

#### Key Milestones Achieved in FY2007

- Achievement of milestones for major projects
- Prasugrel (CS-747, anti-platelet agent)
  - Nov-07 AHA, Proved superiority over current benchmark treatments
  - Dec-07 FDA filing for 1<sup>st</sup> indication (ACS-PCI) Brand Name : Effient™
  - Feb-08 NDA filing in Europe
  - 2Q-08 Trials to be started for 2<sup>nd</sup> indication (ACS-Medical Management)
- CS-8663 (anti-hypertensive Amlodipine/Olmesartan combination)
  - Sep-07 FDA approved, Brand Name : AZOR®
    - ⇒ Launched in October
  - Sep-07 NDA filed in Europe (28 countries), Brand Name : Sevikar™
    - ⇒ Approvals gradually expected from autumn 2008



#### Key Milestones Achieved in FY2007

- Rivoglitazone (CS-011, anti-diabetes agent)
  - May-07 First Phase 3 trial launched
  - Aug-07 FDA removed clinical hold regarding of carcinogenicity
  - Dec-07 Second Phase 3 trial launched
- Strategic investment for pipeline expansion
- > Denosumab (AMG 162, anti-RANKL antibody)
  - Jul-07 In-licensed from Amgen
  - Phase 3 : bone metastases of cancer
  - Phase 3 in preparation: osteoporosis



### Prioritized Projects (as of Feb-08)

The following post-Phase 2 projects are highly prioritized.

Project	Class
Prasugrel (CS-747)	Anti-platelet
DU-176b	Blood coagulation factor Xa inhibitor
CS-8635	AZOR & HCT Triple Combo, Olme LCM
Rivoglitazone (CS-011)	Anti-diabetes, PPAR-gamma agonist
Denosumab (AMG 162)	Anti-RANKL antibody





## Prasugrel (CS-747)





#### **Current Status**

- > US submission was made on December 26, 2007
  - October 26, 2008 PDUFA goal date for standard review
  - If approved, trade name is Effient<sup>™</sup> in the US
- > EU submission was made on February 8, 2008

