



NEWS RELEASE

## Merck Presents First Phase 3 Data in Japanese Patients for Omarigliptin, an Investigational Once-Weekly DPP-4 Inhibitor for Type 2 Diabetes

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Omarigliptin significantly reduced HbA1c levels compared to placebo

Merck (NYSE:MRK), known as MSD outside the United States and Canada, today announced the presentation of the first data from the Phase 3 clinical development program for omarigliptin, Merck's investigational once-weekly DPP-4 inhibitor for the treatment of type 2 diabetes. In a study in Japanese patients, omarigliptin provided comparable efficacy and tolerability to Merck's once-daily DPP-4 inhibitor JANUVIA® (sitagliptin) 50 mg, which is the standard starting dose for sitagliptin in Japan. Merck presented these data on omarigliptin, which has been shown to produce sustained DPP-4 inhibition, at an oral session at the 50th European Association for the Study of Diabetes (EASD) Annual Meeting.

"Despite advances in diabetes care in recent years, many people living with type 2 diabetes are not at recommended blood sugar goals," said Peter Stein, M.D., vice president, Clinical Research, Diabetes and Endocrinology, Merck Research Laboratories. "Merck is committed to helping patients reduce the complexities of managing diabetes. If approved, omarigliptin, as a once-weekly medication, could provide an important new treatment option to help patients attain their blood sugar goals."

Merck is supporting omarigliptin with a global clinical development program that includes 10 Phase 3 clinical trials involving approximately 8,000 patients with type 2 diabetes. These are the first Phase 3 data presented for omarigliptin and are the pivotal data for filing in Japan. As previously announced, Merck plans to file for approval in Japan by the end of 2014.

## About the study

The Phase 3 double-blind, non-inferiority trial assessed the efficacy, safety and tolerability of omarigliptin 25 mg once-weekly compared to sitagliptin 50 mg once-daily (standard starting dose in Japan), and to placebo. The primary efficacy endpoint was the change in HbA1c levels from baseline at week 24.

At baseline, randomized patients (n=414) had a mean HbA1c concentration of 7.9, 8.0 and 8.1 percent in the omarigliptin, sitagliptin and placebo groups, respectively. Mean fasting plasma glucose (FPG) levels were also similar between treatment groups.

The primary objectives of the study were met, demonstrating at 24 weeks a significant change from baseline in lowering HbA1c levels versus placebo, while demonstrating similar efficacy to sitagliptin.

At week 24, omarigliptin significantly reduced HbA1c levels by -0.80 percent from baseline relative to placebo. The change relative to sitagliptin was -0.02 percent and met the prespecified non-inferiority criterion. The pre-specified criterion was based on the upper bound of the 95 percent confidence interval (CI) being less than 0.3 percent. Fasting and two-hour post-meal blood sugar levels also were significantly reduced from baseline with omarigliptin and sitagliptin compared to placebo.

There were no meaningful differences in the incidences of adverse events with omarigliptin compared to placebo and sitagliptin. The most common adverse event that occurred with an incidence of greater than 3 percent in the omarigliptin group was nasopharyngitis, which occurred in 12.7 percent of those treated, compared to 30.5 percent of patients receiving placebo and 11.0 percent of those receiving sitagliptin. Symptomatic hypoglycemia was uncommon across all treatment groups in this study [omarigliptin (0), sitagliptin (1), and placebo (0)]. Omarigliptin was generally weight neutral, with a 0.04 kg mean change from baseline at week 24.

## About JANUVIA® (sitagliptin)

JANUVIA is indicated, as an adjunct to diet and exercise, to improve glycemic control in adults with type 2 diabetes mellitus. JANUVIA should not be used in patients with type 1 diabetes or for the treatment of diabetic ketoacidosis. JANUVIA has not been studied in patients with a history of pancreatitis. It is unknown whether patients with a history of pancreatitis are at increased risk of developing pancreatitis while taking JANUVIA. JANUVIA is contraindicated in patients with a history of a serious hypersensitivity reaction to sitagliptin, such as anaphylaxis or angioedema.

**Selected important risk information about JANUVIA (sitagliptin) 25 mg, 50 mg and 100 mg**

## tablets

There have been postmarketing reports of acute pancreatitis, including fatal and nonfatal hemorrhagic or necrotizing pancreatitis, in patients taking JANUVIA. After initiating JANUVIA, observe patients carefully for signs and symptoms of pancreatitis. If pancreatitis is suspected, promptly discontinue JANUVIA and initiate appropriate management. It is unknown whether patients with a history of pancreatitis are at increased risk of developing pancreatitis while taking JANUVIA.

Assessment of renal function is recommended prior to initiating JANUVIA and periodically thereafter. A dosage adjustment is recommended in patients with moderate or severe renal insufficiency and in patients with end-stage renal disease requiring hemodialysis or peritoneal dialysis. Caution should be used to ensure that the correct dose of JANUVIA is prescribed.

There have been postmarketing reports of worsening renal function, including acute renal failure, sometimes requiring dialysis. A subset of these reports involved patients with renal insufficiency, some of whom were prescribed inappropriate doses of sitagliptin.

