Actinium Pharmaceuticals, Inc.

April 2015

Disclaimer and Safe Harbor Statement

Disclaimer

The contents of this presentation and the information which you are given at the time of these slides and the presentation have not been approved by an authorized person within the meaning of the Financial Services and Markets Act 2000 (the "Act"). Reliance on this presentation and its slides for the purpose of engaging in investment activity may expose an individual to a significant risk of losing all of the property or other assets invested. This presentation does not constitute or form part of any offer for sale or subscription or solicitation of any offer to buy or subscribe for any securities in Actinium Pharmaceuticals, Inc. ("ATNM" or the "Company") nor shall it or any part of it form the basis of or be relied on in connection with any contract or commitment whatsoever. No reliance may be placed for any purpose whatsoever on the information contained in these slides or presentation and/or opinions therein. These slides and the presentation are exempt from the general restriction (in section 21 of the Act) on the communication of invitations or inducements to engage in investment activity on the grounds that it is made to: (a) persons who have professional experience in matters relating to investments who fall within Article 19(1) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "Order"); or (b) high net worth entities and other persons to whom it may otherwise lawfully be communicated, falling within Article 49(1) of the Order (all such persons together being referred to as "relevant persons"). Any person who is not a relevant person should not rely on this presentation or any of its contents and all persons (whether relevant persons or otherwise) are recommended to seek their own independent financial advice from a person authorized for the purposes of the Act before engaging in any investment activity involving the Company's securities.

Safe Harbor Statement

This presentation contains "forward-looking statements" within the meaning of the "safe-harbor" provisions of the private securities litigation reform act of 1995. Investors and prospective investors are cautioned that any such forward-looking statements are not guarantees of future performance and involve risks and uncertainties, and that actual results may differ than those projected. Such forward-looking information and statements are based on the current estimates and projections of the Company or assumptions based on information currently available to the Company. Such statements involve known and unknown risks, including but not limited to those risks identified in our filings with the Securities and Exchange Commission, uncertainties and other factors that could cause the actual results of the Company to differ materially from the results expressed or implied by such statements, including changes from anticipated levels of revenues, future national or regional economic and competitive conditions, difficulties in developing the Company's technology platforms, retaining and expanding the Company's customer base, fluctuations in consumer spending on the Company's products and other factors. Accordingly, although the Company believes that the expectations reflected in such forward-looking statements are reasonable, there can be no assurance that such expectations will prove to be correct. The Company has no obligation to update the forward-looking information contained in this presentation. Any forward-looking statements or information in this presentation speak only as at the date of this presentation.

Company Description

A public biotechnology company using world class science to develop and commercialize antibody directed radioisotopes to target unmet medical needs in cancer.

Company Overview

- ✓ Two development stage targeted antibodies:
  - ✓ Iomab-B expected to enter its single pivotal Phase III study mid-2015 as a conditioning agent in elderly relapsed/refractory Acute Myeloid Leukemia (AML) patients prior to bone marrow transplant (BMT)
  - ✓ Actimab-A in ongoing Phase I/II study in elderly, untreated AML patients
- ✓ We believe as potential breakthrough therapies, Iomab-B and Actimab-A may achieve successful market penetration given the strong KOL support and significant unmet medical need
- ✓ Proprietary Alpha Particle Immunotherapy (APIT) platform poised to deliver multiple cancer drugs with blockbuster potential
- ✓ Expert team possessing the vision and desire to enhance shareholder value
- ✓ Positioned to benefit from increased market recognition of targeted payload therapies and an initial high-value, niche product model

