



Corporate Presentation
Calendar Q1 2012

Safe Harbor

This presentation may contain forward-looking statements, which reflect the Company's current expectation regarding future events. These forward-looking statements involve risks and uncertainties that may cause actual results, events or developments to be materially different from any future results, events or developments expressed or implied by such forward-looking statements. Such factors include, but are not limited to, changing market conditions, the successful and timely completion of clinical studies, the establishment of corporate alliances, the impact of competitive products and pricing, new product development, uncertainties related to the regulatory approval process or the ability to obtain drug product in sufficient quantity or at standards acceptable to health regulatory authorities to complete clinical trials or to meet commercial demand, and other risks detailed from time to time in the Company's ongoing quarterly and annual reporting. Certain of the assumptions made in preparing forward-looking statements include but are not limited to the following: that our JAK1/JAK2 inhibitor CYT387, nimotuzumab and our VDA small molecule CYT997 will generate positive efficacy and safety data in future clinical trials, and that YM and its various partners will complete their respective clinical trials within the timelines communicated. Except as required by applicable securities laws, we undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

Corporate Information

Net cash (Sept 30, 2011)	~\$71mm
Cash used in last 12 months (Sept 30, 2011)	~\$25mm
Market cap (Jan 5, 2012)	~\$190mm
Volume (3-month average)	~1.3mm shares/day
Total shares outstanding (Sept 30, 2011)	~116.7mm
Warrants @ \$1.60 (to Mar 10, 2015)	~7.4mm
Options ¹ (Sept 30, 2011)	~8.9mm
No debt or preferred shares	

¹ Weighted average exercise price \$1.99

YM BioSciences

Product	Preclinical	Phase I	Phase II	Phase III
CYT387 JAK1/JAK2 inhibitor Positive interim Phase I/II myelofibrosis data presented at ASH 2011				
Nimotuzumab EGFR targeting antibody Multiple Phase II and Phase III trials				
CYT997 Tubulin inhibitor IV + oral formulation development				

Our Significant Expertise in JAK Research

YM acquired original intellectual assets in JAK field

- Lead product CYT387
- Wholly-owned and unpartnered
- First group to publish crystal structures of JAK2 and JAK1
- Medicinal chemistry and molecular modeling expertise
- Novartis collaboration for selective JAK3 inhibitors

Intellectual Property

CYT387 Composition of Matter

US: Pending, 2028 expiry

EU: Pending, 2028 expiry

JAK2 Crystal Structure

US: Issued, 2025 expiry

EU: Pending, 2026 expiry

JAK2 Enzyme

US: Issued, 2015 expiry

EU: Issued, 2011 expiry

Target Markets for JAK Inhibitors

Autoimmune Diseases

- Rheumatoid Arthritis
- Psoriasis
- Graft vs. Host Disease

Myeloproliferative Neoplasms

- Myelofibrosis
- Polycythemia Vera
- Essential Thrombocythemia

Cancer / Hematology

- Leukemia and Lymphoma
- Solid Tumors
- Other Hematologic Disorders

Chronic Disorders

Clinical Proof of Concept

Acute Diseases

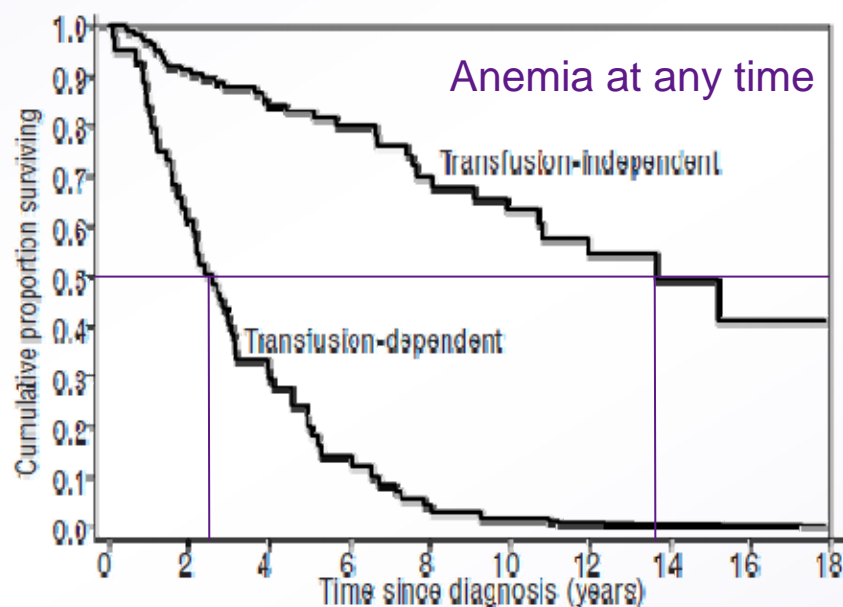
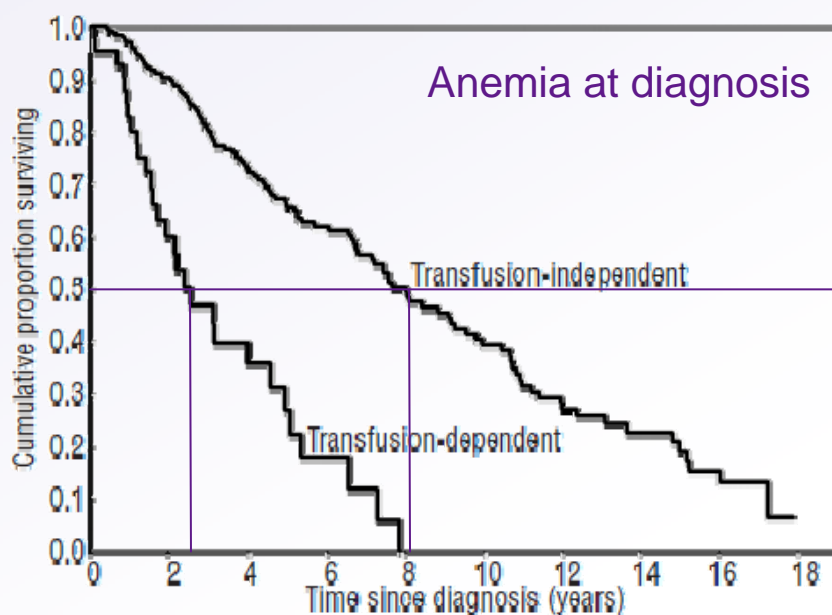
CYT387: Target Product Profile

