Development Pipeline &
Acceleration of Global Development

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FY2007 Business Results Briefing
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Content

1. Development Pipeline Status
2. Priority Development Projects
3. Promotion of EU, US and Asian Development
4. Development Projects –Topics-
1. Development Pipeline Status

**Domestic**

<table>
<thead>
<tr>
<th>Cardiovascular Metabolism</th>
<th>Psychiatry Neurology</th>
<th>Immunology/Respiratory</th>
<th>Hepatic disease Cancer</th>
<th>Others</th>
</tr>
</thead>
</table>

**Phase 1**

- **TA-7284** (Diabetes Mellitus)
- **TA-6666** (Type 2 Diabetes Mellitus)
- Cholebine (Hyperphosphatemia)
- **MP-214** (Schizophrenia)
- **CNT0148** (Rheumatoid Arthritis)
- **MP-435** (Rheumatoid Arthritis)

**Phase 2**

- **MP-424** (Chronic Hepatitis C)
- **Cholebine** (Type 2 Diabetes Mellitus)
- **MP-513** (Type 2 Diabetes Mellitus)
- **CNTO148** (Rheumatoid Arthritis)
- **TA-8317** (Breakthrough Cancer Pain)
- **TA-7280** (Multiple Sclerosis)

**Phase 3**

- **Maintate** (Chronic Heart Failure)
- **Anplag** (Cerebral Infarction)
- **Radicut** (ALS)
- **Modiodal** (OSAS)
- **Remicade** (Ulcerative Colitis)
- **Remicade** (Ankylosing Spondylitis)
- **Remicade** (Rheumatoid Arthritis, dose escalation)
- **Remicade** (Psoriasis)
- IV Hebsbulin - IH (Preventing Post liver Transplant HBV reinfection)
- Remicade (Crohn’s Disease/maintenance)
- Remicade (Toxemia of Pregnancy)
- Remicade (Heparin Induced Thrombocytopenia)
- VG-IH (Hypo-, Agammaglobulinemia, regimen change)
- VG-IH (ImmunglobulinG2 deficiency)
- Novastan (HIT- Heparin Induced Thrombocytopenia)
- VG-IH (Polymyositis, Dermatomyositis)
- Neuart (Toxemia of Pregnancy)

**Approved**

- **IV Hebsbulin - IH** (Preventing Post liver Transplant HBV reinfection)
- Remicade (Crohn’s Disease/maintenance)
- Neuart (Toxemia of Pregnancy)
1. Development Pipeline Status

**[Overseas]** In-house development, licensed products

- **Cardiovascular Metabolism**
  - TA-8995 (Hyperlipidemia)
  - MCC-135 (Myocardial Infarction)
  - Argatroban (EU) (PCI in HIT)
  - Argatroban* (HIT) (EU)
- **Psychiatry Neurology**
  - MCI-186 (Acute Cerebral Infarction)
  - MP-513 (Type 2 Diabetes Mellitus)
  - TA-5493 (Rheumatoid Arthritis, Psoriasis)
  - MCI-196 (Hyperphosphatemia)
  - MP-146 (Chronic Kidney Disease)
- **Immunology/Respiratory**
  - TA-5493 (Rheumatoid Arthritis, Psoriasis)
  - MCC-257 (Diabetic Neuropathy)
  - MCC-135 (Myocardial Infarction)
  - Argatroban (EU) (PCI in HIT)
- **Hepatic disease**
  - TA-5493 (Rheumatoid Arthritis, Psoriasis)
  - GB-1057 (Stabilizing Agent)
  - TA-5538 (Overactive Bladder)
  - MP-513 (Type 2 Diabetes Mellitus)
- **Cancer**
  - TA-5493 (Rheumatoid Arthritis, Psoriasis)
  - TA-1866 (Type 2 Diabetes Mellitus)
  - TA-5538 (Overactive Bladder)
  - TA-6666 (Type 2 Diabetes Mellitus)
- **Others**
  - TA-1866 (Type 2 Diabetes Mellitus)
  - TA-1709 (US) (Erectile Dysfunction)
  - TA-1709 (Korea) (Erectile Dysfunction)
  - Removed: Novastan (Cerebral thrombosis in China from filed)