Post-hoc analysis about TRITON study will be presented at ACC late March, 2008





#### **Study Design**

#### ACS (STEMI or UA/NSTEMI) & Planned PCI

CLOPIDOGREL
300 mg LD/ 75 mg MD

PRASUGREL
60 mg LD/ 10 mg MD

**Median duration of therapy - 12 months** 

1° endpoint: CV death, MI, Stroke

2° endpoints: CV death, MI, Stroke, Rehosp-Rec Isch

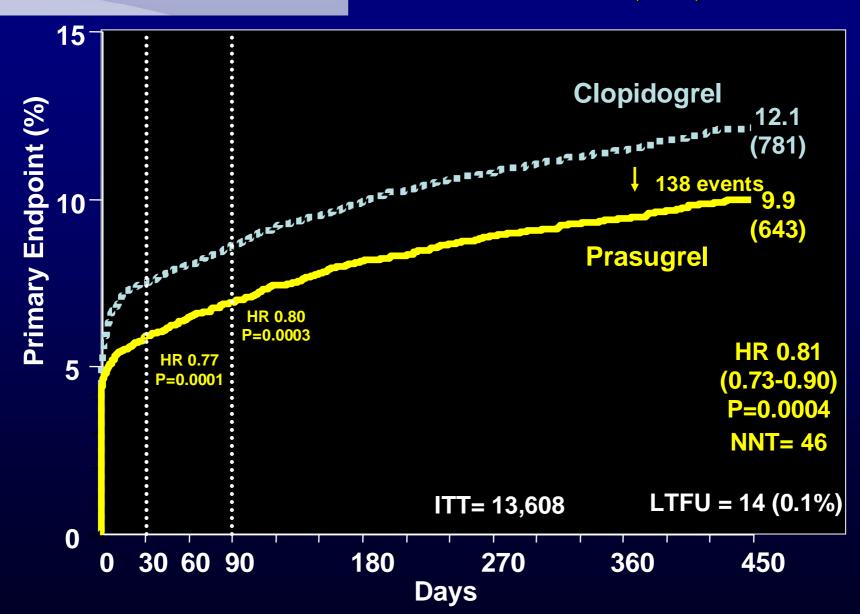
CV death, MI, UTVR

**Stent Thrombosis** 

**Key Substudies: Pharmacokinetic, Genomic** 

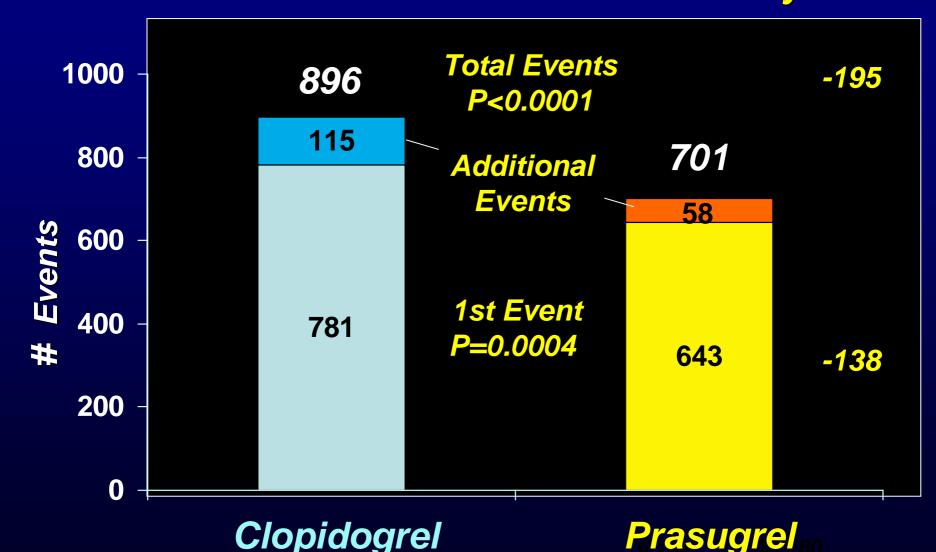


# Primary Endpoint CV Death, MI, Stroke





#### 10 Endpoint Events **Prevented** Post-hoc Analysis

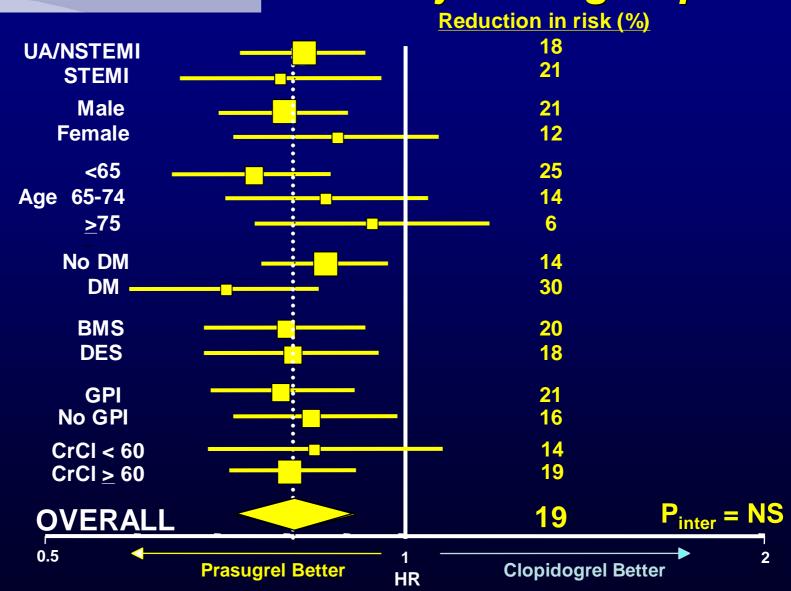