When JANUVIA was used in combination with a sulfonylurea or insulin, medications known to cause hypoglycemia, the incidence of hypoglycemia was increased over that of placebo. Therefore, a lower dose of sulfonylurea or insulin may be required to reduce the risk of hypoglycemia.

The incidences (and rates) of hypoglycemia based on all reports of symptomatic hypoglycemia were: 12.2 percent (0.59 episodes per patient-year) for JANUVIA 100 mg in combination with glimepiride (with or without metformin), 1.8 percent (0.24 episodes per patient-year) for placebo in combination with glimepiride (with or without metformin), 15.5 percent (1.06 episodes per patient-year) for JANUVIA (sitagliptin) 100 mg in combination with insulin (with or without metformin), and 7.8 percent (0.51 episodes per patient-year) for placebo in combination with insulin (with or without metformin).

There have been postmarketing reports of serious hypersensitivity reactions in patients treated with JANUVIA, such as anaphylaxis, angioedema and exfoliative skin conditions including Stevens-Johnson syndrome. Onset of these reactions occurred within the first 3 months after initiation of treatment with JANUVIA, with some reports occurring after the first dose. If a hypersensitivity reaction is suspected, discontinue JANUVIA, assess for other potential causes for the event, and institute alternative treatment for diabetes.

Angioedema has also been reported with other dipeptidyl peptidase-4 (DPP-4) inhibitors. Use caution in a patient with a history of angioedema with another DPP-4 inhibitor because it is unknown whether such patients will be predisposed to angioedema with JANUVIA.

There have been no clinical studies establishing conclusive evidence of macrovascular risk reduction with JANUVIA or with any other antidiabetic drug.

In clinical studies, the adverse reactions reported, regardless of investigator assessment of causality, in greater than or equal to 5 percent of patients treated with JANUVIA as monotherapy and in combination therapy, and more commonly than in patients treated with placebo, were upper respiratory tract infection, nasopharyngitis and headache.

## About Merck

Today's Merck is a global healthcare leader working to help the world be well. Merck is known as MSD outside the United States and Canada. Through our prescription medicines, vaccines, biologic therapies, and consumer care and animal health products, we work with customers and operate in more than 140 countries to deliver innovative health solutions. We also demonstrate our commitment to increasing access to healthcare through far-reaching policies, programs and partnerships. For more information, visit [www.merck.com](http://www.merck.com) and connect with us on **Twitter**, **Facebook** and **YouTube**.

## Merck's Commitment to Diabetes

Through our research initiatives, on our own and in collaboration with others, Merck is strengthening its leadership in diabetes to deliver a broad portfolio of solutions to help improve the management of diabetes.

## Merck Forward-Looking Statement

This news release includes "forward-looking statements" within the meaning of the safe harbor provisions of the United States Private Securities Litigation Reform Act of 1995. These statements are based upon the current beliefs and expectations of Merck's management and are subject to significant risks and uncertainties. There can be no guarantees with respect to pipeline products that the products will receive the necessary regulatory approvals or that they will prove to be commercially successful. If underlying assumptions prove inaccurate or risks or uncertainties materialize, actual results may differ materially from those set forth in the forward-looking statements.

Risks and uncertainties include but are not limited to, general industry conditions and competition; general economic factors, including interest rate and currency exchange rate fluctuations; the impact of pharmaceutical industry regulation and health care legislation in the United States and internationally; global trends toward health care cost containment; technological advances, new products and patents attained by competitors; challenges

inherent in new product development, including obtaining regulatory approval; Merck's ability to accurately predict future market conditions; manufacturing difficulties or delays; financial instability of international economies and sovereign risk; dependence on the effectiveness of Merck's patents and other protections for innovative products; and the exposure to litigation, including patent litigation, and/or regulatory actions.

Merck undertakes no obligation to publicly update any forward-looking statement, whether as a result of new information, future events or otherwise. Additional factors that could cause results to differ materially from those described in the forward-looking statements can be found in Merck's 2013 Annual Report on Form 10-K and the company's other filings with the Securities and Exchange Commission (SEC) available at the SEC's Internet site ([www.sec.gov](http://www.sec.gov)).

Please see Prescribing Information for JANUVIA (sitagliptin) at [http://www.merck.com/product/usa/pi\\_circulars/j/januvia/januvia\\_pi.pdf](http://www.merck.com/product/usa/pi_circulars/j/januvia/januvia_pi.pdf) and Medication Guide for JANUVIA at [http://www.merck.com/product/usa/pi\\_circulars/j/januvia/januvia\\_mg.pdf](http://www.merck.com/product/usa/pi_circulars/j/januvia/januvia_mg.pdf).

JANUVIA® is a registered trademark of Merck Sharp & Dohme Corp., a subsidiary of Merck & Co., Inc.

<sup>1</sup> HbA1c is an estimate of a person's average blood glucose over a two- to three-month period.

Merck

Media:

Pam Eisele, +1 (267) 305-3558

Michael Close, +1 (267) 305-1221 or +1 (310) 617-1067

or

Investors:

Justin Holko, +1 (908) 423-5088