK9). PCSK9 is a protein that reduces the liver's ability to remove LDL-C from the blood and thereby causes bad cholesterol to increase. AMG 145, developed by Amgen scientists, binds to PCSK9 circulating in the blood and prevents PCSK9 from binding to LDL receptors in the liver. Without PCSK9 bound to them, the LDL receptors can take up and remove LDL-C from the blood, recycle and remain available for binding additional LDL-C. The Amgen Phase 2 program for AMG 145 enrolled more than 2,000 patients across seven studies to evaluate the effects of AMG 145 across multiple patient populations who may benefit from additional cholesterol lowering treatment options. The Phase 2 program is evaluating the treatment of hyperlipidemia with AMG 145 in combination with statins, in patients with hyperlipidemia who cannot tolerate statins, as a stand-alone treatment in patients with hyperlipidemia, and in patients whose elevated cholesterol is caused by genetic disorders called heterozygous and homozygous familial hypercholesterolemia.

### **About Amgen**

Amgen discovers, develops, manufactures and delivers innovative human therapeutics. A biotechnology pioneer since 1980, Amgen was one of the first companies to realize the new science's promise by bringing safe, effective medicines from lab to manufacturing plant to patient. Amgen therapeutics have changed the practice of medicine, helping millions of people around the world in the fight against cancer, kidney disease, rheumatoid arthritis, bone disease and other serious illnesses. With a deep and broad pipeline of potential new medicines, Amgen remains committed to advancing science to dramatically improve people's lives. 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 most recent 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 Nov. 6, 2012, 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 we 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 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 products liability claims. 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 are affected by the reimbursement policies imposed by third-party payors, 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 routinely obtain patents for our products and technology, the protection offered by our patents and patent applications may be challenged, invalidated or circumvented by our competitors and there can be no guarantee of our 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.

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. Only the FDA can determine whether the product candidates are safe and effective for the use(s) being investigated. Further, the scientific information discussed in this news release relating to new indications for our products is preliminary and investigative and is not part of the labeling approved by the U.S. Food and Drug Administration (FDA) for the products. The products are not approved for the investigational use(s) discussed in this news release, and no conclusions can or should be drawn regarding the safety or effectiveness of the products for these uses. Only the FDA can determine whether the products are safe and effective for these uses. Healthcare professionals should refer to and rely upon the FDA-approved labeling for the products, and not the information discussed in this news release.

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(Logo: <http://photos.prnewswire.com/prnh/20081015/AMGENLOGO>)

[i] American Heart Association. (2012). *Why Cholesterol Matters*. Retrieved September 17, 2012, from [http://www.heart.org/HEARTORG/Conditions/Cholesterol/WhyCholesterolMatters/Why-Cholesterol-Matters\\_UCM\\_001212\\_Article.jsp](http://www.heart.org/HEARTORG/Conditions/Cholesterol/WhyCholesterolMatters/Why-Cholesterol-Matters_UCM_001212_Article.jsp).

[ii] AHA 2011 Update Online. <http://circ.ahajournals.org/content/123/4/e18.full>. Page 119. Accessed November 2012.

[iii] Dyslipidaemia. *The Lancet*, 362 (9385): 717–31.doi:10.1016/S0140-6736(03)14234-1.

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