ITT N = 13,608

**Prasugrel** 

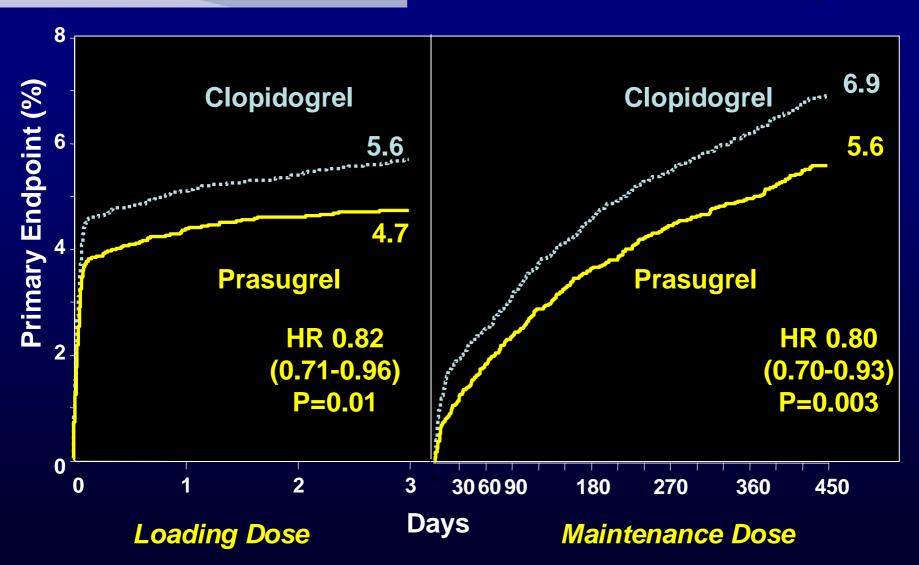


# CV Death, MI, Stroke Major Subgroups



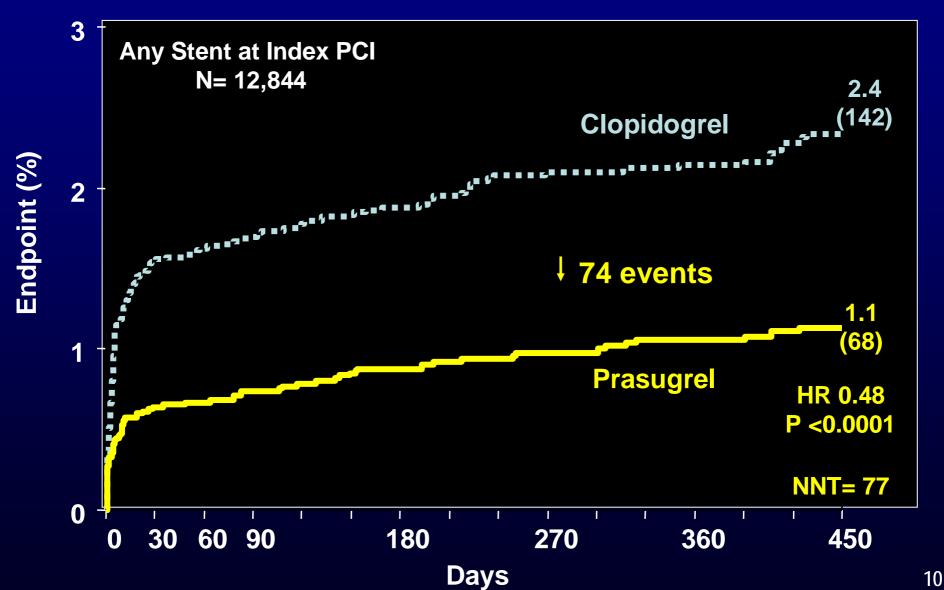


# Timing of Benefit (Landmark Analysis)



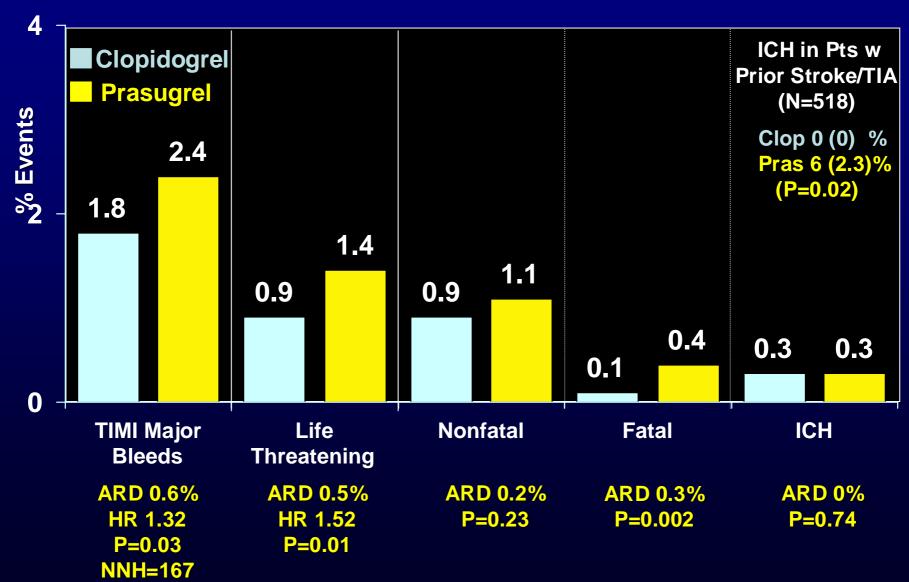


#### **Stent Thrombosis** (ARC Definite + Probable)



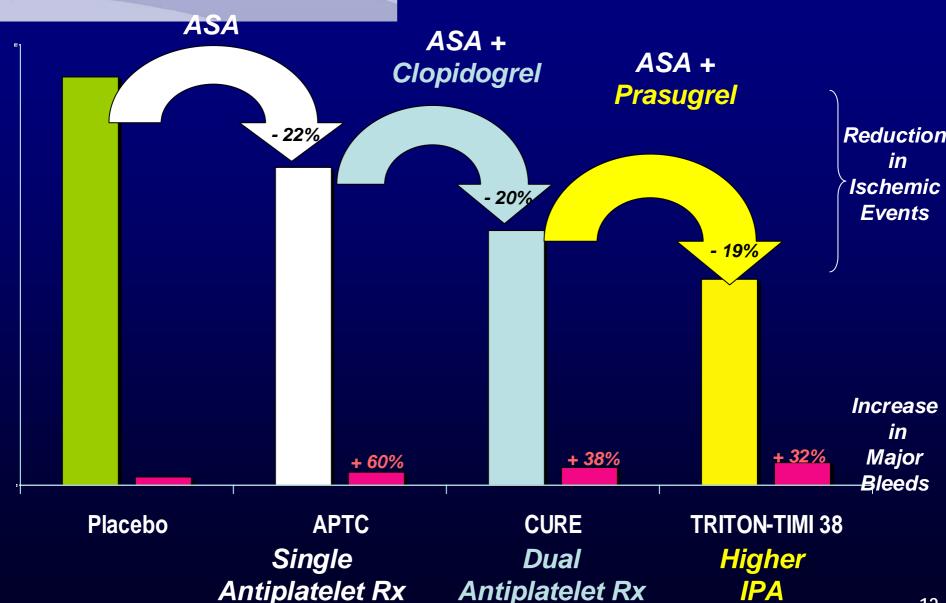


# Bleeding Events (N=13,457)



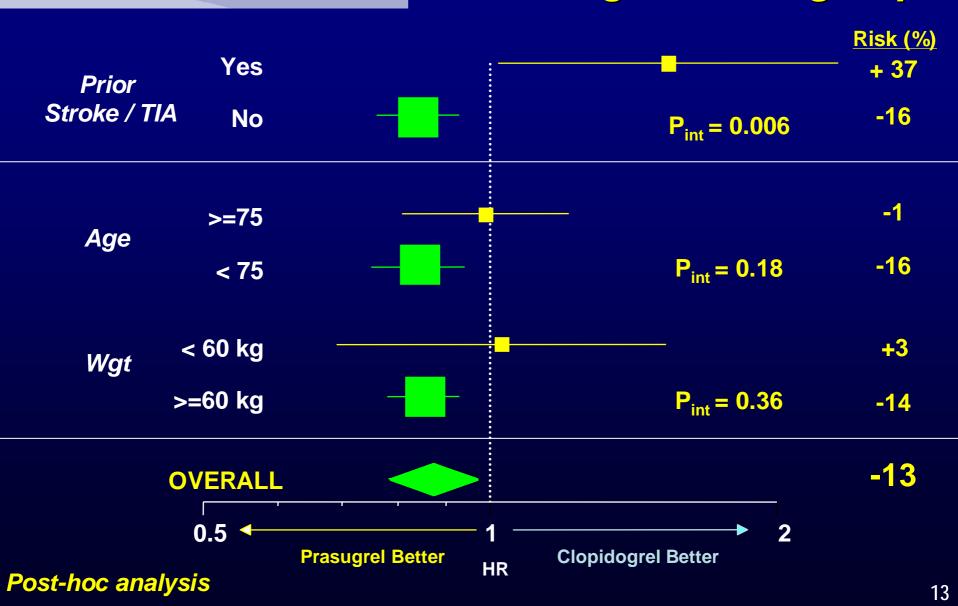
### TRÎTON TIMI-38

# **Antiplatelet Therapy in ACS**



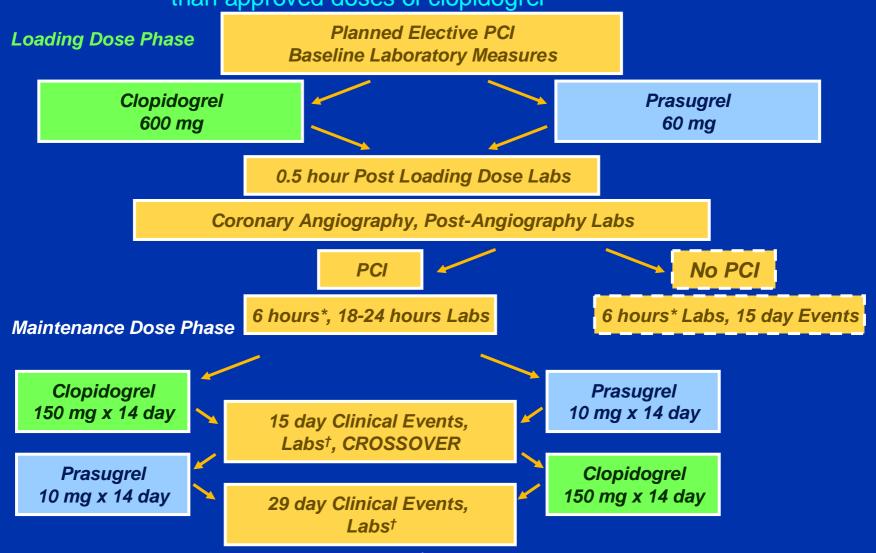


# Net Clinical Benefit Bleeding Risk Subgroups



#### PRINCIPLE TIMI-44: Study Design

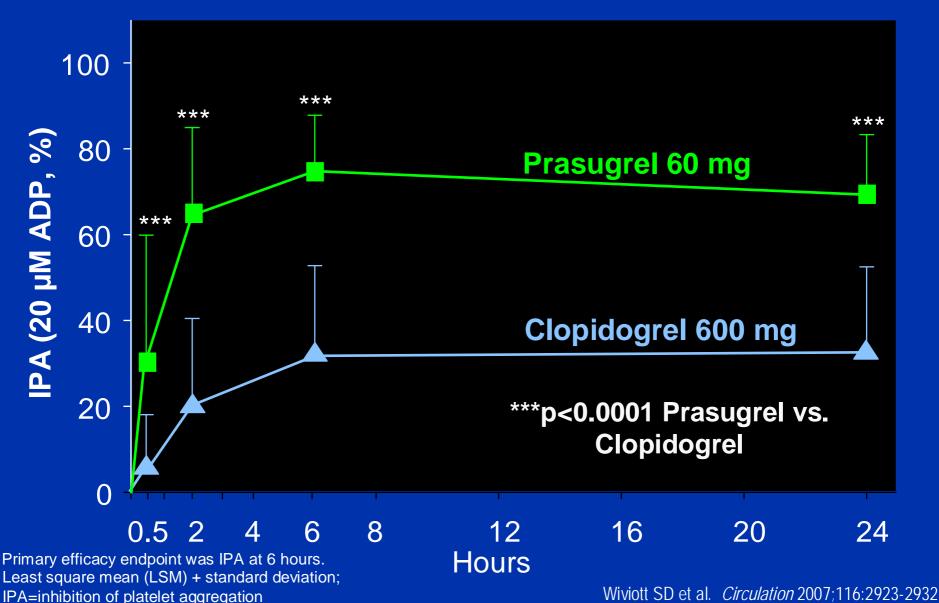
