FDA Approves Amgen's Prolia(TM) (Denosumab) for Treatment of Postmenopausal Women With Osteoporosis at High Risk for Fracture

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Given As An Injection Every Six Months, Prolia Reduced Risk Of Fracture At The Spine, Hip And Other Sites

THOUSAND OAKS, Calif., June 1, 2010 /PRNewswire via COMTEX/ --Amgen Inc. (Nasdaq: AMGN) today announced that the U.S. Food and Drug Administration (FDA) has approved Prolia(TM) (denosumab) for the treatment of postmenopausal women with osteoporosis at high risk for fracture, defined as a history of osteoporotic fracture, or multiple risk factors for fracture; or patients who have failed or are intolerant to other available osteoporosis therapy. Prolia, the first and only FDA-approved RANK Ligand inhibitor, is an every six month 60 mg subcutaneous injection administered by a health care professional.

"Today's FDA approval of Prolia is the culmination of a scientific journey that started more than 15 years ago with Amgen's discovery of an essential pathway that regulates bone metabolism," said Kevin Sharer, chairman of the board and chief executive officer of Amgen. "Prolia is the result of this discovery and offers an important new medicine for postmenopausal women with osteoporosis at high risk for fracture. Amgen is proud to make this new treatment option available to physicians and patients."

Prolia's approval is based on a pivotal three-year Phase 3 study involving 7,808 postmenopausal women with osteoporosis. Treatment with Prolia resulted in greater bone density, stronger bones, and reduced risk for vertebral, hip and non-vertebral fractures measured at three years.(i)

"For the many osteoporosis patients who are at high risk for fracture, Prolia's approval marks the first new class of medicine introduced in nearly a decade," said Felicia Cosman, M.D., clinical director of the National Osteoporosis Foundation and medical director of the Clinical Research Center at Helen Hayes Hospital in New York. "Prolia is a new treatment that reduces the risk of fracture at key sites, including the hip and spine, and is given as a convenient twice-yearly shot just under the skin. It will be a welcome new option."

"While this is an important milestone for Amgen, it is even more important for the postmenopausal patients with osteoporosis who are at high risk for fracture," said Robert A. Bradway, president and chief operating officer of Amgen. "We have priced Prolia responsibly while reflecting its strong therapeutic value and expect to make it commercially available in the U.S. within the next week."

Prolia Clinical Data

The pivotal three-year Phase 3 Fracture REduction Evaluation of Denosumab in Osteoporosis every six Months (FREEDOM) study in 7,808 women with postmenopausal osteoporosis demonstrated that Prolia, administered as a 60mg subcutaneous injection every six months, compared with placebo at three years resulted in: (ii)

- **A 68 percent reduction in vertebral fractures** (4.8 percent absolute risk reduction). The incidence of new spine fractures was 2.3 percent with Prolia vs. 7.2 percent with placebo;
- **A 40 percent reduction in hip fractures** (0.3 percent absolute risk reduction). The incidence of hip fractures was 0.7 percent with Prolia vs. 1.2 percent with placebo;
- **A 20 percent reduction in non-vertebral fractures** (1.5 percent absolute risk reduction). The incidence of non-spine fractures was 6.5 percent with Prolia vs. 8 percent with placebo;
- **Significant bone density increases at all key sites measured** (8.8 percent at the lumbar spine, 6.4 percent at the total hip, and 5.2 percent at the femoral neck).

Prolia is contraindicated in patients with hypocalcemia. Pre-existing hypocalcemia must be corrected prior to initiating Prolia. Hypocalcemia may worsen, especially in patients with severe renal impairment. All patients should be adequately supplemented with calcium and vitamin D.