**Overseas (in-house development products)**

- **Phase 1**
  - TA-7284 (Diabetes Mellitus)
  - T-0047 (Multiple Sclerosis)
- **Phase 2**
  - TA-7284 (Diabetes Mellitus)
  - T-0047 (Multiple Sclerosis)
- **Phase 3**
  - FTY720 (Multiple Sclerosis)
- **Filed**

**In preparation to file**

* In preparation to file
2. Priority Development Projects

Medium-Term Management Plan

- **U.S. and Europe**
  - MI-196 (Hyperphosphatemia)
  - MP-146 (Chronic kidney disease)
  - Targeting NDA by fiscal 2010
  - Steady progress in phase III

- **Domestic**
  - MP-424 (Chronic hepatitis C)
  - MP-513 (Type 2 diabetes)
  - TA-7284 (Diabetes)
  - Steady progress
  - Alliances anticipated in U.S. and Europe
  - Licensed out U.S. and Europe

- **LCM**
  - Remicade
  - RA/-Change in usages/ dosages
  - Psoriasis
  - Ankylosing Spondylitis
  - Ulcerative Colitis
  - Radicut
  - ALS

Approval

Timeline:
- 2008
- 2009
- 2010

2015
2. Priority Development Projects

**MCI-196, MP-146**

**MCI-196 Hyperphosphatemia**

- **Stage:** Phase 3
- **Mode of action:** phosphate adsorption and excretion

**Dialysis Patients**

- Impaired P excretion
- P adsorption
- Excess P accumulation in organ
- Fecal excretion
- Ectopic calcification causing HPT, AS etc.

**MP-146 Chronic kidney disease**

- **Stage:** Phase 3
- **Mode of action:** Oral adsorption hydrocarbon, absorbs and excretes GI uremic toxins

**Change of serum P levels with MCI-196**

- **Overseas Ph 2 Study Results**
  - Administration period (wk)
  - **Plasma P levels (mg/dL)**
  - Placebo
  - 3g / day
  - 6g / day
  - 9g / day
2. Priority Development Projects

**MP-424**

HCV protease inhibitor

**[Target efficacy & Features]**

Improvement of viremia

(reduction in treatment period and outstanding treatment efficacy)

**[Phase]**

Phase 2 in progress

**[On development implementation]**

- Expedite applications
- Application of overseas data

**US Study Results (VX05-950-102 study)**

Viral dynamics in chronic hepatitis C patients on VX-950 (MP-424), PEG-IFN & ribavirin three-drug combination therapy
2. Priority Development Projects

**MP-424 Overseas Study Interim Analysis Results**

**Indication**

Patients with chronic hepatitis C  
(Genotype 1, Treatment naive)

TVR: Telaprevir  
PEG: Pegylated-interferon alfa-2a, RBV: Ribavirin  
SVR24: undetectable HCV RNA <10 IU/L at 24wk post-treatment

**SVR24 35% (6/17)**  
SVR24 61% (48/79)  
SVR12 66%*  
SVR12 37%*

* Jan 23, 2008  
Vertex Press Release

I.M. Jacobson et al/ AASLD 2007 (#177)
2. Priority Development Projects

**MP-513, TA-7284**

### Mode of action for Antidiabetic

- **α-Glucosidase inhibitors**
- **Bile Acid**
- **Biguanides**
- **SGLT2 inhibitors** TA-7284

**Liver**

- **Cholebines**

**Small intestines**

- **Glucose Absorption**
- **GLP-1 secretion**
- **GLP-1 cleavage by DPP4**
- **GLP-1 Incretin effect**