CYT387 is able to provide a clinically meaningful benefit to myelofibrosis patients by:

1. Converting transfusion dependent patients to transfusion independent status;
2. Reducing spleen volume in patients with enlarged spleens;
3. Improving constitutional symptoms and quality of life

...while having a significantly lower risk of causing or worsening hematological adverse events such as thrombocytopenia, anemia and neutropenia.

Anemia Impacts Survival in Myelofibrosis



- ~70% of myelofibrosis patients are Intermediate-II or High risk[†]
- Estimated that 30-40% of all myelofibrosis patients are transfusion dependent[‡], majority of which are Intermediate-II and High risk patients

[†] DIPSS-Plus; Gangat *et al.* *JCO* 2011; 29(4), 392; [‡] Elena *et al.* *Haematologica* 2011 96(1) 167

Myelofibrosis Market and Physician Surveys

Physician surveys indicate patients present with anemia (~65%), splenomegaly (~65%), constitutional symptoms (~55%) and thrombocytopenia (~25%)

- Physicians equally concerned about both anemia and splenomegaly
- Thrombocytopenia is manageable but remains a key safety concern
- Patients complain most about transfusions, abdominal pain and constitutional symptoms

Reducing the need for transfusions is a primary goal for anemic and transfusion dependent patients

- Avoid complications from transfusions, remove burden transfusions place on healthcare system, improve fatigue and quality of life

Myelofibrosis Market and Physician Surveys

Physicians were universally enthusiastic about the potential for CYT387 as depicted in the TPP:

- Its broad spectrum of activity addressing all key areas of concern in MF was praised across markets (US + EU)
- Physicians in EU were more likely than their US counterparts to interpret the MoA and described performance as pointing to the underlying disease-modifying potential of CYT387 in MF
- Respondents anticipate using CYT387 in a wide range of MF patients

When presented with the emerging MF landscape respondents generally noted that they will compare profiles and prescribe accordingly



Safety and Efficacy of CYT387
Updated Phase I/II Data - ASH 2011

Background

- CYT387 is a potent JAK1 and JAK2 inhibitor.
- The maximum tolerated dose (MTD) and preliminary safety and efficacy of once-daily dosing of CYT387 were determined in a single center Phase I/II study.
- Previously reported results from the first 60 subjects enrolled in this study determined a MTD of 300 mg QD and demonstrated improvements in splenomegaly and constitutional symptoms as well as in red blood cell (RBC) transfusion requirements.
- The study was expanded into a multicenter study with the addition of a twice-daily dosing arm.
- The accrual of 166 subjects at six study sites is complete.
- The preliminary safety and efficacy results from this expanded multicenter study are presented.

Study Design

A Phase I/II open-label, non-randomized, dose-escalation study in three phases:

Dose-escalation phase (Part 1), determined the safety and tolerability of CYT387.

- Dose-limiting toxicities (DLTs) (2 of 6 subjects at 400 mg QD) were asymptomatic, reversible Gr 3 hyperlipasemia (n=1), and Gr 3 headache (n=1).
- Identified the MTD for CYT387 as 300 mg QD.

Dose-confirmation phase (Part 2), a cohort expansion at or below the MTD of CYT387. The dosages determined for Part 2 were 150 mg QD and 300 mg QD.

Dose-expansion phase (Part 3), carried out at multiple study sites to identify a therapeutic dose for CYT387. The dosages determined for Part 3 were 150 mg QD, 300 mg QD and 150 mg BID*.

*MTD of BID dose schedule not established; subject of ongoing Phase II study

Study Design

- CYT387 was orally self-administered beginning on Day 1 of the study, and thereafter at approximately the same time(s) each day of a 28-day cycle.
- The Core study consists of nine treatment cycles. Evaluations were performed weekly during the first cycle, every two weeks for cycles two and three, and at the end of each subsequent cycle.
- Patients who achieve at least stable disease or better (per IWG-MRT criteria) and tolerate the drug well may continue to receive CYT387 beyond the planned nine cycles in an Extension phase of the study.