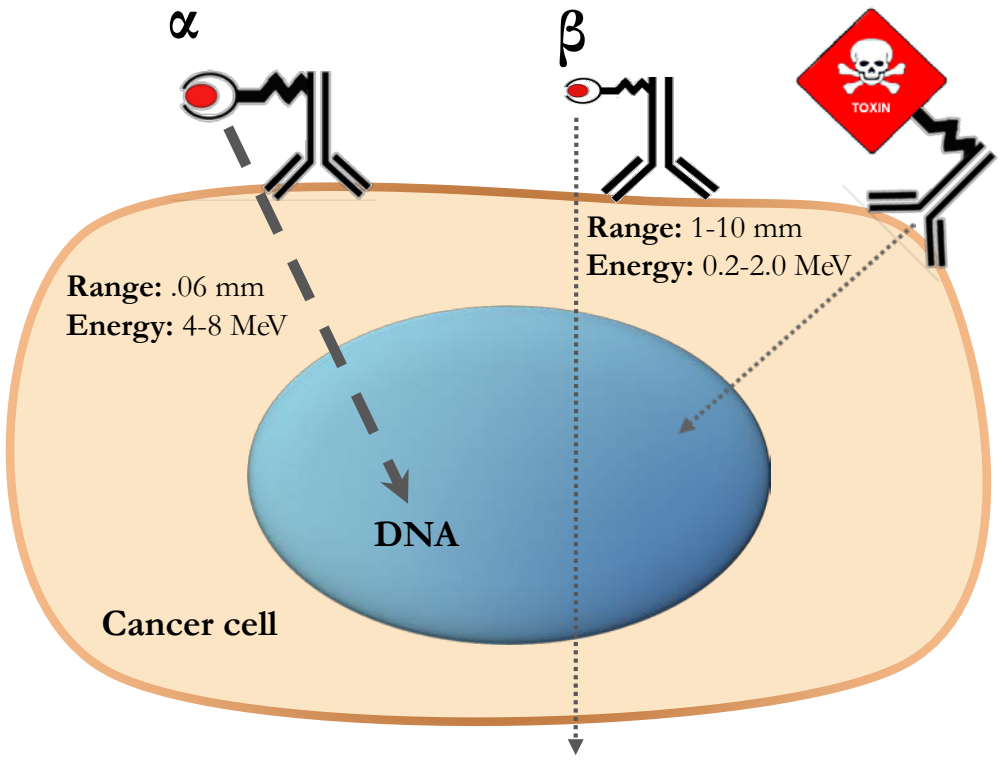
Antibody Approaches Targeting Cancer Cells

Cancer Treatment Options

Opportunity		Radiation		Monoclonal Antibodies (mAbs)
Treatment %	**50%**	♦ External radiation majority treatment ♦ Internal radiation has mostly no IP	**<10%**	♦ Always a pharmaceutical ♦ Strong IP protection
Pharmaceutical Revenue %	**<3%**	♦ Commoditized	**~30%**	♦ Mostly proprietary

Payload Approaches

	Company
α	**α - emitters**
	Actinium Pharmaceuticals
	Algeta - Acquired by Bayer
β	**β - emitters**
	GlaxoSmithKline
	Spectrum Pharmaceuticals
	Immunomedics
	Peregrine Pharmaceuticals
	Toxins
	Pfizer
	Seattle Genetics
	Immunogen
	Celldex Therapeutics
	Progenics



Product Pipeline

Drug	Target	Indication	Development Status: R & D	Preclin.	Phase 1	Phase 2	Phase 3
Iomab-B	CD45	BMT[1] (Bone Marrow Transplant)	→	→	→	→	→
Bismab-A[2]	CD33	AML	→	→	→	→	
Actimab-A (s.d.)	CD33	AML	→	→	→		
Actimab-A (f.d.)	CD33	AML	→	→	→		
Third Program	Undisclosed	Undisclosed	→	→			
Actimab-C	Undisclosed	Colon Cancer	→	→			
Actimab-P	Undisclosed	Prostate Cancer	→	→			
Actimab-Br	Undisclosed	Brain Cancer	→	→			