In the pivotal study, serious infections leading to hospitalizations were reported more frequently in the Prolia-treated patient group. Serious skin infections, as well as infections of the abdomen, urinary tract and ear, were more frequent in patients treated with Prolia. Patients should be advised to seek prompt medical attention if they develop signs or symptoms of severe infection, including cellulitis. Endocarditis was reported more frequently in the Prolia-treated patient group. Epidermal and dermal adverse events such as dermatitis, rashes, and eczema have been reported. Discontinuation of Prolia should be considered if severe symptoms develop.

Prolia resulted in significant suppression of bone remodeling. The significance of these findings is unknown. The long-term consequences of the degree of suppression of bone remodeling observed with Prolia may contribute to adverse outcomes such as osteonecrosis of the jaw (ONJ), atypical fractures, and delayed fracture healing. ONJ has been reported in patients with Prolia. Patients should be monitored for these adverse outcomes. The most common adverse reactions (> 5 percent and more common than placebo) were back pain, pain in extremity, musculoskeletal pain, hypercholesterolemia, and cystitis. Pancreatitis has also been reported with Prolia.

Commitment to Safety

Amgen has worked with the FDA to create several programs to help physicians and patients make treatment decisions for postmenopausal women with osteoporosis at high risk for fracture based on the most comprehensive and current Prolia benefit:risk information and to facilitate post-marketing safety surveillance. These include:

- **A Risk Evaluation and Mitigation Strategy (REMS)** to communicate the risks of Prolia, which consists of a communication plan for health care providers and a medication guide for patients.
- **Comprehensive post-marketing surveillance.** Amgen continues to gather data from extension studies in more than

4,500 women with postmenopausal osteoporosis who will have exposure to Prolia for up to 10 years. In addition, Amgen will implement an international Prolia long-term safety observational study to assess pre-specified adverse events of special interest based on seven existing data systems from five countries, which will include healthcare administrative databases, electronic medical records, and national health registries. These women with postmenopausal osteoporosis who received Prolia will be followed long term. Finally, Amgen is launching the Prolia Post marketing Active Safety Surveillance Program to monitor the long-term safety of Prolia and improve the quality of data collected in the post-marketing setting. This program is intended to enhance the adverse event reporting system by soliciting reports of pre-specified adverse events of special interest.

Why New Options are Needed to Treat Postmenopausal Osteoporosis

In the U.S., one in two women over the age of 50 with postmenopausal osteoporosis will experience a fracture in her remaining lifetime.(iii) These fractures can have severe clinical consequences. (iv)(v) In 2005, osteoporosis-related fractures were responsible for an estimated $19 billion in costs and by 2025 experts predict that these costs will rise to approximately $25 billion.(vi)(vii)

Postmenopausal women with osteoporosis who have experienced a fracture are at increased risk for another fracture.(viii)(ix)(x) An analysis of data combined over multiple U.S. health plans showed that approximately 50 percent of patients discontinue oral bisphosphonate therapy within the first year.(xi) Some patients cannot tolerate available osteoporosis therapy. Among patients who discontinue these treatments, many do so because of side effects including intolerance. (xii)(xiii)(xiv) Poor adherence can increase fracture risk and has been associated with more fracture-related hospitalizations. (xv)

There remain opportunities for new therapeutic options for women with postmenopausal osteoporosis at high risk for fracture, which include those with prior osteoporotic fracture, or those with two or more risk factors, or patients with osteoporosis who are intolerant to available therapy, or patients with osteoporosis who have failed available therapy. Prolia may be considered for these patients.

Introducing ProliaPlus(TM)

ProliaPlus is a multi-faceted product support program designed to provide comprehensive assistance to healthcare providers, patients, and their caregivers to help facilitate access to Prolia for appropriate patients.

ProliaPlus provides information and assistance on issues related to product insurance coverage to physician offices. Additionally, upon request, ProliaPlus will remind patients and providers about when the patient's next dose is due, thus helping to support patient adherence to therapy. ProliaPlus will also have information on the availability of potential financial assistance programs.