Study Objectives

The primary objectives of this study are:

- To determine the safety and tolerability, DLTs and MTD of orally-administered CYT387 in patients with Primary Myelofibrosis (PMF) or post Essential Thrombocythemia/Polycythemia Vera (post-ET/PV) Myelofibrosis (MF).
- To obtain preliminary information on the effectiveness of orally-administered CYT387 in patients with PMF or post-ET/PV MF, as measured according to IWG-MRT criteria.

Key Entry Criteria

Diagnosis of PMF or post-ET/PV MF as per revised World Health Organization (WHO) criteria.

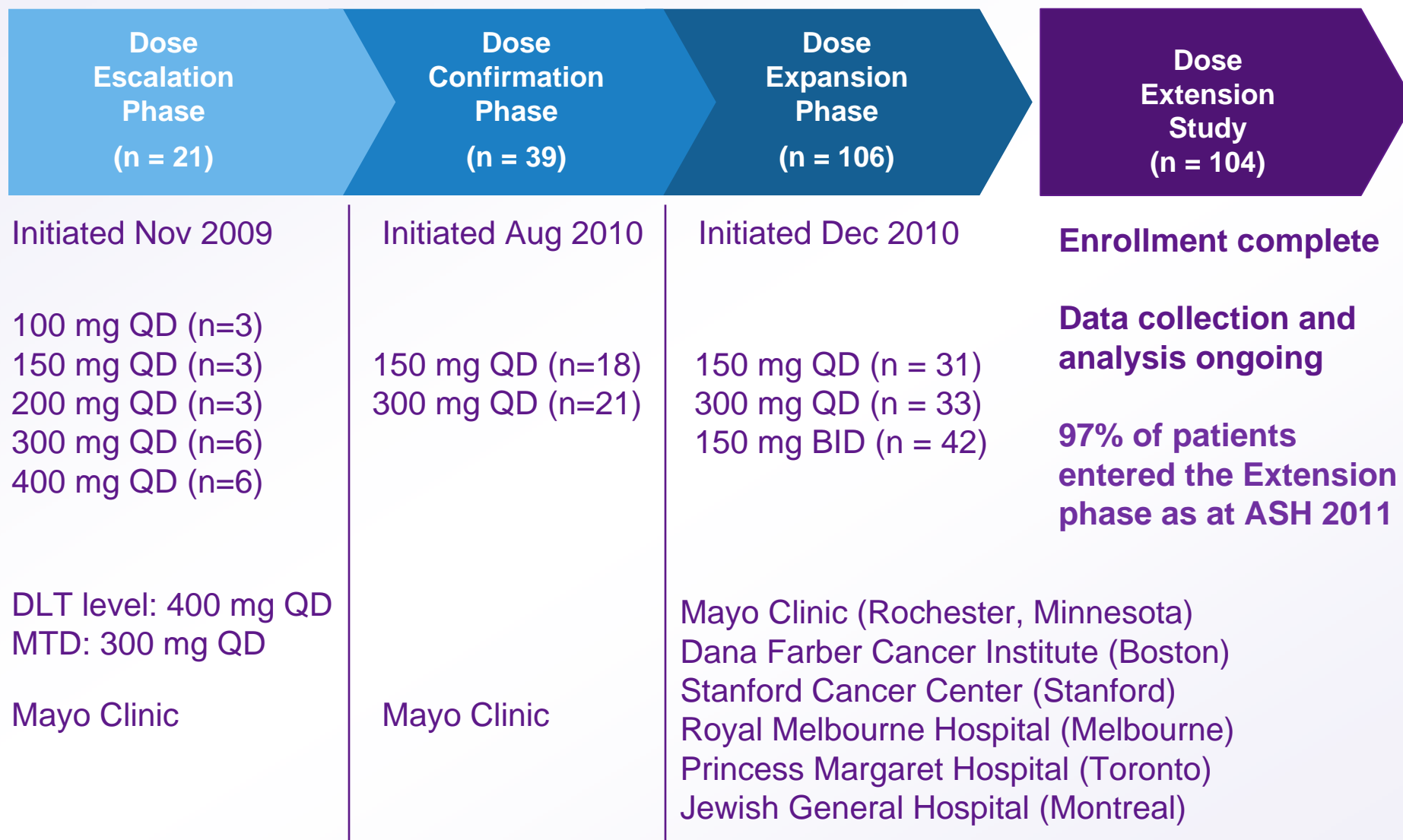
High-risk or Intermediate-2 risk MF (as defined by the International Prognostic Scoring System [IPSS]); or Intermediate-1 risk MF (IPSS) associated with symptomatic splenomegaly/hepatomegaly and/or unresponsive to available therapy.

Must have evidence of acceptable organ function within seven days of initiating study drug as evidenced by the following:

- SGOT (AST) or SGPT (ALT) ≤ 2.5 x upper limit of normal (ULN) (or ≤ 5 x ULN if in the investigator's opinion the elevation is due to extramedullary hematopoiesis)
- Bilirubin ≤ 2.0 x ULN or direct bilirubin < 1.0
- Serum creatinine ≤ 2.5 x ULN
- Absolute neutrophil count $\geq 500/\mu\text{L}$
- Platelet count $\geq 50,000/\mu\text{L}$

No chemotherapy, immunomodulatory drug therapy, immunosuppressive therapy or corticosteroids >10 mg/day prednisone or equivalent, or growth factor treatment within 14 days prior to initiation of study drug.