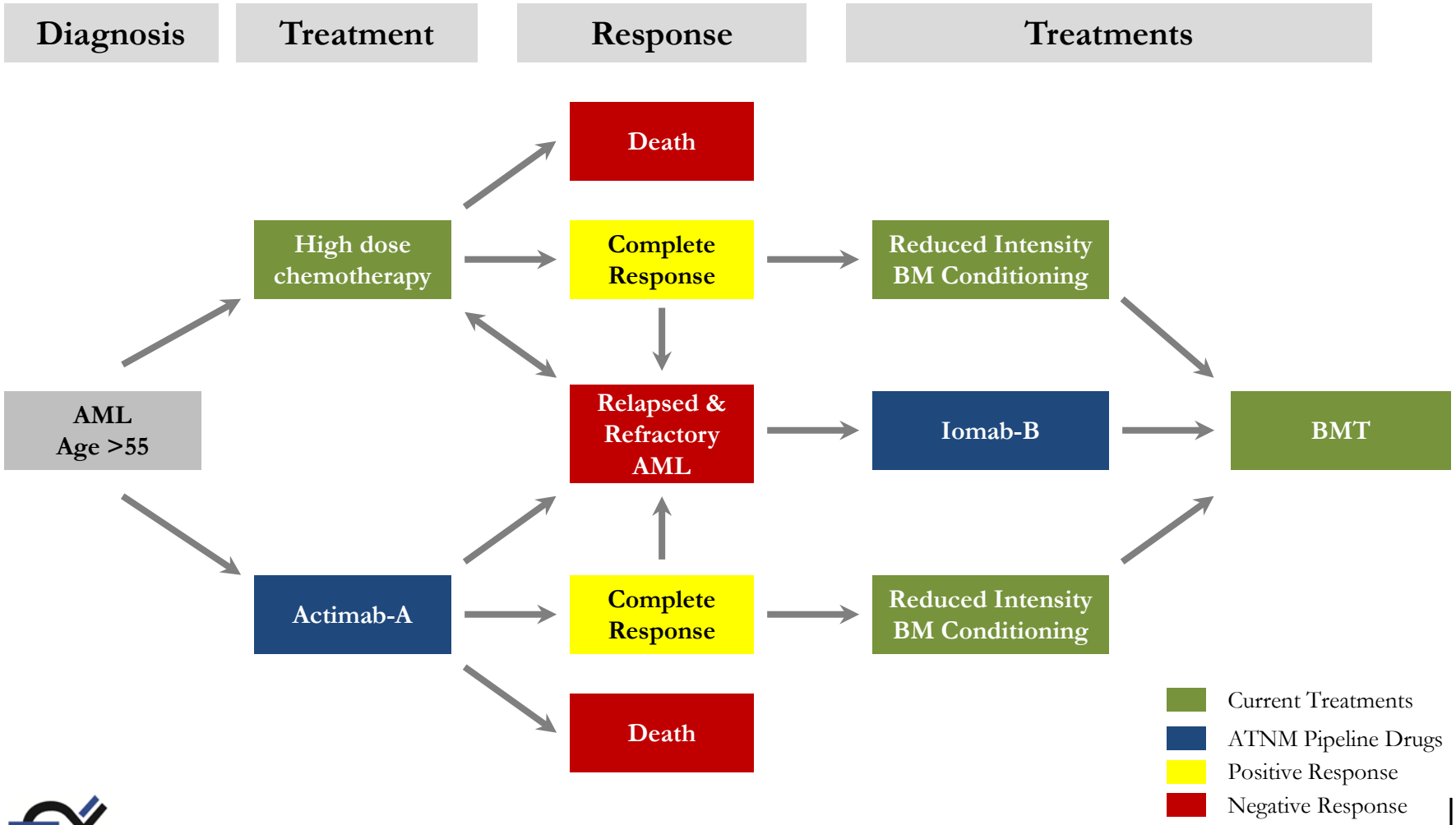
s.d. – single dose
f.d. – fractionated dose

HuM 195 – Alpha Program

1. BMT or HSCT (Hematopoietic Stem Cell Transplantation) is a procedure in which cells capable of reconstituting normal bone marrow function are transplanted to a patient. Iomab-B is expected to enter a Phase III study in mid-2015 for hematopoietic stem cell transplantation in older subjects with active refractory AML.
2. ATNM has decided to discontinue development of Bismab-A at this time due to supply, logistics and cost reasons. Actimab-A is the second generation drug of Bismab-A.

Market Positioning for Iomab-B and Actimab-A

ATNM products target both treatment stages for AML patients over 55 years of age



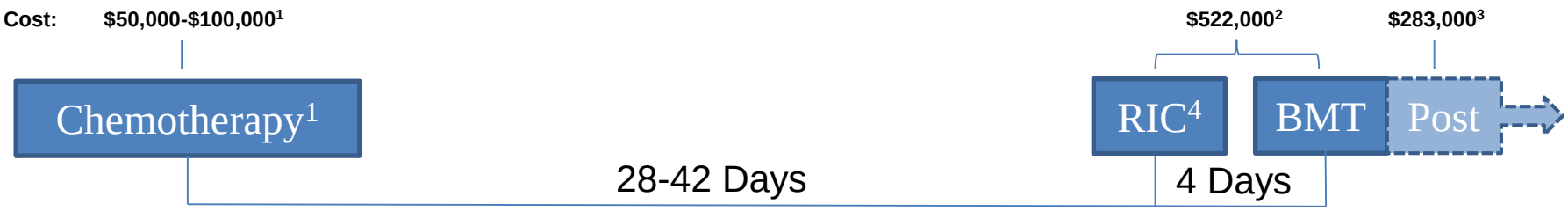
Iomab-B Overview

- Blockbuster therapy potential for BMT conditioning especially for elderly, very sick patients with few curative treatment options
  - Initial intended indication is relapsed, refractory AML patients over 55 years old
- Compelling clinical data from proof of concept trial in elderly refractory and relapsed Acute Myeloid Leukemia
  - Large safety database: experience with 300+ patients in 5 Phase I and II clinical trials
  - Antibody in-licensed from Fred Hutchinson Cancer Research Center
  - 7 ongoing physician trials with BC8 mAb, the antibody used in Iomab-B, for other indications
- Safety and efficacy data to date indicate that Iomab-B can potentially disrupt the field of BMT
- Trials results and implied medical benefits have attracted significant interest and involvement from leading physicians

