

Biogen Idec and Isis Pharmaceuticals Announce Strategic Collaboration to Advance Treatment of Neurological Disorders

September 9, 2013

--Biogen Idec and Isis to leverage antisense technology to accelerate discovery and development of novel therapies-- --Isis to receive \$100M upfront with potential future milestone payments and license fees, plus royalties--

WESTON, Mass. and CARLSBAD, Calif., Sept. 9, 2013 /PRNewswire/ -- **Biogen Idec** (NASDAQ: BIIB) and **Isis Pharmaceuticals, Inc.** (NASDAQ: ISIS) today announced that the companies have entered into a broad, multi-year collaboration to leverage antisense technology to advance the treatment of neurological diseases. The agreement combines Biogen Idec's expertise in neurology with Isis' leadership in antisense technology to develop novel therapies to treat neurological disorders. This is the fourth collaboration between the two companies in the last two years.

(Logo: <http://photos.prnewswire.com/prnh/20130807/LA60006LOGO>)

"This strategic alliance with Isis builds on our existing relationship and combines the unique strengths of each partner to significantly advance the treatment of serious neurological diseases," said Douglas E. Williams, Ph.D., Biogen Idec's executive vice president of research and development. "Antisense is a validated technology that we believe will help build our pipeline of antisense, small molecule and biologics programs, strengthening our leadership in neurology."

Antisense technology is designed to alter a gene's function, silencing a mutation or activating a gene to compensate for an underlying genetic defect. When the genetic sequence of a gene is known to cause a disease, it is possible to synthesize a strand of nucleic acid (DNA, RNA or a chemical analogue) that binds to the messenger RNA (mRNA) produced by that gene and effectively turn that gene "on" or "off."

As part of the six-year research collaboration, Biogen Idec will gain exclusive rights to the use of Isis' antisense technology to develop therapies for neurological diseases. Terms of this collaboration include:

- Biogen Idec will make an upfront payment of \$100 million, a majority of which will be reflected as R&D expense in Biogen Idec's third quarter financial results.
- Isis is eligible to receive milestone payments, license fees and royalty payments for all treatments developed through this collaboration, with the specific amount dependent upon the modality of the molecule advanced by Biogen Idec. In the case of antisense molecules, the milestone payments could be as much as \$220 million, plus additional amounts related to the cost of clinical trials conducted by Isis under the collaboration.

Biogen Idec and Isis will work closely together to select and validate neurological disease targets and conduct drug discovery activities with the goal of identifying clinical development candidates. Isis will be primarily responsible for drug discovery and early development of antisense therapies, while Biogen Idec will be responsible for the creation and development of small molecule treatments and biologics. In each case, Biogen Idec will determine the molecular modality best suited for advancement through clinical development. Biogen Idec will also be responsible for later stage development and commercialization of all drugs arising from the collaboration.

"We are pleased that Biogen Idec, a world leader in neurological diseases, has selected antisense drug technology to fuel its neurology drug pipeline and are pleased to expand our already successful relationship. Biogen Idec's access to novel targets and contribution to research and development efforts should enable us to identify, validate and advance a number of promising new therapies. Combining our antisense drug discovery with Biogen Idec's expertise in severe neurological diseases has already significantly enhanced the development of our spinal muscular atrophy and myotonic dystrophy programs," said B. Lynne Parshall, chief operating officer at Isis Pharmaceuticals.

The collaboration announced today follows three previous collaborations between Biogen Idec and Isis. In the first half of 2012, Isis and Biogen Idec established collaborations to develop antisense drugs to treat spinal muscular atrophy and myotonic dystrophy type 1. Later that same year, Isis and Biogen Idec entered into a third collaboration to discover and develop antisense drugs against three novel targets for neurological disorders.

Isis Conference Call

At 11:30 a.m. Eastern Time Monday, Sept. 9, 2013, Isis will conduct a live webcast conference call to discuss its new strategic collaboration. Interested parties may listen to the call by dialing 866-652-5200, or access the webcast at www.isispharm.com. A webcast replay will be available for a limited time at the same address.

About Biogen Idec

Through cutting-edge science and medicine, Biogen Idec discovers, develops and delivers to patients worldwide innovative therapies for the treatment of neurodegenerative diseases, hemophilia and autoimmune disorders. Founded in 1978, Biogen Idec is the world's oldest independent biotechnology company. Patients worldwide benefit from its leading multiple sclerosis therapies, and the Company generates more than \$5 billion in annual revenues. For product labeling, press releases and additional information about the Company, please visit www.biogenidec.com.

About Isis Pharmaceuticals, Inc.

Isis is exploiting its leadership position in antisense technology to discover and develop novel drugs for its product pipeline and for its partners. Isis' broad pipeline consists of 30 drugs to treat a wide variety of diseases with an emphasis on cardiovascular, metabolic, severe and rare diseases, and cancer. Isis' partner, Genzyme, is commercializing Isis' lead product, KYNAMRO™, in the United States for the treatment of patients with HoFH. Genzyme is also pursuing marketing approval of KYNAMRO in other markets. Isis' patents provide strong and extensive protection for its drugs and technology. Additional information about Isis is available at www.isispharm.com.

Biogen Idec Safe Harbor Statement

This press release contains forward-looking statements, including statements about product development and commercialization. These forward-looking statements may be accompanied by such words as "anticipate," "believe," "estimate," "expect," "forecast," "intend," "may," "plan," "will" and other words and terms of similar meaning. You should not place undue reliance on these statements. Drug development and commercialization

involve a high degree of risk. Factors which could cause actual results to differ materially from current expectations include the risk that adverse safety events may occur, regulatory authorities may require additional information or further studies, or may fail to approve or may delay approval of any potential new therapy, product reimbursement may be limited or unavailable, there may be problems with manufacturing processes, intellectual property rights may not be adequately protected, or we may encounter other unexpected hurdles. For more detailed information on the risks and uncertainties associated with our drug development and commercialization activities, please review the Risk Factors section of our most recent annual or quarterly report filed with the Securities and Exchange Commission. These statements are based on current beliefs and expectations and speak only as of the date of this press release. We do not undertake any obligation to publicly update any forward-looking statements.

Isis Pharmaceuticals' Forward-Looking Statement

This press release includes forward-looking statements regarding Isis' strategic alliance with Biogen Idec, and Isis' research and development opportunities in disease areas including neurological and neuromuscular diseases. Any statement describing Isis' goals, expectations, financial or other projections, intentions or beliefs, including the commercial potential of KYNAMRO, is a forward-looking statement and should be considered an at-risk statement. Such statements are subject to certain risks and uncertainties, particularly those inherent in the process of discovering, developing and commercializing drugs that are safe and effective for use as human therapeutics, and in the endeavor of building a business around such drugs. Isis' forward-looking statements also involve assumptions that, if they never materialize or prove correct, could cause its results to differ materially from those expressed or implied by such forward-looking statements. Although Isis' forward-looking statements reflect the good faith judgment of its management, these statements are based only on facts and factors currently known by Isis. As a result, you are cautioned not to rely on these forward-looking statements. These and other risks concerning Isis' programs are described in additional detail in Isis' annual report on Form 10-K for the year ended December 31, 2012, and its most recent quarterly report on Form 10-Q, which are on file with the SEC. Copies of these and other documents are available from the Company.

Isis Pharmaceuticals® is a registered trademark of Isis Pharmaceuticals, Inc. Regulus Therapeutics™ is a trademark ofRegulus Therapeutics Inc. KYNAMRO™ is a trademark ofGenzyme Corporation.

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