Current Study Status



Subject Disposition

Median follow-up (range) for Core and Extension: **10.4 months (0.8–25.6)***

Median follow-up (range) for Core: **9.0 months (0.8-9.0)***

Study discontinuation during Core: n=32 (19%); **81% retention rate**

Reasons for discontinuation during Core (n=32):

- Unrelated comorbid conditions (n=11)
- Subject withdrew consent (n=5)
- Possibly or probably related adverse event (n=5): Neuropathy (n=2), cough (n=1), transaminitis (n=1), thrombocytopenia (n=1).
- Disease progression (n=4)
- Investigator's decision (n=4)
- Stem cell transplant (n=2)
- Intercurrent illness (n=1)

Deaths during Core: n=12 (7%)

Study discontinuation during Extension: n=16 (21%); **79% retention rate**

Subject Baseline Characteristics

Characteristic	Value
Number of Subjects	166
Age (years)	
Median	67
Range	34–89
Sex	
Male	58%
Female	42%
Myelofibrosis	
Primary	65%
Post-polycythemia vera	22%
Post-essential thrombocythemia	14%
JAK2V617F Positive	76%
DIPSS-Plus Category*	
Int-1	11%
Int-2	61%
High	28%

Characteristic	Value
Prior Therapy	
JAK2 inhibitor (INCB018424, TG101348, Unspecified)	12%
IMiDs (Pomalidomide, Thalidomide, Revlimid)	9%
Palpable Splenomegaly > 10 cm	80%
Spleen Size (cm) (Spleen Evaluable; n=142)	
Mean (STD)	18.2 (6.5)
Median	17.0
RBC Transfusion Dependent	44%
Median Hemoglobin (g/dL)	
All subjects (n=166)	9.5
Transfusion independent subjects (n=93)	10.4
Transfusion dependent subjects (n=73)	8.7
Platelet Count (109/L)	
Median	187.5

* Based on available data; includes unfavorable karyotype, platelet count and transfusion dependent status as additional prognostic factors.

CYT387 Evaluated in an Advanced Population

	CYT387	Ruxolitinib	Ruxolitinib	Ruxolitinib
Baseline Characteristic	Phase I/II (ASH 2011)	Phase III (Comfort-1)	Phase III (Comfort-2)	Phase II (NEJM)
Primary Myelofibrosis (%)	65%	45%	53%	53%
Post-PV Myelofibrosis (%)	22%	31%	31%	31%
Post-ET Myelofibrosis (%)	13%	24%	16%	16%
Median Hemoglobin (g/dL)	9.5	10.5	10.4	10.4
Median Platelets (10 ⁹ /L)	187.5	262	236 (all pts)	263
Median ANC (10 ⁹ /L)	8.3	Not reported	Not reported	12.1
Spleen length (cm)	17	16	15	19
Spleen volume (cm ³)	3667	2595	2381	
Transfusion dependent (IWG) (%)	44%	< 21% (estd*) (Unspecified criteria)	< 21% (estd*) (Unspecified criteria)	(unspecified criteria)

* Product label cited that 21% of patients had RBC transfusion within 8 weeks of enrollment in the study. Maximum estimation of potential transfusion dependent patients

Transfusion Independence Response

Response by Dose	150 mg QD (n=52)	300 mg QD (n=60)	150 mg BID (n=42)	Total ¹ (n=166)
Transfusion dependent at baseline (evaluable; n)	25	26	14	68
Median time on study (days)	251	245	141	250
Transfusion independence rate (12 weeks)*	48%	65%	43% ²	54%
Transfusion independence rate (12 weeks & Hgb≥8g/dL)*	40%	62%	29% ²	46%