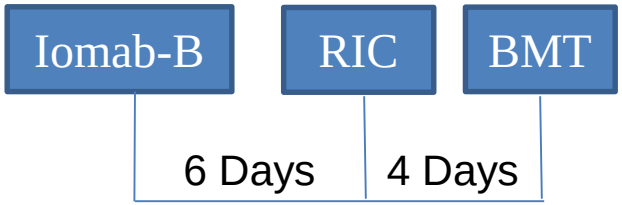
Iomab-B Treatment

Potentially faster pathway to a bone marrow transplant with fewer side effects

Current BMT Conditioning Approach



Iomab-B Regimen



1. Chemotherapy include MEC, FLAG-IDA, high-dose cytarabine, among others. Cost is for one or two rounds of inpatient chemotherapy treatment.
2. Transplant procedural costs include 30 day pre-procedure costs (RIC, donor cell procurement, fees, hospital costs, drug costs) and excludes chemotherapy.
3. Includes various associated costs during 180 days post-procedure, including immunosuppressive therapy.
4. RIC, reduced intensity conditioning, is a lower-dose (and therefore less toxic) treatment regimen which helps to facilitate BMT, particularly in older patients.

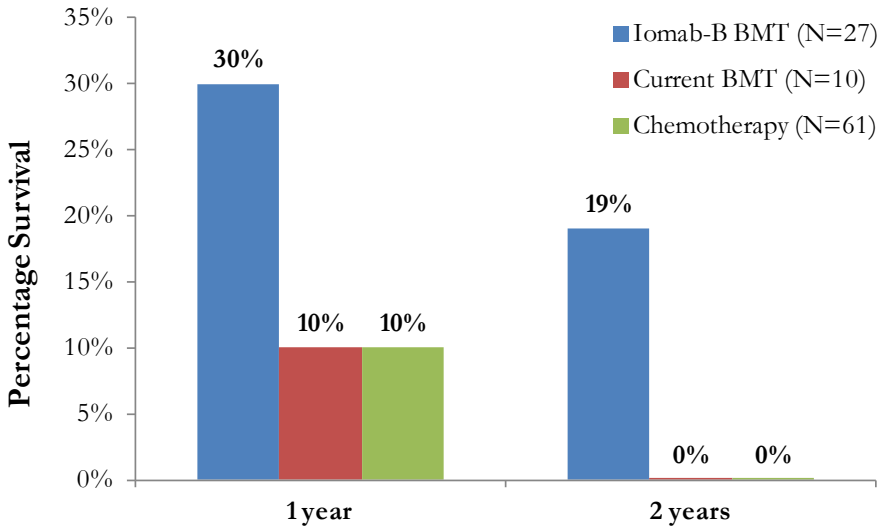
Sources: Milliman U.S. Organ and Tissue Transplant Cost Estimates and Discussion; Overall Economic Burden of Total Treatment Costs in AML throughout the Course of the Disease (Mahmoud); Company estimates.

Iomab-B Phase I/II Results

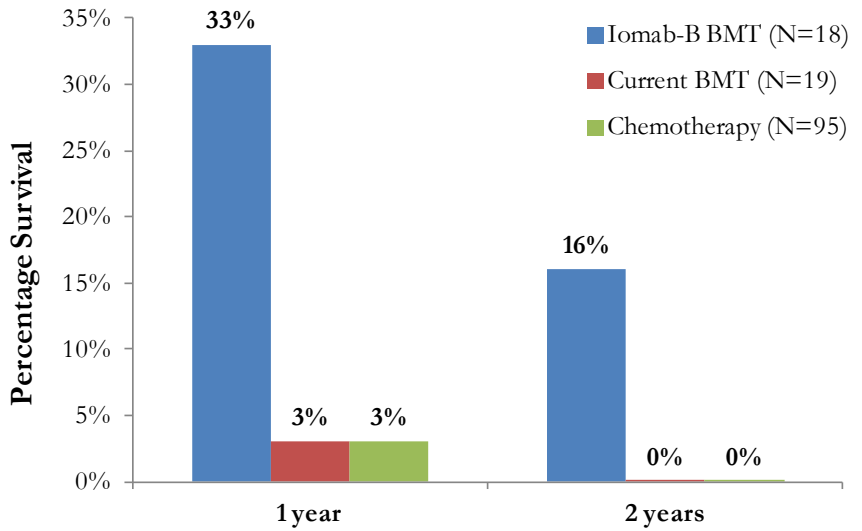
Compelling clinical results enable pivotal Phase III trial

- Non-relapse mortality (NRM):
  - Day 100: 10%
  - Overall: 20% (NRM = 46% in comparable patients with myeloablative conditioning)
- Transplant related mortality: 14% (same as reduced intensity conditioning)
- Complete response rate: 100%
- Engraftment by day 28: 100%

