

# Bayer and Onyx Report Phase 3 Study Results of NEXAVAR® (sorafenib) as Adjuvant Treatment for Patients with Liver Cancer Who Have Undergone Surgery or Local Ablation

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WHIPPANY, N.J., THOUSAND OAKS, Calif. and SOUTH SAN FRANCISCO, Calif., March 11, 2014 /PRNewswire/ -- Bayer HealthCare Pharmaceuticals Inc. and Onyx Pharmaceuticals, Inc., an Amgen subsidiary (Nasdaq: AMGN), today announced that a Phase 3 trial evaluating the investigational use of NEXAVAR<sup>®</sup> (sorafenib) tablets as an adjuvant treatment for patients with hepatocellular carcinoma (HCC), or liver cancer, who had no detectable disease after surgical resection or local ablation, did not meet its primary endpoint of improving recurrence-free survival. The safety findings were consistent with the known profile of sorafenib. Data from this study will be submitted for presentation at an upcoming scientific congress.

"While the primary endpoint of this adjuvant trial was not met, Bayer and Onyx remain dedicated to ongoing research in all stages of liver cancer," said Pamela A. Cyrus, M.D., Vice President and Head of U.S. Medical Affairs, Bayer HealthCare Pharmaceuticals. "The outcome announced today does not affect the currently approved indications. NEXAVAR is approved for the treatment of patients with unresectable liver cancer."

Full prescribing information for NEXAVAR is available at www.NEXAVAR-us.com.

#### **About the STORM Trial**

The Phase 3, randomized, double-blind, placebo-controlled STORM (Sorafenib as Adjuvant Treatment in the Prevention of Recurrence of Hepatocellular Carcinoma) trial is an international multicenter study that evaluated clinical benefit of sorafenib versus placebo as an adjuvant treatment in patients with HCC following potential curative treatment (surgical resection or local ablation). The primary endpoint of the study was recurrence-free survival (i.e., the length of time that a patient survives without recurrence of HCC). Secondary endpoints included time to recurrence of HCC (intrahepatic and extrahepatic) and overall survival. Safety and tolerability were also assessed. The trial included approximately 1,100 patients who were randomized to receive 400 mg of sorafenib twice daily or matching placebo for four years or until disease recurrence, whichever occurred first.

#### **About Liver Cancer**

Hepatocellular carcinoma is the most common form of liver cancer and is responsible for about 80 percent of the primary malignant liver tumors in adults. <sup>1,2</sup> Liver cancer is the sixth most common cancer in the world and is the second most common cause of death from cancer worldwide. More than 780,000 cases of liver cancer are diagnosed worldwide each year (more than 395,000 in China, 52,000 in the European Union and 30,000 in the United States) and the incidence is increasing. In 2012, approximately 746,000 people died of liver cancer including approximately 383,000 in China, 48,000 in the European Union and 24,000 in the United States. <sup>3</sup>

## About NEXAVAR® (sorafenib) Tablets

NEXAVAR is approved in the U.S. for the treatment of patients with unresectable hepatocellular carcinoma, patients with advanced renal cell carcinoma and patients with locally recurrent or metastatic, progressive, differentiated thyroid carcinoma refractory to radioactive iodine treatment. NEXAVAR is thought to inhibit both the tumor cell and tumor vasculature. In in vitro studies, NEXAVAR has been shown to inhibit multiple kinases thought to be involved in both cell proliferation (growth) and angiogenesis (blood supply) – two important processes that enable cancer growth. These kinases include Raf kinase, VEGFR-1, VEGFR-2, VEGFR-3, PDGFR-B, KIT, FLT-3 and RET.

NEXAVAR is currently approved in more than 100 countries. NEXAVAR is also being evaluated by Bayer and Onyx, international study groups, government agencies and individual investigators in a range of cancers.