¹ Includes 100 mg QD (n=3), 200 mg QD (n=3), and 400 mg QD (n=6) doses

² Not statistically significant vs. 300 mg QD

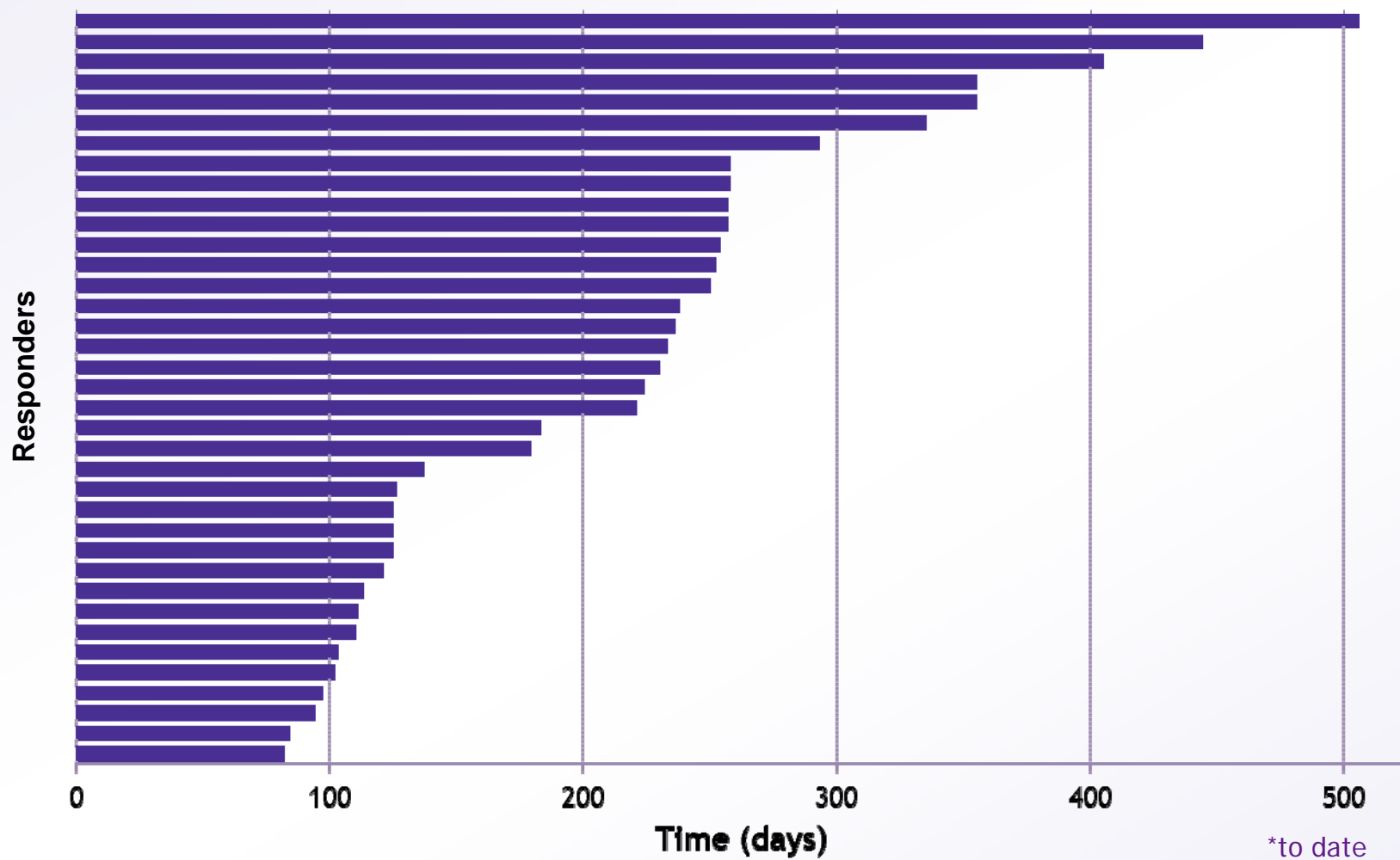
* ongoing

- >25% of subjects not receiving transfusions while on study experienced at least a 1 g/dL increase in Hgb for ≥ 8 weeks.

Time to Response	Median	Min-Max
Time to confirmed response (12 wks & Hgb≥8 g/dL) (days)	84	84-293
Duration of transfusion-free period (12 wks & Hgb≥8 g/dL) (days)	not yet reached	82-506*

* ongoing

Maximal Duration of Transfusion-Free Period*



Spleen Response

Response by Dose	150 mg QD (n=52)	300 mg QD (n=60)	150 mg BID (n=42)	Total ¹ (n=166)
Spleen evaluable (n)	47	51	33	142
Median time on study* (days)	252	225	144	225
Spleen response* (IWG-MRT)	30%	33%	27%	31%
≥50% decrease in palpable spleen length at six months	28%	33%	39%	33%
Median spleen decrease at six months	-35%	-35%	-39%	-35%