All relapsed/refractory AML patients over 50



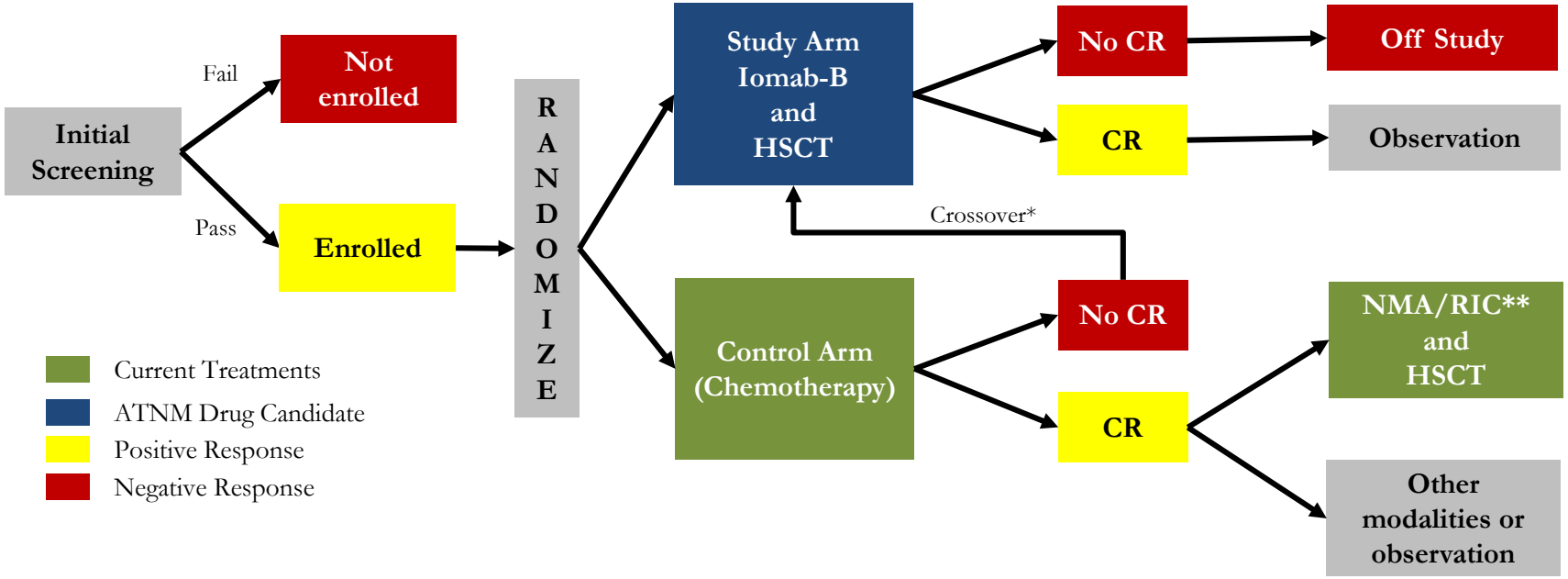
Rel/ref AML patients over 50 w/ poor cytogenetics



N = Number of patients treated
Iomab-B results from FHCRC clinical trials; Current BMT and Chemotherapy results from MD Anderson outcomes analysis
Sources: Blood 2009 114:5444-5453; unpublished FHCRC data

Iomab-B Pivotal Phase III Trial Design

- FDA has identified the following design features of the Phase III clinical trial as generally acceptable with approval dependent on trial results[1]:
  - Single pivotal study, pending trial results
  - Patient population: refractory AML patients over the age of 55[2]
  - Trial arms: study arm and control arm with physician's choice of conventional care with curative intent
  - Trial size: 150 patients total, 75 patients per arm