NEXAVAR is co-developed by Onyx and Bayer, except in Japan where Bayer manages all development. The companies co-promote NEXAVAR in the U.S. Outside of the U.S. Bayer has exclusive marketing rights, and Bayer and Onyx share profits globally, excluding Japan.

#### Important Safety Considerations For NEXAVAR® (sorafenib) Tablets

NEXAVAR in combination with carboplatin and paclitaxel is contraindicated in patients with squamous cell lung cancer.

Cardiac ischemia and/or myocardial infarction may occur. The incidence of cardiac ischemia/infarction in NEXAVAR-treated vs. placebo-treated patients was 2.7% vs. 1.3%, 2.9% vs. 0.4%, and 1.9% vs. 0% in the HCC, RCC, and DTC studies, respectively. Temporary or permanent discontinuation of NEXAVAR should be considered in patients who develop cardiac ischemia and/or myocardial infarction.

An increased risk of bleeding may occur following NEXAVAR administration. The following bleeding adverse reactions were reported in the NEXAVAR-treated vs. placebo-treated patients, respectively, in the HCC study: bleeding from esophageal varices (2.4% vs. 4%) and bleeding with fatal outcome at any site (2.4% vs. 4%); in the RCC study: bleeding regardless of causality (15.3% vs. 8.2%), Grade 3 bleeding (2.0% vs. 1.3%), Grade 4 bleeding (0% vs. 0.2%), and one fatal hemorrhage in each treatment group; in the DTC study: bleeding (17.4% vs. 9.6%) and Grade 3 bleeding (1% vs. 1.4%). If bleeding necessitates medical intervention, consider permanent discontinuation of NEXAVAR.

Hypertension may occur early in the course of treatment. Monitor blood pressure weekly during the first 6 weeks and periodically thereafter, and treat, if required.

Hand-foot skin reaction and rash are common and management may include topical therapies for symptomatic relief. In cases of any severe or persistent adverse reactions, temporary treatment interruption, dose modification, or permanent discontinuation of NEXAVAR should be considered. NEXAVAR should be discontinued if Stevens-Johnson syndrome or toxic epidermal necrolysis are suspected as these may be life-threatening.

Gastrointestinal perforation was an uncommon adverse reaction and has been reported in less than 1% of patients taking NEXAVAR. Discontinue NEXAVAR in the event of a gastrointestinal perforation.

Patients taking concomitant warfarin should be monitored regularly for changes in prothrombin time (PT), International Normalized Ratio (INR), or

clinical bleeding episodes.

Temporary interruption of NEXAVAR therapy is recommended in patients undergoing major surgical procedures.

NEXAVAR, in combination with gemcitabine/cisplatin, is not recommended in patients with squamous cell lung cancer. The safety and effectiveness of NEXAVAR has not been established in patients with non-small cell lung cancer.

NEXAVAR can prolong the QT/QTc interval and increase the risk for ventricular arrhythmias. Avoid use in patients with congenital long QT syndrome and monitor patients with congestive heart failure, bradyarrhythmias, drugs known to prolong the QT interval, and electrolyte abnormalities. Interrupt NEXAVAR if QTc interval is greater than 500 milliseconds or for an increase from baseline of 60 milliseconds or greater.

Drug-induced hepatitis with NEXAVAR may result in hepatic failure and death. Liver function tests should be monitored regularly and in cases of increased transaminases without alternative explanation NEXAVAR should be discontinued.

NEXAVAR may cause fetal harm when administered to a pregnant woman. Women of child-bearing potential should be advised to avoid becoming pregnant while on NEXAVAR and female patients should also be advised against breastfeeding while receiving NEXAVAR.

In DTC, NEXAVAR impairs exogenous thyroid suppression. Elevation of thyroid stimulating hormone (TSH) level above 0.5 mU/L was observed in 41% of NEXAVAR-treated patients as compared with 16% of placebo-treated patients in the DTC study. Monitor TSH levels monthly and adjust thyroid replacement medication as needed in patients with DTC.