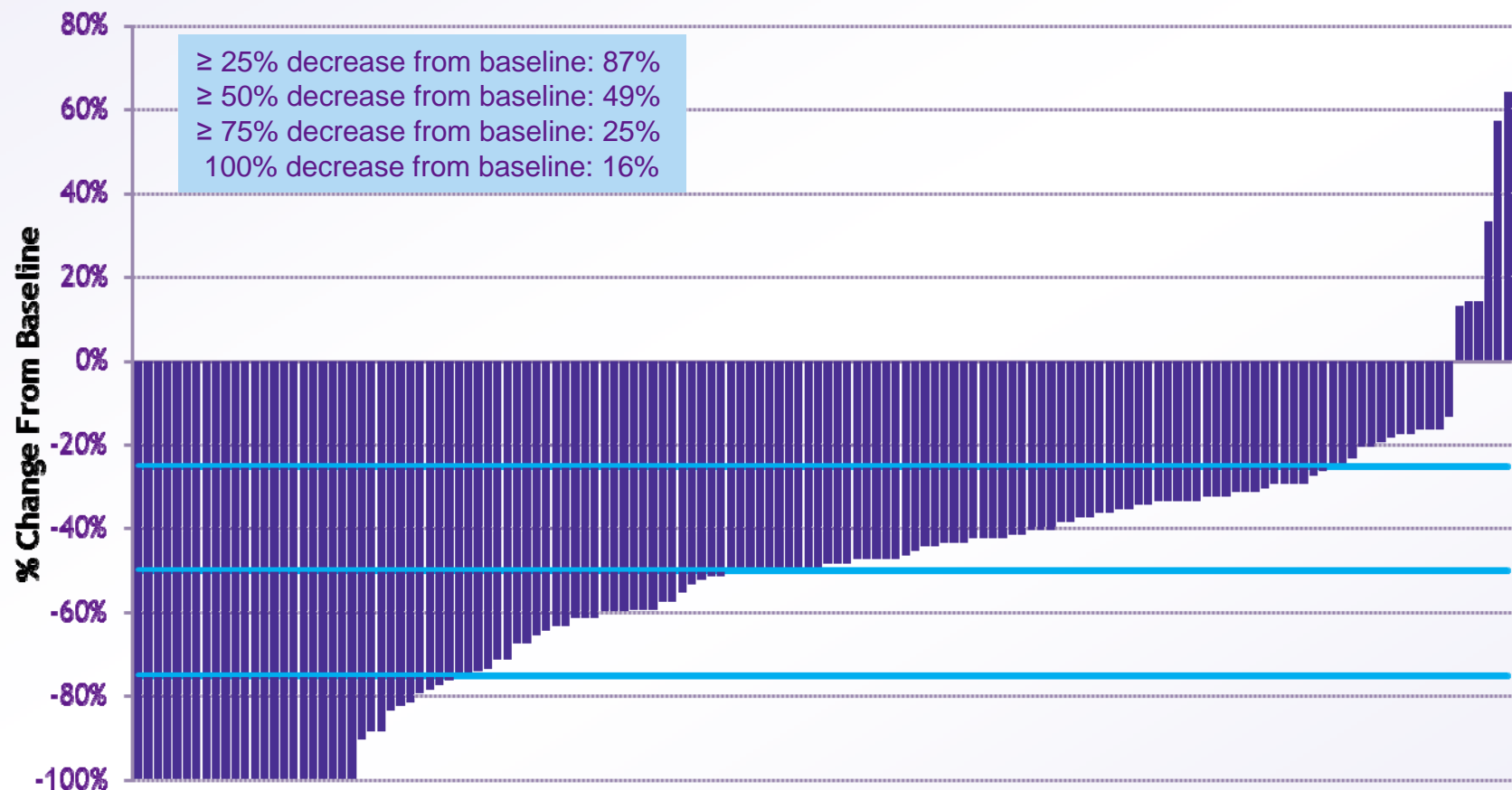
Response by Diagnosis	Primary MF (n=106)	Post-PV MF (n=36)	Post-ET MF (n=24)
Spleen evaluable (n)	88	34	20
Spleen response* (IWG-MRT)	28%	38%	30%

Time to Response	Median	Min-Max
Time to IWG-MRT response (days)	15	6-260
Duration of response (days)	not yet reached	55-574*

¹ Includes 100 mg QD (n=3), 200 mg QD (n=3), and 400 mg QD (n=6) doses
* ongoing

Maximal Change in Palpable Spleen Size*

(Core Study; n=142)



*ongoing

Spleen Response: MRI vs. Palpation

	MRI ¹ (n=11)	Palpation (n=11)
Response at three months	64% ²	45% ³
Median decrease from baseline at three months	-41%	-45%

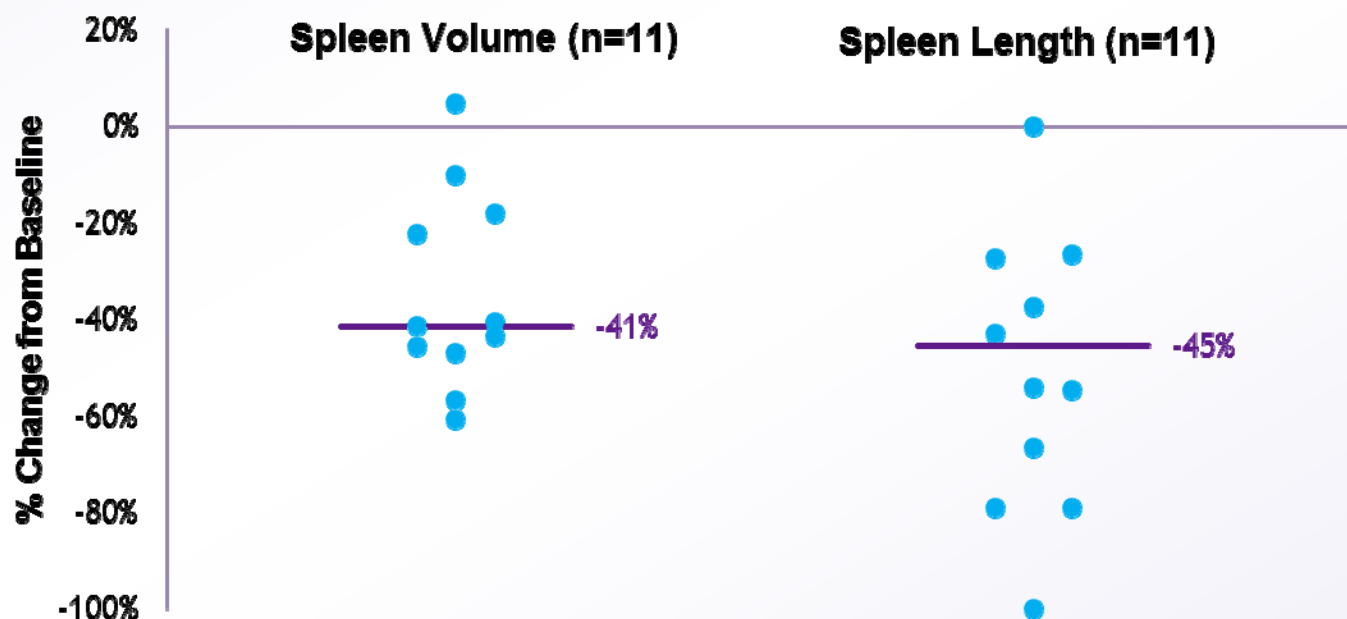
- Median spleen volume at baseline: 3667 cm³