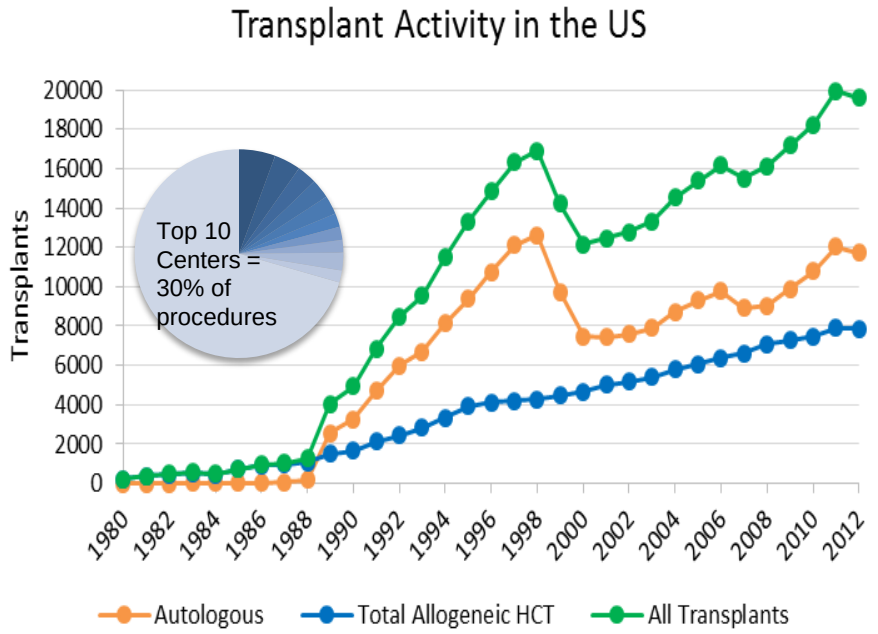
*Control arm subjects with no CR are offered crossover to Iomab-B for ethical reasons.
**Nonmyeloablative Conditioning/Reduced Intensity Conditioning.

1. Based on the End of Phase II meeting and subsequent communications with the FDA.
2. Refractory is defined as either primary failure to achieve a complete remission after 2 cycles of induction therapy; relapsed after <6 months in complete remission; second or higher relapse; or relapsed disease not responding to intensive salvage therapy

Bone Marrow Transplant Market Opportunity

Currently no approved treatments for Iomab-B targeted patients implies blockbuster potential

HSCT Fastest Growing Hospital Procedure



Indication*	2014	2015E	2016E	2017E	2018E	Market Potential
AML				III	Anticipated Approval / Anticipated Launch	$750
MDS			II	III		$300
ALL			II	III		$250
NHL/HL			I	II	III	$1,500
MM			I	II	III	$1,300
Total						$4,100

Sources: Healthcare Cost and Utilization Project, AHRQ; US Dept. of HHS; CIBMTR (Preliminary review of information submitted to the CIBMTR)

Phase I and Phase II represent physician trials at Fred Hutchison Cancer Research Center. Phase III trials represent ATNM sponsorship. Timelines are projections and the Company makes no representation as to their ability to meet these timelines.

Sources: "Current Uses and Outcomes of Hematopoietic Stem Cell Transplantation 2010", CIMBTR Summary Slides; "Trade, foreign policy, diplomacy and health: Pharmaceutical Industry", WHO website, http://www.who.int/trade/glossry/story073/en/; "Hematopoietic stem cell transplantation A Global Perspective", NIH Public Access, JAMA 2010; Company Estimates

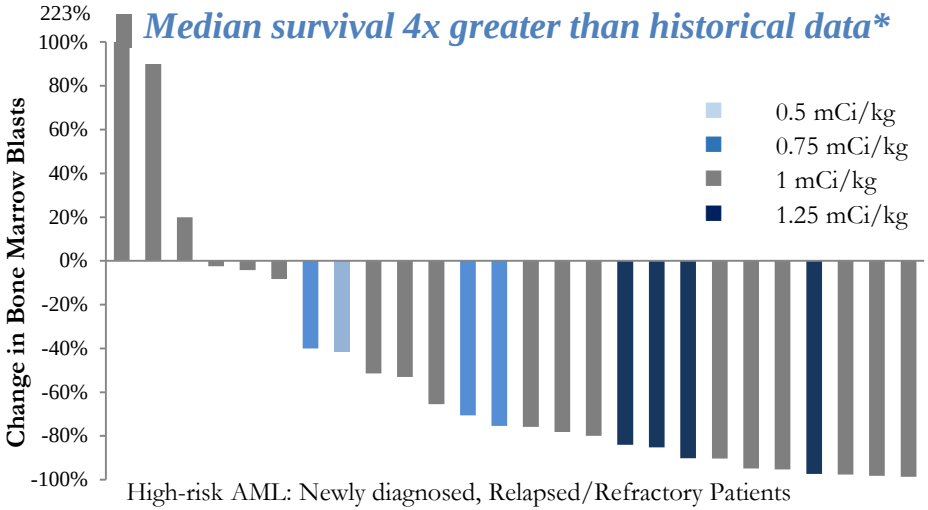
HuM 195-Alpha Platform

Second generation Actimab-A 500x more potent than Bismab-A

	1st Generation Bismab-A Profile	2nd Generation Actimab-A Advantages
Target:	♦ AML	♦ AML
Effectiveness:	♦ Proof of concept in humans	+ 500x more potent than Bismab-A
Clinical Stage:	♦ Promising results in Phase II	♦ Currently in a Phase I/II Trial
Supply Chain:	♦ Complex, high COGS	+ Simple, 10x lower COGS
Ease of Use:	♦ Complex on site preparation	+ Central manufacturing