Study Objective: compare the pharmacodynamic response of prasugrel to higher than approved doses of clopidogrel



1º EPs: \*Loading = 6h IPA (20  $\mu$ M ADP); †Maintenance = 15d or 29d IPA (20  $\mu$ M ADP)

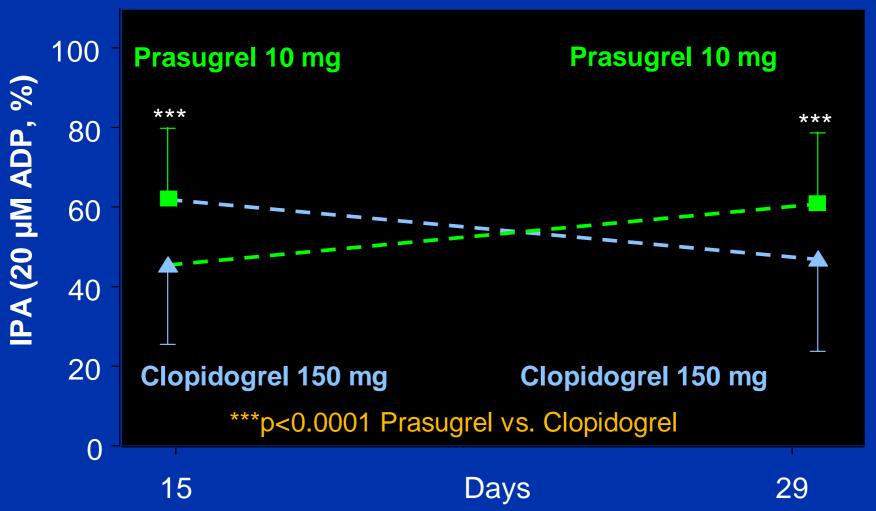
#### Primary Endpoint: Loading Dose Phase IPA

Highly significant differences emerged throughout the LD phase



#### **Maintenance Dose Phase IPA**

Substantially and statistically significantly greater platelet inhibition with prasugrel



Least square mean (LSM) + standard deviation; IPA=inhibition of platelet aggregation

• Well-tolerated and no TIMI major bleeds observed in either treatment arm during the study period.