Elevations in serum lipase and reductions in serum phosphate of unknown etiology have been associated with NEXAVAR.

Avoid concomitant use of strong CYP3A4 inducers, when possible, because inducers can decrease the systemic exposure of sorafenib. NEXAVAR exposure decreases when co-administered with oral neomycin. Effects of other antibiotics on NEXAVAR pharmacokinetics have not been studied.

Most common adverse reactions reported for NEXAVAR-treated patients vs. placebo-treated patients in unresectable HCC, respectively, were: diarrhea (55% vs. 25%), fatigue (46% vs. 45%), abdominal pain (31% vs. 26%), weight loss (30% vs. 10%), anorexia (29% vs. 18%), nausea (24% vs. 20%), and hand-foot skin reaction (21% vs. 3%). Grade 3/4 adverse reactions were 45% vs. 32%.

Most common adverse reactions reported for NEXAVAR-treated patients vs. placebo-treated patients in advanced RCC, respectively, were: diarrhea (43% vs. 13%), rash/desquamation (40% vs. 16%), fatigue (37% vs. 28%), hand-foot skin reaction (30% vs. 7%), alopecia (27% vs. 3%), and nausea (23% vs. 19%). Grade 3/4 adverse reactions were 38% vs. 28%.

Most common adverse reactions reported for NEXAVAR-treated patients vs. placebo-treated patients in DTC, respectively, were: Palmar-plantar erythrodysesthesia syndrome (PPES) (69% vs. 8%), diarrhea (68% vs. 15%), alopecia (67% vs. 8%), weight loss (49% vs. 14%), fatigue (41% vs. 20%), hypertension (41% vs. 12%), rash (35% vs. 7%), decreased appetite (30% vs. 5%), stomatitis (24% vs. 3%), nausea (21% vs. 12%), pruritus (20% vs. 11%), and abdominal pain (20% vs. 7%). Grade 3/4 adverse reactions were 65% vs. 30%.

For information about NEXAVAR including U.S. NEXAVAR prescribing information, visit <a href="www.NEXAVAR-us.com">www.NEXAVAR-us.com</a> or call 1.866.NEXAVAR (1.866.639.2827).

## About Bayer HealthCare Pharmaceuticals Inc.

Bayer HealthCare Pharmaceuticals Inc. is the U.S.-based pharmaceuticals business of Bayer HealthCare LLC, a subsidiary of Bayer AG. Bayer HealthCare is one of the world's leading, innovative companies in the healthcare and medical products industry, and combines the activities of the Animal Health, Consumer Care, Medical Care, and Pharmaceuticals divisions. As a specialty pharmaceutical company, Bayer HealthCare Pharmaceuticals Inc. provides products for General Medicine, Hematology, Neurology, Oncology and Women's Healthcare. The company's aim is to discover and manufacture products that will improve human health worldwide by diagnosing, preventing and treating diseases.

## **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 and follow us on www.twitter.com/amgen.

## About Onyx Pharmaceuticals, Inc.

Based in South San Francisco, California, Onyx Pharmaceuticals, Inc., an Amgen subsidiary, is a biopharmaceutical company engaged in the development and commercialization of innovative therapies for improving the lives of people with cancer. The company is focused on developing novel medicines that target key molecular pathways. For more information about Onyx, visit the company's website at <a href="https://www.onyx.com">www.onyx.com</a>. Onyx Pharmaceuticals is on Twitter. Sign up to follow our Twitter feed @OnyxPharm at <a href="https://twitter.com/OnyxPharm">https://twitter.com/OnyxPharm</a>.

## **Forward Looking Statements**

Bayer Forward Looking Statements

This news release may contain forward-looking statements based on current assumptions and forecasts made by Bayer Group or subgroup management. Various known and unknown risks, uncertainties and other factors could lead to material differences between the actual future results, financial situation, development or performance of the company and the estimates given here. These factors include those discussed in Bayer's public reports which are available on the Bayer Web site at <a href="https://www.bayer.com">www.bayer.com</a>. The company assumes no liability whatsoever to update these forward-looking statements or to conform them to future events or developments.