**Muscle/Adipose cells**

- **Hyperglycemia**
- **Vessel**
- **Impaired Insulin secretion**
- **Increased glucose production**
- **Decreased glucose uptake**

**DPP4 inhibitor MP-513**

- **Urinary glucose excretion**
- **Thiazolidinediones (TZD)**
- **Sulfonylureas**

**Pancreas**

- **Impaired Insulin secretion**
- **Increased glucose production**
### 2. Priority Development Projects

**MP-513, TA-7284 & Approach Towards Diabetes**

<table>
<thead>
<tr>
<th></th>
<th>P 1</th>
<th>P 2</th>
<th>Concept</th>
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<tbody>
<tr>
<td><strong>MP-513</strong></td>
<td></td>
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<td>Long acting, high safety. Best-in-class.</td>
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<tr>
<td></td>
<td>US/EU</td>
<td>Domestic</td>
<td></td>
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<tr>
<td><strong>TA-7284</strong></td>
<td>Domestic</td>
<td></td>
<td>Long acting, high safety. First-in-class. Accelerate development by licensee in EU/US.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>US*/EU</td>
<td></td>
</tr>
<tr>
<td><strong>Cholebine</strong></td>
<td></td>
<td>Domestic</td>
<td>Control of blood sugar and lipids. High safety.</td>
</tr>
</tbody>
</table>

* Licensed out to JNJ
2. Priority Development Projects

LCM Strategy  Remicade

- Crohn’s disease (induction of remission) Approved
- Rheumatoid Arthritis Approved
- Behcet’s disease Approved
- Psoriasis Filed
- Ulcerative Colitis P 3
- Ankylosing Spondylitis P 3
- Crohn’s Disease/Maintenance Approved
- Towards successive approval till 2010:
  - 2007
  - 2008
  - 2009
  - 2010
2. Priority Development Projects
Remicade Psoriasis (Overseas Study Results)

Phase 3: Randomized placebo-controlled

75% improvement in PASI at 10 weeks

Placebo
n=77

infliximab
5 mg/kg
n=301

80*

* p<0.001 vs. placebo

PASI (Psoriasis area and severity index)
3. Promotion of EU/US & Asian Development

- Set 2010 as the prospective goal for new disease areas following the renal field.
- Adopt an optimal strategy for EU/US development expansion based on success rate and sales potential of a carefully selected development product. Also adopt an optimal approach from in-house development, licensing or co-development.
3. Promotion of EU/US & Asian Development

Asia

Improvement of RD Productivity

1. Acceleration of application & marketing approval in Japan

2. Procurement of marketing approval in Asia

3. Improvement of MNCT infrastructure

Improvement of Asian development infrastructure and execution
4. Development Projects

TA-8995

Mode of Action: Inhibition of the cholesterol ester transfer protein (CETP)
Proposed indication: Hyperlipidemia

The bad cholesterol atherosclerotic inducers LDL-C & VLDL-C are reduced while the anti-atherosclerotic HDL-C (good cholesterol) is increased by CETP inhibition.
4. Development Projects

Multiple Sclerosis: FTY720, T-0047

The world’s first sphingosine mono-phosphate receptor regulator (Co-development with Novartis: Phase 2 in Japan, Phase 3 overseas)

Most advanced oral α4 integrin antagonist (licensed to GSK, in Phase 2)

FTY720

Lymph-homing into secondary lymphoid tissues

Lymphocyte egress from secondary lymphoid tissues

Myelin attack by circulating lymphocytes

Multiple sclerosis

Lymphocyte invasion into CNS suppression

Myelin

Spleen

Lymphoduct

Thoracic duct

Thymus

Blood stream

High endothelial venulae

Thymocyte egress from thymus

Lymphocytes egress from secondary lymphoid tissues

suppression

suppression

→ Multiple sclerosis
Cautionary Statement

The statements contained in this presentation is based on a number of assumptions and belief in light of the information currently available to management of the company and is subject to significant risks and uncertainties.