Wiviott SD et al. Circulation 2007;116:2923-2932



#### Purpose: to expand the prasugrel indication

- ACC/AHA and ESC guidelines<sup>1</sup> endorse an early invasive strategy with prompt coronary angiography and revascularization in UA/NSTEMI patients with intermediate to high-risk features
- Despite this recommendation, observational studies show that nearly 50% of subjects with UA/NSTEMI do not undergo catheterization and/or revascularization procedures during initial hospitalization<sup>2</sup>
- Furthermore, prognosis for medically managed patients, excluding those with insignificant CAD, is poor compared to those treated with early revascularization<sup>3</sup>

<sup>&</sup>lt;sup>1</sup> Anderson 2007; Bassand 2007

<sup>&</sup>lt;sup>2</sup> Goldberg 2004, Carruthers 2005; Roe 2005; Mandelzweig 2006; Tricoci 2006



# TaRgeted platelet Inhibition to cLarify the Optimal strateGy to medicallY managed Acute Coronary Syndromes

- Double-blind, parallel-arm, active control study
- To evaluate safety and efficacy of prasugrel against clopidogrel in reducing the risk of cardiovascular death, heart attack or stroke in UA/NSTEMI patients who are to be medically managed without planned revascularization
- About 10,300 patients, 800 hospital, 35 countries
- Duke Clinical Research Institute (Dr. Magnus Ohman)



#### **Study Population**

#### Med-High Risk UA/NSTEMI ACS

Management decision ≤ 7 days after presentation

ELIGIBLE

INELIGIBLE

**Medication Only** 

 $N \sim 10,300$ 

PCI or CABG (performed or planned for Index Event)



## Rivoglitazone (CS-011)





#### Product Profile of Rivoglitazone

- Potent selective PPAR-gamma agonist
- Superior efficacy to pioglitazone
- Early onset of therapeutic benefits
- Favorable lipid profile
  - TG reductions and HDL-C increases, similar to or better than pioglitazone
  - No significant increase in LDL-C
- Equivalent safety profiles to pioglitazone
  - Hemodilution, weight gain and edema
  - Adequate safety margins on animal carinogenecity studies
  - No indication of liver toxicity
- Over 12,000 patients to be studied with careful monitoring of safety and efficacy



#### **Target Product Profile**

- Indication for treatment of type 2 diabetes
  - Monotherapy
  - Combination use with other classes of agents
- Significantly superior efficacy to pioglitazone
  - At top dose, glycemic benefits 20 to 30% greater than with pio 45mg
- Safety profile generally similar to pioglitazone
  - Edema and fluid retention
  - CV outcomes
- > Favorable lipid data included in the product label
  - TG reductions and HDL increases; no significant effect on LDL-C



#### **Development Timeline**

- ><u>US / EU</u>
  - Ph3 2007 2010
  - NDA / MPP 2011
- >JPN / Asian
  - Ph2 2007 2008
  - Ph3 2009 2011
  - NDA 2011



### Summary of Rivoglitazone Ph2 Study



 Both 2 and 3 mg rivoglitazone showed significantly greater HbA1c placebo-corrected decreases from baseline than pioglitazone 45 mg

#### > TG and HDL-C

 Rivoglitazone showed greater TG reductions and HDL-C increases than pioglitazone 45 mg

Results to be presented at scientific conference(s) in 2008





### **Olmesartan Franchise**





#### Olmesartan Franchise

- CS-8663 (Combination drug with Amlodipine)
  - Sep. 2007 Approved in the US, Brand name: AZOR®
  - Sep. 2007 NDA filed in Europe (28 countries), Brand name: Sevikar™
    - ⇒ Approvals gradually expected from autumn 2008
- CS-8635 (Combination drug with Amlodipine and Hydrochlorothiazide)
  - Phase 3 trials planned in the US
- CS-866AZ (Combination drug with Azelnidipine\*)
  - Phase 3 trials ongoing in Japan
    - \* Azelnidine is marketed in Japan as brand name of Calblock
- CS-866DM (New indication for diabetic nephropathy)
  - Phase 3 trials ongoing in Japan
- CS-866CMB (Combination drug with Hydrochlorothiazide)



#### Status of CS-8635

- Development concept
  - Triple combination will maximize the sales of Olmesartan franchise and key opportunity for growth
  - Next step for patients who are on either an ARB / HCTZ or CCB / ARB and need additional blood pressure reduction
- Target Indication: Treatment of hypertension
- Region: US
- Development Stage: Phase 3 planned
- > NDA Submission: 2009



#### Status of CS-866AZ

- Development concept
  - Maximize the sales of Olmesartan and Calblock as one of LCM strategies
  - Fixed dose combination of ARB and CCB which are most frequently co-administered in Japan for hypertension treatment
- Target Indication: 2nd line therapy for hypertensive patients who responded poorly to Olmetec or Calblock treatment
- Region: Japan
- Development Stage: Phase 3
- NDA Submission: 2009



#### Status of CS-866DM

- Development concept
  - Additional indication of Olmesartan as one of LCM strategies
  - Evaluate the composite renal endpoints\* as primary endpoint in ORIENT study

- Target Indication: Diabetic nephropathy with type 2 diabetes
- Region: Japan
- Development Stage: Phase 3
- NDA Submission: 2009

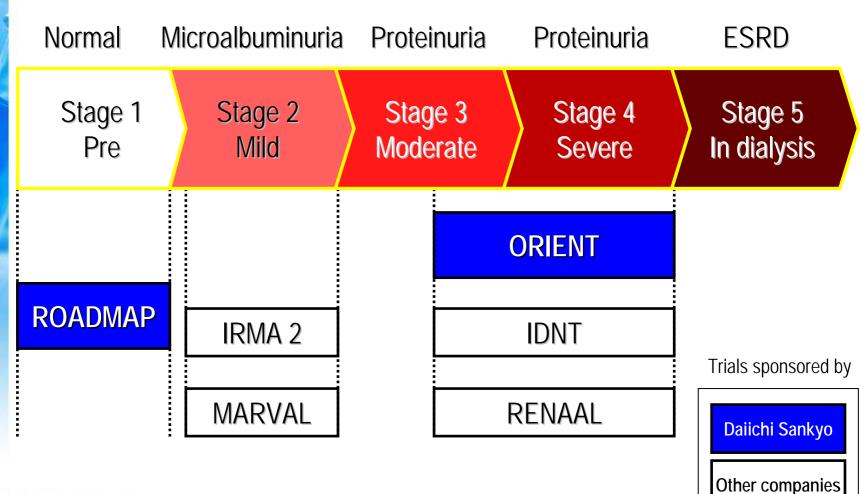


<sup>\*:</sup>Doubling of serum creatinine (Scr), Onset of ESRD (Scr>5 mg/dL, dialysis, kidney transplantation), Death