¹ Includes 1 subject with CT assessment

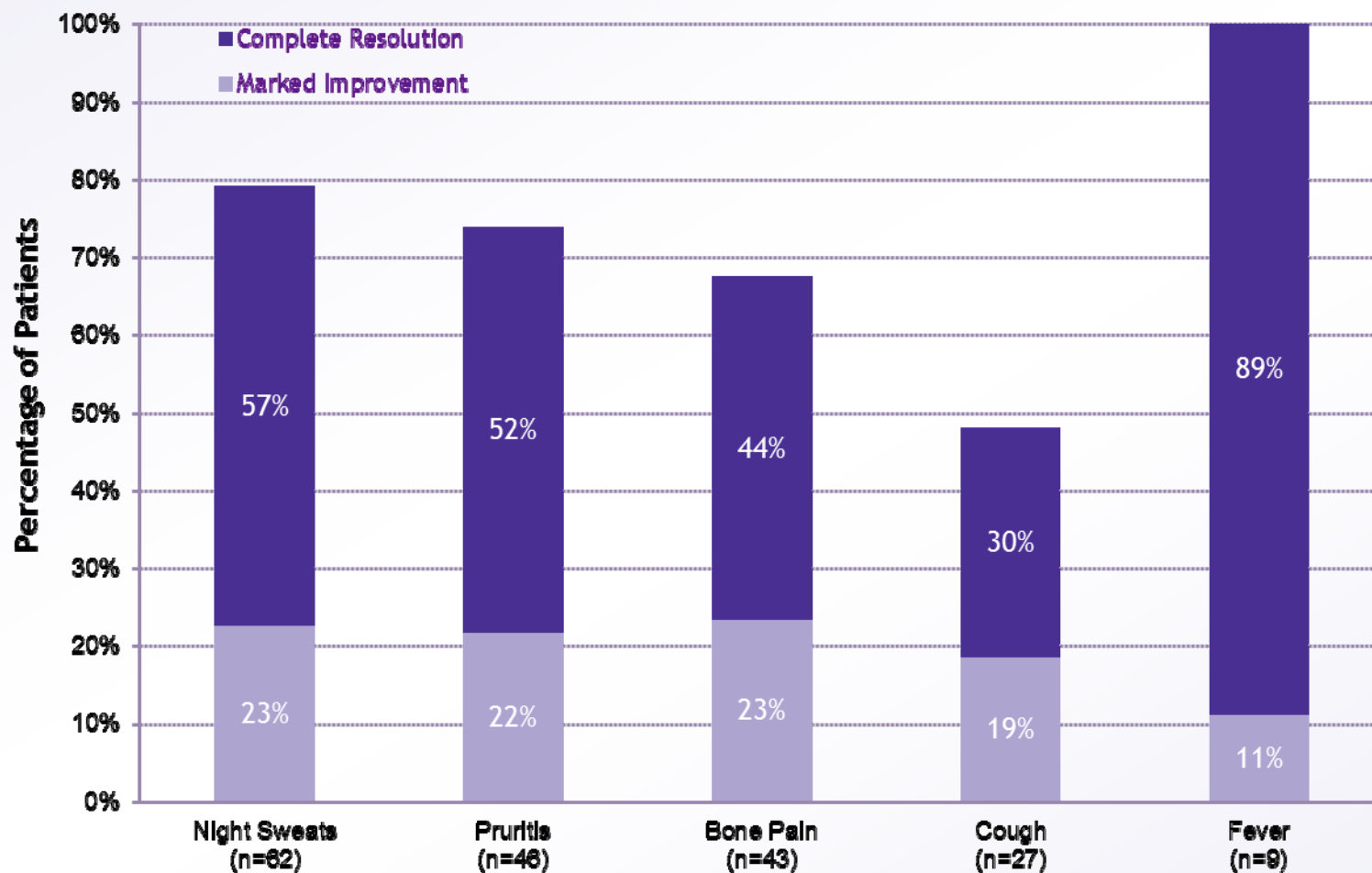
² Spleen response defined as a 35% reduction in spleen volume from baseline

