Galvus® (vildagliptin) Is the First-In-Class ‘Islet Enhancer’ for the Treatment of T2DM1

- First-in-class islet enhancer, increases activity of GLP-12 and GIP3
- Strong Phase III results in monotherapy and combinations
- Potential for disease modification based on beta-cell effects
- Prevalence of type 2 diabetes projected to double from 150 to 370 m within 25 years

1 T2DM = Type 2 diabetes mellitus
2 Glucagon-like peptide \((I-7-36)\) amide
3 Glucose-dependent insulinotropic polypeptide
4 Dipeptidyl-peptidase 4

Previously disclosed study data showed

- Excellent, dose-proportional reduction in HbA1c
- Clinically significant and sustained reductions of HbA1c of ~1% and of up to 1.6% in patients with more severe type 2 diabetes
- Improved glycemic control and reduced incidence and severity of hypoglycemia when added to insulin
- Primary endpoint of non-inferiority against metformin not met, but GI tolerability profile improved compared to metformin

New studies met all primary endpoints

- 100 mg once-a-day equivalent to 50 mg twice-a-day
- Primary endpoint of non-inferiority to rosiglitazone met, no weight gain
- Further improvements in glycemic control, no weight gain, and safe and well tolerated when added to glimepiride (sulfonylurea)
- Clinically significant reductions in HbA1c of ~1.1% and durable glycemic control when added to metformin
**Galvus® (vildagliptin) is Effective as Once-A-Day Treatment**

Change in HbA1c (%)

Mean HbA1c reduction from baseline at 24 weeks (7.5%–11%)

- Galvus® 50 mg qd (n=104)
- Galvus® 100 mg qd (n=92)
- Placebo (n=94)

*P=0.006; †P=0.001 vs. placebo

Source: Study 2301
Primary ITT (intent-to-treat) population

Galvus® (vildagliptin) Met Primary Endpoint of Non-Inferiority vs. rosiglitazone

Change in HbA1c (%) at 24 weeks

Mean HbA1c baseline = 10%

- Galvus® 50 mg bid (n=166)
- Rosiglitazone 8 mg qd (n=88)

-1.86 -1.82 -1.8

Galvus® is as effective as rosiglitazone, even in severe diabetes

Source: Study 2327
Primary ITT (intent-to-treat) severe diabetes (HbA1c > 9%) population subset; drug naïve; treatment duration: 24 weeks
**Galvus® (vildagliptin) Is a Strong Add-on Treatment to glimepiride**

Mean HbA1c (%)

- glimepiride 4 mg qd (n=132)
- glimepiride 50 mg qd & Galvus® (n=132)
- glimepiride 50 mg bid & Galvus® (n=132)
- glimepiride placebo (n=144)

Source: Study 2305

Primary ITT (intent to treat) population; drug-naive; HbA1c 7.5%–11%

* P<0.001 difference vs. glimepiride placebo

**Phase III Confirms that Galvus® (vildagliptin) Is a Powerful Add-on Treatment to metformin**

Mean HbA1c (%)

- metformin > 1500 mg TDD
- metformin 50 mg qd & Galvus® (n=143)
- metformin 50 mg bid & Galvus® (n=143)
- metformin placebo (n=130)

Source: Study 2303

Primary ITT (intent to treat) population; HbA1c 7.5%–11%

* P<0.001 difference vs. metformin placebo

11 Fresco 2005 / James Shannon / 2006-01-19 / Analyst

Novartis
Galvus® (vildagliptin) Shows Good Cardiovascular Safety Profile

- **Overall cardiac adverse events**
  - Incidence 2.4%, lower than metformin and similar to placebo
- **Hypertension**
  - Adverse events reports for hypertension low (3.4%), lower than for metformin and similar to placebo
  - No propensity in subgroups with hypertension or known CAD\(^1\)
- **Arrhythmias / Conduction abnormalities**
  - Incidence of ECG\(^2\) abnormalities (9.6%) and conduction abnormalities (5.0%), lower than metformin and similar to placebo

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**Galvus® (vildagliptin) – New Data Achieves All Efficacy and Safety Goals**

- **New trial data confirms attractive profile of Galvus®**
  - Highly effective treatment of T2DM\(^1\) in mono- and combination therapy
  - Once-a-day therapy, can be dosed twice-a-day
  - Effective out to one year
  - Neutral on body weight
  - No edema, low rate of hypoglycemia
  - Great potential as ‘first drug of choice’ for combination treatment
- **Extensive data for Galvus® will be released at ADA\(^2\) (Washington, June 2006, Investor Event planned)**
- **US filing on track for Q1 2006, EU filing planned for Q4 2006**

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1. Coronary artery disease
2. Electrocardiogram
1. Type 2 diabetes mellitus
2. American Diabetes Association