Bismab-A + Cytoreduction

Median survival 4x greater than historical data*



High-risk AML: Newly diagnosed, Relapsed/Refractory Patients

Bismab-A vs. Actimab-A Monotherapy

Actimab-A efficacy superior to Bismab-A

Parameter	Bismab-A	Actimab-A
Peripheral blast elimination	27%	67%
Bone marrow blasts decrease ≥50%	28%	53%
Bone marrow blasts ≤5% post treatment	0%	20%

Relapsed/Refractory Patients only

* Median survival 7.6 mo. vs 1.7 mo. historically for untreated. Each bar equals an individual patient response.

Sources: Clin Cancer Res. 2010, 16(21):5303-5311; Jurcic JG et al. Blood (ASH Meeting Abstracts) 2012, 118:768; Company documents

Actimab-A Multicenter Phase I/II Study

- Phase I/II clinical trial ongoing at world-class treatment centers
  - Memorial Sloan Kettering, MD Anderson, Johns Hopkins, Columbia University, University of Pennsylvania, Fred Hutchinson, Baylor Sammons Cancer Center
- New protocol sets lower standard than first Phase I trial
  - Treating newly diagnosed patients;
  - Introducing cytoreduction which reduces the number of cancer cells
  - Fractionated dosing at day one and seven
  - New patient population likely to respond better to treatment based on medically accepted criteria
  - No toxicity has been observed to date outside of blood cells at doses expected to be clinically effective

Why Actimab-A Should Play Critical Role in Elderly AML

- "Low-Intensity Hypothesis"
  - In patients 65+ intensive chemotherapy is associated with high mortality rate; 2 month mortality ~ 22%[1]
  - Low intensity treatments are better at extending overall survival in elderly patients even without high CR rates[1]
  - Postulates that AML in elderly patients is closer to MDS which informs this line of reasoning[2]
  - FDA guiding toward overall survival endpoints for frontline treatment of older AML[3]
- Actimab-A is a low intensity product candidate for older AML patients
  - Favorable safety profile in clinical trials to date may allow for use in most patients, unlike high-dose chemotherapy
  - Results to date are supportive of the "Low-Intensity Hypothesis"

Based on the favorable safety profile in clinical trials to date, Actimab-A has the potential to be a low intensity therapy for older AML patients

1. Report from 'Great Debates & Updates in Hematology' Conference, Oncology Times 25 January 2009, Volume 31 Issue 2 pp 22-24; Hagop Kantarjian, MD
2. Medscape Oncology CME: Current Treatment of Myelodysplastic Syndrome, 26 June 2008
3. FDA Guidance for Industry: Clinical Trial Endpoints for the Approval of Cancer Drugs and Biologics, 2007

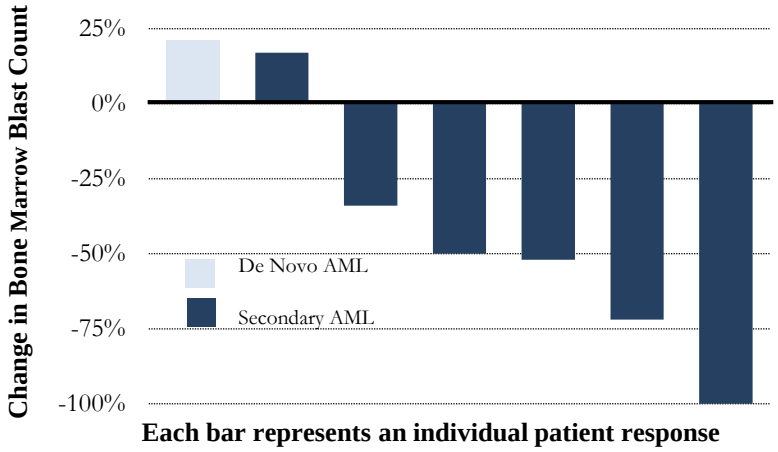
Actimab-A Phase I/II Interim Data Highlights

Meaningful overall survival benefit, no treatment mortality, lowered blast count

- Patients evaluated thus far were high-risk, elderly
  - All nine were greater than 70 years of age (mean: 76, range: 73-81)
  - All but two had secondary AML (antecedent MDS); five had prior treatment with HMA or allogeneic hematopoietic cell transplantation
  - All had intermediate or poor cytogenetics
- No significant drug related safety issues thus far; MTD yet to be established