#### **ROADMAP Study**

Daiichi-Sankyo

Originality; Diabetic Nephropathy and Outcome Studies
The subject condition of ROADMAP is normal renal function

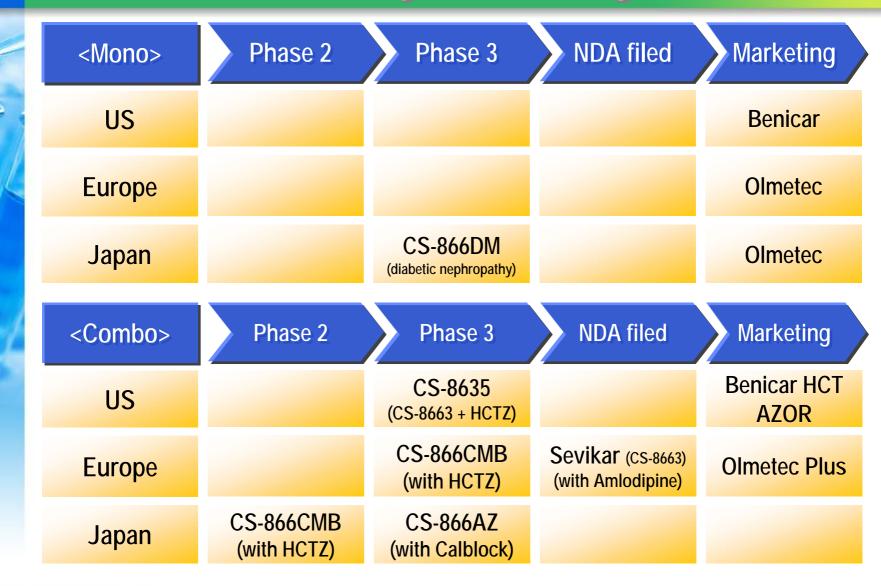


#### **ROADMAP Study**

- The ROADMAP study will establish whether olmesartan can prevent microalbuminuria in patients with type 2 diabetes, and whether this signifies vascular protection
  - First study to examine whether an ARB can prevent or delay the onset of microalbuminuria
- Randomized, double-blind, placebo-controlled, multicentre, multinational, parallel-group trial of olmesartan 40 mg/day vs. placebo
- 4,400 patients with Type-2 diabetes mellitus and normoalbuminuria with at least 1 cardiovascular risk factor
- Study Schedule
  - Started Nov. 2004
  - Recruitment ended Jun. 2006
  - Clinical phase to end 2011
  - Study report 2012



#### Olmesartan Lifecycle Management







### **DU-176b**





#### Target Profile and Positioning of DU-176b

Attributes	DU-176b
Dosage Regimen	Once daily dosing
Efficacy	Not inferior to warfarin in VTE / NVAF
Safety and tolerability	
- Bleeding	Not inferior to warfarin Low incidence of bleeding
- Liver Toxicity	No hepatotoxicity
Indications	VTE
	NVAF
Food Effects	No
Monitoring	No



## Protocol of Ph2b Studies in THR & TKR

- Primary objective
  - Assess the efficacy of DU-176b in the prevention of VTE vs. dalteparin (THR) or placebo (TKR)
     THR: total hip replacement

TKR: total knee replacement

- Patient population
  - Patient undergo elective THR / TKR
- Design
  - Randomized, double-blind
- First dosing
  - 6 to 8 hours after surgery (THR), 6 to 24 hours after surgery (TKR)
- Treatment period
  - 7 to 10 days (THR), 11-14 days (TKR)
- Number of patients
  - 750 (THR), 410 (TKR)



# Summary of Ph2b Results in THR & TKR

- Dose-dependent inhibition of VTE incidence
  - THR 15 mg 90 mg qd, superior to dalteparin (US/EU)
  - TKR 5 mg 60 mg qd, superior to placebo (Japan)
- Low incidence of major bleeding, including at doses with very effective VTE inhibition
- Favorable PK/PD profile
- Possible QD (once daily) regimen

Results to be presented at scientific conference(s) in 2008

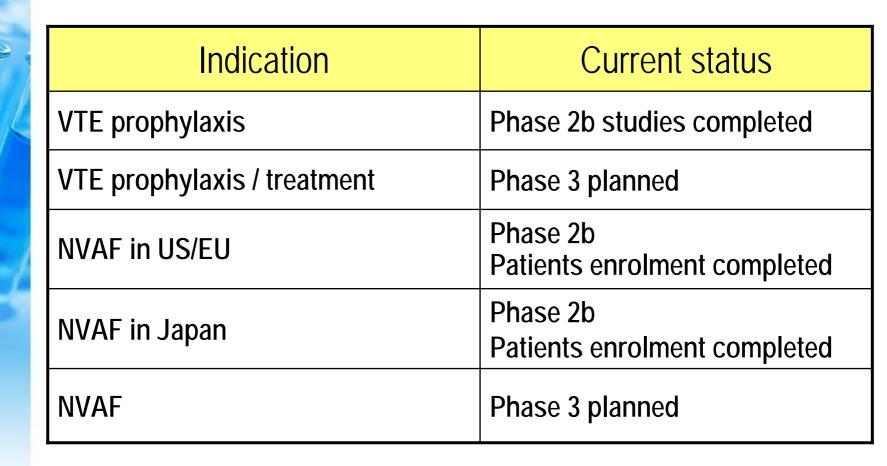


## Protocol of Ph2b Studies in AF

- Primary objective
  - Evaluation of safety of DU-176b vs. warfarin
- Patient population
  - Patients with non-valvular AF
- Design
  - Randomized, double-blind, active-controlled, DU-176b and open-label warfarin study
- Treatment period
  - 3 months treatment
- Number of patients
  - 1,000 (US/EU), 500 (Japan)



