

## **Gilead Announces Results From Studies Evaluating Sofosbuvir-Based Regimens in Chronic Hepatitis C Patients With Genotypes 2-5**

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### ***-- High Cure Rates Observed Across a Range of Genotypes --***

VIENNA, Austria--(BUSINESS WIRE)--Apr. 25, 2015-- Gilead Sciences, Inc. (Nasdaq: GILD) today announced results from two studies evaluating the safety and efficacy of investigational uses of sofosbuvir-based regimens in chronic hepatitis C virus (HCV)-infected patients with genotypes 2, 3, 4 and 5. Results from the BOSON study of Sovaldi<sup>®</sup> (sofosbuvir 400 mg) in combination with ribavirin (RBV) or with pegylated interferon (PEG)/RBV demonstrated high cure rates across all patients with genotypes 2 and 3. Separately, results from a Phase 2 study demonstrate the safety and efficacy of Harvoni<sup>®</sup> (ledipasvir 90 mg/sofosbuvir 400 mg) in patients with genotypes 4 or 5 infection. Data from both studies will be presented in oral sessions at the 50th Annual Meeting of the European Association for the Study of the Liver (The International Liver Congress<sup>™</sup> 2015) in Vienna, Austria.

Sovaldi and Harvoni are each approved in the United States for the treatment of chronic HCV infection. Sovaldi is used in combination with other agents and its efficacy has been established in patients with genotypes 1-4; Harvoni is indicated for patients with genotype 1.

BOSON (Study GS-US-334-0153, #LB05), a randomized Phase 3 study of 592 patients, evaluated the safety and efficacy of Sovaldi plus RBV for 16 or 24 weeks compared with Sovaldi plus PEG/RBV for 12 weeks among treatment-naïve or treatment-experienced genotype 3 patients with and without cirrhosis and treatment-experienced genotype 2 patients with cirrhosis. Thirty-seven percent of study participants had cirrhosis.

Among genotype 3 patients, rates of sustained virologic response 12 weeks after treatment (SVR12) were highest among those receiving Sovaldi plus PEG/RBV for 12 weeks (93 percent, n=168/181), compared to those receiving Sovaldi plus RBV for 24 weeks (84 percent, n=153/182) or for 16 weeks (71 percent, n=128/181). Treatment-experienced genotype 3 patients with cirrhosis receiving Sovaldi plus PEG/RBV demonstrated SVR12 rates of 86 percent (30/35).

Genotype 2 patients also demonstrated high SVR12 rates across all treatment arms. SVR12 rates among patients receiving Sovaldi plus PEG/RBV were 94 percent (15/16), and 100 percent (17/17) and 87 percent (13/15) for those receiving Sovaldi plus RBV for 24 and 16 weeks, respectively.

Sovaldi plus PEG/RBV and Sovaldi plus RBV were well tolerated. The most common adverse events in the study were fatigue, headache, insomnia and nausea. Overall, six patients (1 percent) discontinued treatment due to adverse events, one of whom was treated with Sovaldi plus PEG/RBV.

“It remains difficult to achieve a virological response in genotype 3, which is one of the most prevalent genotypes in the world, with higher prevalence in Europe and Asia,” said Graham R. Foster, FRCP, PhD, Professor of Hepatology, The Liver Unit, Queen Mary's University of London, Barts Health, London, United Kingdom. “These results are compelling because they represent the highest cure rates observed among treatment-experienced, cirrhotic genotype 3 patients in any Phase 3 clinical trial to date.”

In a separate open-label Phase 2 study of Harvoni conducted in France (Study GS-US-337-1119, O056), results demonstrated high SVR rates in both treatment-naïve and treatment-experienced patients with chronic HCV genotypes 4 or 5 infection, 50 percent of whom had cirrhosis.

Ninety-three percent of patients with genotype 4 (41/44) and 95 percent of patients with genotype 5 (39/41) achieved SVR12. Response rates were similar among both treatment-naïve and -experienced patients and regardless of cirrhosis.

The most common adverse events (affecting more than 10 percent of patients) were asthenia, headache and fatigue. Most

adverse events were mild or moderate in severity and none resulted in treatment discontinuation. There were no grade 3 or 4 clinical laboratory abnormalities.

“HCV genotype 4 and 5 are less prevalent than other genotypes and therefore, have traditionally not been closely studied,” said Armand Abergel, MD, PhD, Department of Hepatology and Gastroenterology, Centre Hospitalier Universitaire-Estaing, Université d’Auvergne, Clermont-Ferrand, France. “These data provide important evidence that the all-oral, ribavirin-free Harvoni regimen is both safe and effective for many patients with genotype 4 or 5, regardless of prior treatment experience.”

The safety and efficacy of these investigational uses of Harvoni and Sovaldi have not been established.

## **Important Safety Information About Sovaldi**

### **Contraindications**

Sovaldi combination treatment with ribavirin or with peginterferon alfa plus ribavirin is contraindicated in women who are pregnant or may become pregnant and men whose female partners are pregnant because of the risk for birth defects and fetal death associated with ribavirin. Contraindications to peginterferon alfa and ribavirin also apply to Sovaldi combination treatment. Refer to the prescribing information of peginterferon alfa and ribavirin for a list of their contraindications.