Providing Value at a Competitive Price

Prolia will cost $825 per 60 mg injection (based on "wholesale acquisition cost" or WAC). Prolia's price is competitive with other branded osteoporosis therapies while reflecting its positive clinical profile for patients at high risk for fracture.

Reimbursement Pathways for Prolia

Payers will determine, based on the prescribing information including the instruction that Prolia should be administered by a Health Care Professional, whether Prolia is covered under their medical and/or pharmacy benefit. Amgen is prepared to support both medical and pharmacy benefit paths based on the payer's reimbursement decisions. Product will be stocked at wholesalers within a week of approval and Amgen is fully prepared for rapid replenishment to the wholesale level as required. In addition, single unit syringe ordering will be available to health care providers from their distributor. Because Prolia has been approved in June, most patients who receive Prolia will only receive one dose this year.

To view the Prolia Prescribing Information and REMS materials, click here: wwwext.amgen.com.

About Prolia(TM) (denosumab)

Prolia is the first and only approved therapy that specifically targets RANK Ligand, an essential regulator of osteoclasts (the cells that break down bone).

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 and 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, 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. To learn more about our pioneering science and our vital medicines, visit http://www.amgen.com/.

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 June 1, 2010 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.

(i) Cummings SR et al. Denosumab for Prevention of Fractures in Postmenopausal Women with Osteoporosis. N Engl J Med. 2009; 361(8):756-65.

(ii) Prolia Prescribing Information.

(iii) Osteoporosis Fast Facts. Washington (DC): National Osteoporosis Foundation. Accessed on May 10, 2010 at http://www.nof.org/osteoporosis/diseasefacts.htm#Symptoms

(iv) National Osteoporosis Foundation. http://www.nof.org/professionals/pdfs/NOF_ClinicianGuide2009_v7.pdf, Accessed May 13, 2010.

(v) Cooper C. The crippling consequences of fractures and their impact on quality of life. Am J Med. 1997 Aug 18;103(2A):12S-17S; discussion 17S-19S.

(vi) Burge R et al. Incidence and economic burden of osteoporosis-related fractures in the United States, 2005-2025. J Bone Miner Res. 2007 Mar;22(3):465-75.

(vii) Osteoporosis Fast Facts. Washington (DC): National Osteoporosis Foundation. Accessed on April 29, 2010 at http://www.nof.org/osteoporosis/diseasefacts.htm

(viii) Kanis JA et al. A Meta-Analysis of Previous Fracture and Subsequent Fracture Risk. Bone. 2004;35(2):375-82.

(ix) Lindsay R et al. Risk of new vertebral fracture in the year following a fracture. JAMA. 2001 Jan 17;285(3):320-33.

(x) Klotzbuecher CM et al. Patients with prior fractures have an increased risk of future fractures: a summary of the literature and statistical synthesis. J Bone Miner Res. 2000 Apr;15(4):721-39.

(xi) Weycker D. et al. Compliance with drug therapy for postmenopausal osteoporosis. Osteoporos Int. 2006;17(11):1645-52. Epub 2006 Jul 22.

(xii) Ettinger B et al, Clinic visits and hospital admissions for care of acid related upper gastrointestinal disorders in women using alendronate for osteoporosis. Amer J Man Care,1998 Oct;

4(10):1377-82.
(xiii) Tosteson A et al. Early discontinuation of treatment for osteoporosis. Am J Med 2003 Aug 15;115:209-16.
(xiv) Lewiecki EM et al. Adherence to and gastrointestinal tolerability of monthly oral or quarterly intravenous ibandronate therapy in women with previous intolerance to oral bisphosphonates: a 12-month, open-label, prospective evaluation. Clin Ther. 2008 Apr;30(4):605-21.
(xv) Siris ES et al. Adherence to bisphosphonate therapy and fracture rates in osteoporotic women: relationship to vertebral and nonvertebral fractures from 2 US claims databases. Mayo Clin Proc. 2006 Aug;81(8):1013-22.

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