# Multiple Chronic Indication Strategy





# DU-176b Best in Class Inhibitor of Blood Coagulation Factor Xa

- No hepatotoxicity signals in pre-clinical including toxicogenomics and clinical studies
- Phase 2b studies in patients with total hip replacement and total knee replacement completed and patients with atrial fibrillation are ongoing globally
  - Favorable balance of efficacy versus bleeding in studies to date
- > Phase 3 NVAF study planned to be started in 3Q 2008
- Significant market opportunity but with competitors





# **Denosumab** (AMG 162)



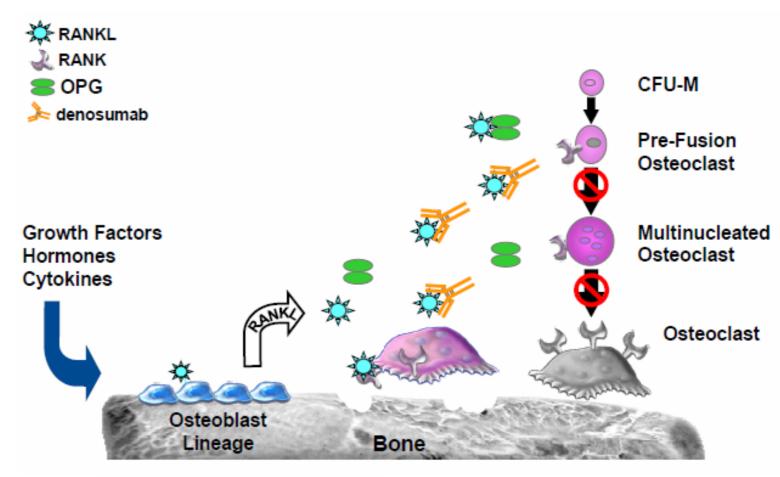


# What is Denosumab (AMG 162)

- Denosumab (Dmab) is a fully human monoclonal antibody that specifically targets the receptor activator of nuclear factor kappa B ligand (RANKL), a key mediator of the resorptive phase of bone remodeling.
- Dmab is being studied across a range of conditions, including osteoporosis, treatment-induced bone loss, rheumatoid arthritis, bone metastases, and multiple myeloma.
- On July 11, 2007, Amgen and Daiichi Sankyo announced a collaboration and license agreement for the development and commercialization of Dmab in Japan.



# Proposed Mechanism of Action for Dmab



CFU-M = colony-forming unit-macrophage.

Provided 8-ptember 27, 2007 as part of an oral presentation and is qualified by such, contains forward-looking statements, actual results may vary materially; Amgen discisims any duty to update.



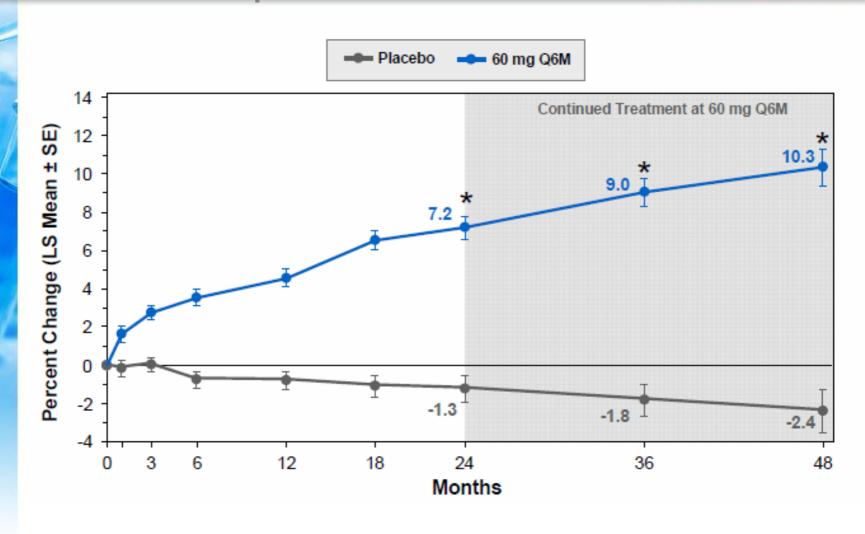
# **Development Overview**

Indication	Dose	Development Stage	
		US/EU	Japan
Osteoporosis	60 mg every 6 months SC	Ph.3	Ph.3 preparing
Oncology (Bone Metastasis)	120 mg every month SC	Ph.3	Ph.3
Rheumatoid Arthritis	60-180 mg every 6 months SC (TBD)	Ph.2	-

- Generally well tolerated; adverse events were similar among Dmab, placebo, and alendronate groups
- No neutralizing antibodies observed



# Effect of 4 Years of Dmab Treatment on Lumbar Spine BMD





# Recent Outcomes and Upcoming Events

- Phase 3 head-to-head study vs alendronate met primary and all secondary endpoints
  - Denosumab showed approximately 40% greater increases in bone mineral density as compared to alendronate
  - Denosumab and alendronate exhibited similar safety profiles
- Completed phase 3 breast SRE study enrollment

SRE: skeletal related events

Continue to expect robust data set in 2008

Data	Timing	
Phase 3 HALT prostate cancer	H2 '08 - data in house	
Phase 3 PMO fracture study	H2 '08 - data in house	

HALT: hormone-ablative therapy



## Development Plan (JPN) - Osteoporosis -

- Ph 1 study: Completed
  - Postmenopausal women
  - PK/PD study
- > Ph 2 study: Completed
  - A randomized, double-blind, placebo-controlled, dose response study of Dmab in Japanese postmenopausal osteoporosis subjects
  - Dose: 14, 60 and 100mg SC once every 6 months
  - Primary endpoints
    - Percent change of lumbar spine BMD at month 12
    - Safety profile
  - Phase 2 PMO study met both primary and secondary endpoints
- Ph 3 study: In preparation



# Development Plan (JPN) - Bone Metastasis -

- Ph 1 study: Completed
  - Breast cancer patients with bone metastasis
- > Ph 3 multinational studies including Japan: Ongoing
  - A randomized, double-blind, multicenter study of Dmab compared with Zoledronic Acid (Zometa®) in the treatment of bone metastases in subjects with advanced breast cancer