Amgen Forward-Looking Statements

This news release contains forward-looking statements that are based on the current expectations and beliefs of Amgen Inc. and its subsidiaries

(Amgen) 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 Inc., including Amgen Inc.'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 Inc.'s most recent Forms 10-K, 10-Q and 8-K for additional information on the uncertainties and risk factors related to Amgen's business. Unless otherwise noted, Amgen is providing this information as of March 11, 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 projects. 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 Amgen and its partners to complete clinical trials and obtain regulatory approval for product marketing has in the past varied and Amgen expects similar variability in the future. Amgen develops 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 Amgen may have believed at the time of entering into such relationship. Also, Amgen or others could identify safety, side effects or manufacturing problems with Amgen's products after they are on the market. Amgen's business may be impacted by government investigations, litigation and product liability claims. If Amgen fails to meet the compliance obligations in the corporate integrity agreement between Amgen and the U.S. government, Amgen could become subject to significant sanctions. Amgen depends on third parties for a significant portion of its manufacturing capacity for the supply of certain of its current and future products and limits on supply may constrain sales of certain of its current products and product candidate development.

In addition, sales of Amgen's products (including products of Amgen's 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 quideline 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 Amgen's products. In addition, Amgen competes with other companies with respect to some of its marketed products as well as for the discovery and development of new products. Amgen believes that some of its newer products, product candidates or new indications for existing products, may face competition when and as they are approved and marketed. Amgen's products may compete against products that have lower prices, established reimbursement, superior performance, are easier to administer, or that are otherwise competitive with its products. In addition, while Amgen and its partners routinely obtain patents for their products and technology, the protection of Amgen's products offered by patents and patent applications may be challenged, invalidated or circumvented by its competitors and there can be no guarantee of Amgen's or its partners' ability to obtain or maintain patent protection for Amgen's products or product candidates. Amgen cannot guarantee that it will be able to produce commercially successful products or maintain the commercial success of its existing products. Amgen's stock price may be affected by actual or perceived market opportunity, competitive position, and success or failure of its products or product candidates. Further, the discovery of significant problems with a product similar to one of Amgen's products that implicate an entire class of products could have a material adverse effect on sales of the affected products and on Amgen's business and results of operations. Amgen's efforts to integrate the operations of companies it has acquired may not be successful.

The scientific information discussed in this news release relating to new indications for Amgen's 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.

NEXAVAR® is a registered trademark of Bayer.

#### References:

- <sup>1</sup> El-Serag, Hashem, M.D., M.P.H. Current Concepts in Hepatocellular Carcinoma. *The New England Journal of Medicine*. 2011; 365: 1118-27.
- <sup>2</sup> Available at American Society of Clinical Oncology: <a href="http://www.asco.org/patient/Cancer+Types/Liver+Cancer">http://www.asco.org/patient/Cancer+Types/Liver+Cancer</a>.
- <sup>3</sup> Ferlay J, et al., GLOBOCAN 2012. Cancer Incidence, Mortality and Prevalence Worldwide in 2012. Available at: <a href="http://globocan.iarc.fr/Pages/fact\_sheets\_cancer.aspx">http://globocan.iarc.fr/Pages/fact\_sheets\_cancer.aspx</a> Accessed January 2014.





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SOURCE Bayer HealthCare Pharmaceuticals Inc. and Onyx Pharmaceuticals, Inc., an Amgen subsidiary

Media - Rose Talarico, Bayer HealthCare Pharmaceuticals Inc., (862) 404-5302, or Lindsay Treadway, Onyx Pharmaceuticals, Inc., (650) 266-5346; Investors - Arvind Sood, Amgen, 1-805-447-1060