³ Spleen response defined as a 50% reduction in spleen length from baseline

Spleen Response: Change from Baseline at 3 Months



Constitutional Symptoms Response at Six Months



Related Hematologic Adverse Events

Adverse Event (n=166)	All Grades	Grade 3	Grade 4
Thrombocytopenia	33%	11%	6%
Baseline platelets > 100 x 10 ⁹ /L	26%	6%	2%
Baseline platelets > 200 x 10 ⁹ /L	12%	4%	0
Neutropenia	6%	1%	2%
Anemia	4%	1%	0
Leukopenia	2%	<1%	<1%
Leukocytosis	1%	<1%	0

At least possibly related to study drug
Common Terminology Criteria for Adverse Events v3.0

Related Non-Hematologic Adverse Events

Adverse Event (n=166) Incidence ≥ 10%	All Grades	Grade 3	Grade 4
Dizziness ¹	20%	0	0
Neuropathy peripheral	20%	0	0
Diarrhea	18%	0	0
Nausea	17%	0	<1%
Headache	12%	1%	0

Adverse Event (n=166)	All Grades	Grade 3	Grade 4
First Dose Effect ²	20%	0	0
Dizziness	11%	0	0
Flushing	5%	0	0
Hypotension	6%	0	0

¹ Includes First Dose Effect

² Only events occurring on first dose date

At least possibly related to study drug
Common Terminology Criteria for Adverse Events v3.0

Related Non-Hematologic Laboratory Adverse Events

Adverse Event (n=166) Incidence ≥ 5%	All Grades	Grade 3	Grade 4
ALT increased	8%	2%	0
Lipase increased	8%	4%	0
AST increased	7%	1%	<1%
Amylase increased	6%	0	0
Bilirubin increased	6%	0	0
Creatinine increased	6%	0	0

At least possibly related to study drug
Common Terminology Criteria for Adverse Events v3.0

CYT387 – Safe, Effective, Differentiated

CYT387 treatment results in significant, durable responses in anemia, splenomegaly and constitutional symptoms at 150 mg QD, 300 mg QD and 150 mg BID dose levels.

- Therapeutic benefit and safety established in a population with multiple risk factors, including anemia and thrombocytopenia
- CYT387 anemia benefit appears unique among the current class of JAK1 and JAK2 inhibitors
- Clinically relevant maintenance of transfusion independence period
- MRI performed in a subset of subjects confirms the meaningful improvement in splenomegaly measured by palpation
- Complete resolution or marked improvement of common constitutional symptoms is achieved in the majority of subjects

CYT387 – Safe, Effective, Differentiated

CYT387 is well tolerated in myelofibrosis patients for dosing periods up to and exceeding two years:

- Reported adverse effects include thrombocytopenia; transient, mild dizziness; mild peripheral neuropathy; and abnormalities in liver/pancreas-related laboratory tests
- Treatment-emergent anemia and neutropenia are rare

Although additional assessments and analyses are ongoing, 300 mg QD appears to be a safe and effective dosing regimen that warrants further clinical development.



CYT387: Next Steps

CYT387 BID Study Design

Dose escalation study	Starting at 200mg BID, increasing by 50mg BID Recruiting approximately 60 patients Initiated in calendar Q3 2011
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- Designed to establish MTD on BID schedule to complement QD MTD
- Spleen response measured by palpation and MRI.
- Constitutional symptoms assessed using the Myelofibrosis Symptom Assessment Form (MFSAF).
- To assess anemia response, a minimum three months of transfusion history will be collected.
- Comprehensive blood work and biomarkers being recorded for correlative/mechanistic studies.

Mayo Clinic
(Arizona)

MD Anderson
(Texas)

Huntsman Cancer
Institute (Utah)

Princess Margaret
(Ontario)

Jewish General
(Quebec)

CYT387 Myelofibrosis Development Pathway

**Pivotal
program**



**Mid-2012
Anticipated
start**

**~60 patient
Phase II BID**



**Q3 2011
Initiated
Enrollment**



**Q2 2012
Report
interim data**

**166 patient
Phase I/II**



**Dec 2010
Presented
interim data
at ASH**



**Q2 2011
Presented
interim data
at ASCO**



**Q3 2011
Completed
enrollment**



**Q4 2011
Report
multicenter
data at ASH**

Promising Pipeline – Exciting Future

CYT387 JAK1/JAK2 inhibitor	Nimotuzumab anti-EGFR mAb	CYT997 Tubulin inhibitor
<p>Oral, small molecule</p> <p>Unpartnered and differentiated</p> <p>Potentially very broad utility (cancers, inflammatory)</p> <p>Multicenter Phase I/II data in myelofibrosis reported at ASH 2011</p>	<p>Prospect for enhanced safety in “billion dollar” class</p> <p>De-risked, over 10,000 patients dosed</p> <p>Partners advancing Phase II’s and III’s globally</p> <p>YM retains North American rights</p>	<p>Small molecule vascular disrupting agent (VDA)</p> <p>Oral bioavailability (plus intravenous)</p> <p>Phase I clinical proof of concept demonstrated</p> <p>Phase II (iv) in glioblastoma multiforme</p>

Kinase Inhibitor Preclinical Research Programs



YM BIOSCIENCES INC.

The logo features a white curved line with a small orange dot at its start and a larger orange circle at its end, positioned above the text.