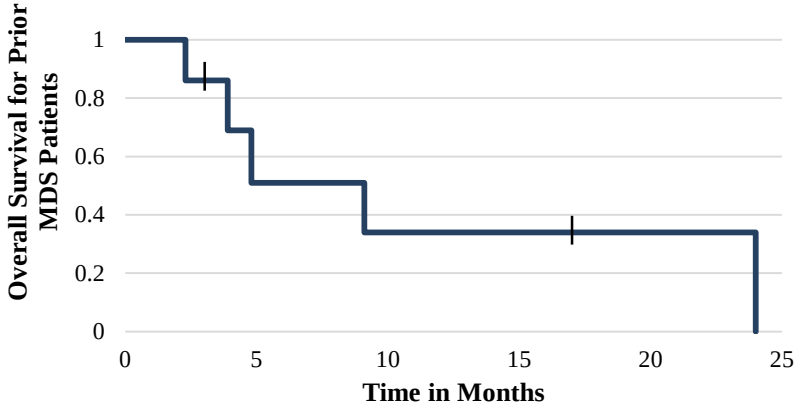
Clear antileukemic effect in most patients

- 5 of 7 (71%) evaluable patients had bone marrow blast reductions
- 61% mean reduction in blast count (range 34%-100%)



Improved median survival greatest for secondary AML

- 9.1 month median overall survival in 7 secondary AML patients (range 2.3-24 months)
- Compares favorably to 2-5 month expected survival in secondary AML



Sources: Phase I Trial of Targeted Alpha-Particle Therapy Using Actinium-225 (^{225}Ac)-Lintuzumab (Anti-CD33) in Combination with Low-Dose Cytarabine (LDAC) for Older Patients with Untreated Acute Myeloid Leukemia (AML), 56th ASH Annual Meeting and Exposition. Abstract #5293;
Oran B, and Weisdorf DJ, Survival for older patients with acute myeloid leukemia: a population-based study. Haematologica 2012; 97(12):1916-1924.
N Okuyama et al, Prognosis of acute myeloid leukemia transformed from myelodysplastic syndromes: A multicenter retrospective study, Leukemia Research 37 (2013) 862–867.

Market Potential of Product Pipeline

#	Cancer Indication	Cases/Yr. in Target Market[1]	Target Population	Worldwide Market Potential ($mm)[2]
1st	**Bone Marrow Transplant (BMT)**	**48,000**	**48,000**	**$4,100**
2nd	**Acute Myeloid Leukemia (AML)**	**41,600**	**24,000**	**$920**
3rd	Glioblastoma Multiforme (GBM)	26,500	26,500	$1,100
4th	Prostate Cancer (metastatic)	591,000	298,455	$5,959
5th	Metastatic Colorectal Cancer	536,000	241,200	$4,824

1. Target market includes USA, EU and Japan
2. Market Potential calculated based on assumption that Actinium products for solid cancer indications will be priced at $20,000 per treatment; BMT preparation product will be priced at $85,000 per treatment; AML product will be priced at $60,000 per treatment; and GBM product will be priced at $60,000 per treatment. Estimates based on independent third party research and adjusted for lower pricing in non-US markets.

BMT (Iomab-B)

- The $1.3 billion Bone Marrow Transplant (BMT) market in the US is largely unaddressed by novel pharmaceutical drug companies
- BMT is the fastest growing hospital procedure in the US
  - ~20,000 of the ~60,000 BMTs in 2010 were performed in the US
- Sustained growth in patients treated over 55 yrs old
  - 8% in 2000 to 21% in 2005 and 27% in 2007

AML (Actimab-A)

- Acute Myeloid Leukemia is the deadliest form of leukemia
  - 55% of AML patients are over 65 years old
  - Disease is worse in older people
  - Insufficient treatment options are available in the marketplace
  - Treatment kills as many patients as it helps due to toxicity

Source: "Current Uses and Outcomes of Hematopoietic Stem Cell Transplantation 2010", CIBMTR Summary Slides; Company estimates

Company Overview

- ✓ Two development stage targeted antibodies:
  - ✓ Iomab-B expected to enter its single pivotal Phase III study mid-2015 as a conditioning agent in elderly relapsed/refractory Acute Myeloid Leukemia (AML) patients prior to bone marrow transplant (BMT)
  - ✓ Actimab-A in ongoing Phase I/II study in elderly, untreated AML patients
- ✓ We believe as potential breakthrough therapies, Iomab-B and Actimab-A may achieve successful market penetration given the strong KOL support and significant unmet medical need.
- ✓ Proprietary Alpha Particle Immunotherapy (APIT) platform poised to deliver multiple cancer drugs with blockbuster potential
- ✓ Expert team possessing the vision and desire to enhance shareholder value
- ✓ Positioned to benefit from increased market recognition of targeted payload therapies and an initial high-value, niche product model

Actinium Pharmaceuticals, Inc.

April 2015