### **Warnings and Precautions**

**Serious Symptomatic Bradycardia When Coadministered with Amiodarone and Another HCV Direct Acting Antiviral (DAA):** Amiodarone is not recommended for use with Sovaldi in combination with another DAA due to the risk of symptomatic bradycardia, particularly in patients also taking beta blockers or with underlying cardiac comorbidities and/or with advanced liver disease. In patients without alternative, viable treatment options, cardiac monitoring is recommended. Patients should seek immediate medical evaluation if they develop signs or symptoms of bradycardia.

**Pregnancy:** Use with ribavirin or peginterferon alfa/ribavirin: Ribavirin therapy should not be started unless a report of a negative pregnancy test has been obtained immediately prior to initiation of therapy. Female patients of childbearing potential and their male partners must use two forms of non-hormonal contraception during treatment and for at least 6 months after treatment has concluded. Routine monthly pregnancy tests must be performed during this time. Refer to the prescribing information for ribavirin.

**Use with Potent P-gp Inducers:** Rifampin and St. John’s wort should not be used with Sovaldi as they may significantly decrease sofosbuvir plasma concentration, reducing its therapeutic effect.

### **Adverse Reactions**

Most common ( $\geq 20$  percent, all grades) adverse reactions for:

Sovaldi + peginterferon alfa + ribavirin combination therapy were fatigue, headache, nausea, insomnia, and anemia

Sovaldi + ribavirin combination therapy were fatigue, and headache

### **Drug Interactions**

In addition to rifampin and St. John’s wort, coadministration of Sovaldi is not recommended with carbamazepine, oxcarbazepine, phenobarbital, phenytoin, rifabutin, rifapentine, and tipranavir/ritonavir. Such coadministration is expected to decrease the concentration of sofosbuvir, reducing its therapeutic effect.

## **Important Safety Information About Harvoni**

## Warnings and Precautions

**Risk of Serious Symptomatic Bradycardia When Coadministered with Amiodarone:** Amiodarone is not recommended for use with Harvoni due to the risk of symptomatic bradycardia, particularly in patients also taking beta blockers or with underlying cardiac comorbidities and/or with advanced liver disease. In patients without alternative, viable treatment options, cardiac monitoring is recommended. Patients should seek immediate medical evaluation if they develop signs or symptoms of bradycardia.

**Risk of Reduced Therapeutic Effect of Harvoni Due to P-gp Inducers:** Rifampin and St. John's wort are not recommended for use with Harvoni as they may significantly decrease ledipasvir and sofosbuvir plasma concentrations.

**Related Products Not Recommended:** Harvoni is not recommended for use with other products containing sofosbuvir (Sovaldi).

## Adverse Reactions

Most common ( $\geq 10$  percent, all grades) adverse reactions were fatigue and headache.

## Drug Interactions

In addition to rifampin and St. John's wort, coadministration of Harvoni is also not recommended with carbamazepine, oxcarbazepine, phenobarbital, phenytoin, rifabutin, rifapentine, and tipranavir/ritonavir. Such coadministration is expected to decrease the concentration of ledipasvir and sofosbuvir, reducing the therapeutic effect of Harvoni.

Coadministration of Harvoni is not recommended with simeprevir due to increased concentrations of ledipasvir and simeprevir. Coadministration is also not recommended with rosuvastatin or co-formulated elvitegravir/cobicistat /emtricitabine/tenofovir disoproxil fumarate due to increased concentrations of rosuvastatin and tenofovir, respectively.

Consult the full Prescribing Information for Harvoni for more information on potentially significant drug interactions, including clinical comments.

## About Gilead

Gilead Sciences is a biopharmaceutical company that discovers, develops and commercializes innovative therapeutics in areas of unmet medical need. The company's mission is to advance the care of patients suffering from life-threatening diseases. Gilead has operations in more than 30 countries worldwide, with headquarters in Foster City, California.

## Forward-Looking Statement

This press release includes forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 that are subject to risks, uncertainties and other factors, including the risk that Gilead may observe unfavorable results from additional clinical trials involving Sovaldi and Harvoni for various patient populations, including those with genotype 2, 3, 4 and 5 HCV. These risks, uncertainties and other factors could cause actual results to differ materially from those referred to in the forward-looking statements. The reader is cautioned not to rely on these forward-looking statements. These and other risks are described in detail in Gilead's Annual Report on Form 10-K for the year ended December 31, 2014, as filed with the U.S. Securities and Exchange Commission. All forward-looking statements are based on information currently available to Gilead, and Gilead assumes no obligation to update any such forward-looking statements.

*U.S. full Prescribing Information for Sovaldi and Harvoni is available at [www.gilead.com](http://www.gilead.com).*

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*For more information on Gilead Sciences, please visit the company's website at [www.gilead.com](http://www.gilead.com), follow Gilead on Twitter*

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