# **Oncology Franchise**





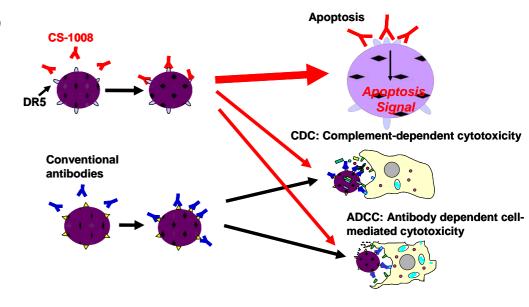
# **Oncology Franchise**

- AMG 162 Denosumab (Phase 3)
  - Human monoclonal antibody that targets RANK Ligand (an essential mediator of cells that break down bone)
- CS-1008 (Phase 2)
  - A humanized version TRA-8, a murine agonistic monoclonal antibody raised against human death receptor 5 (DR5)
- CS-7017 (Phase 1)
  - Antitumor PPAR-gamma activator
- DE-766 Nimotuzumab (Phase 1)
  - Humanized monoclonal antibody against the epidermal growth factor receptor



### CS-1008

- A humanized version TRA-8, a murine agonistic Mab raised against human death receptor 5 (DR5)
  - DR5 is rarely expressed in normal tissues, expected to show selective activity against tumor cells
- Induces apoptosis of tumor cells expressing DR5 on the cell surface
- Anti-cancer effect from pre-clinical studies
  - Human cancer cell lines in vitro
  - Tumor-bearing mice in vivo
- Good safety profile in pre-clinical studies
- Development timeline
  - IND: Dec 2005
  - Phase 2 start: 3Q 2007





## CS-7017

- > Antitumor PPAR-gamma activator
  - Positive correlation between PPAR-gamma activation and inhibition against colony formation of tumor cells in vitro
- > Inhibits growth of tumor cells in vitro without killing those cells
  - Expected to be less toxic compared to standard chemotherapeutics
- > Effective against human tumor-implanted *in vivo* models
- Could be used either alone or in combination with other chemotherapeutic agents
- > Phase 1 study is ongoing in US



## Nimotuzumab DE-766

- Humanized Mab to epidermal growth factor receptor (EGFR)
- > Target indication; tumors expressing EGFR
  - Glioma, NSCLC, Esophagus, Gastric, Colorectal, etc
- Combination therapy (with radiotherapy and/or chemotherapy)
- Superior safety in terms of skin rash and comparable efficacy to other EGFR Mabs
  - Best-in-Class among EGFR antibodies
- > Development timeline
  - Phase 1 study in Japan: ongoing
  - Phase 2 start: 2Q 2008
- > Current Status in Other Countries
  - Head & Neck cancer: Approved in Cuba, India, South America countries etc.
  - Nasopharyngeal carcinomas: Approved in China, Cuba
  - Glioma: Approved in Cuba, Argentina and Ukraine Phase 3 study is ongoing in Germany





# **Closing Remarks**





## Daiichi Sankyo R&D Strategy Vision Statement

As a Global Pharma Innovator, Daiichi Sankyo R&D will discover and develop value added first-in-class and best-in-class therapies expanding on our legacy of quality and innovation to improve patient health and raise global standards for disease treatment and prevention



# Therapeutic Area Prioritization

Malignant Neoplasm Thrombotic Disorders

**Core Disease Areas** 

Autoimmune Disorders / RA Diabetes Mellitus

Franchise Areas

Hypertension

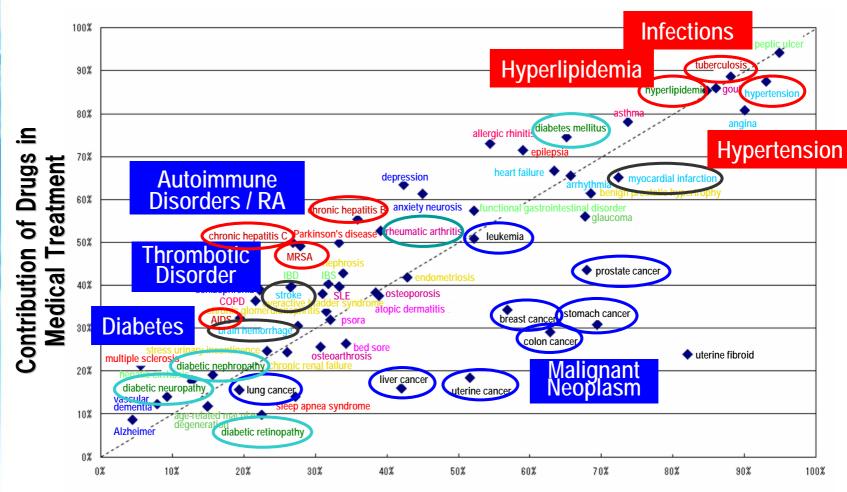
Hyperlipidemia / Atherosclerosis

Bacterial Infections



# Correlation between Medical Satisfaction and Contribution of Drugs

#### Results of Questionnaire to Physicians







# Therapeutic Area Prioritization

#### Core Disease Areas

Thrombotic Disorders

Malignant Neoplasm Diabetes Mellitus

Autoimmune Disorders / RA

- High Unmet Medical Needs
- Novel products with high efficacy and good safety based on our excellent science and technologies

#### Franchise Areas

Hypertension

**Bacterial Infections** 

Hyperlipidemia / Atherosclerosis

- Relatively Low Unmet Medical Needs because of good therapeutics including our products: Olmetec / Benicar, Cravit / Levaquin, Mevalotin / Pravachol, etc.
- Products with improved usefulness for patients by developing combination drugs, additional formulations, and others.





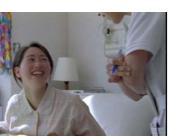








# We make the impossible possible and make the incurable curable ~ Our Challenge ~















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