MACROGENICS®

Developing

Breakthrough Biologics,

Life-changing Medicines™

Corporate Presentation

May 2020



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Investigational Agents

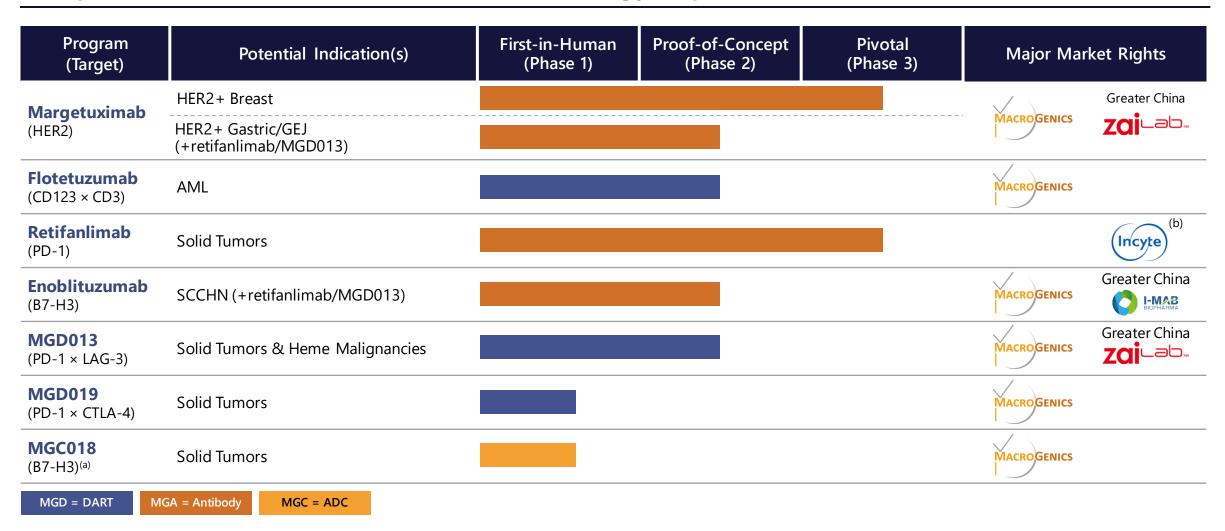
All Company product candidates described or mentioned herein are investigational and have not yet been approved for marketing by any regulatory authority.

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Building a Leadership Position in Immuno-Oncology

Late-stage immuno-oncology company	 December 2020 PDUFA goal date for most advanced product candidate Three additional ongoing or anticipated registration-directed studies
Proprietary platform technologies	 Bispecific DART® platform technology that exploits multiple mechanisms Fc-engineering to enhance innate and adaptive immunity
Deep and differentiated pipeline	 Unique immune-based mechanisms Retain major market rights for 6 of 7 clinical assets
Funded to execute on plan	 \$171M cash, cash equivalents and marketable securities at 3/31/20 Multiple 2020 inflection points

Deep and Differentiated Immuno-Oncology Pipeline



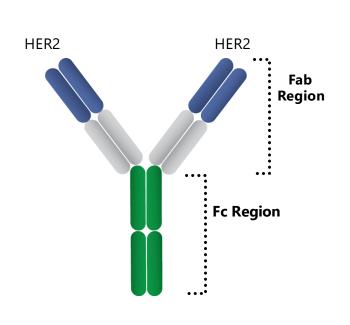
⁽a) MGC018 is an antibody-drug conjugate (ADC) based on a duocarmycin payload with cleavable peptide linker that was licensed from Synthon Biopharmaceuticals.

⁽b) MacroGenics retains rights to develop its pipeline assets in combination w/retifanlimab (MGA012) and to manufacture a portion of global clinical and commercial supply needs of retifanlimab.

All Company product candidates described or mentioned herein are investigational and have not yet been approved for marketing by any regulatory authority.

Margetuximab: Anti-HER2 mAb Engineered to Enhance Activity of Immune System

December 2020 PDUFA goal date for BLA for HER2+ metastatic breast cancer (mBC)



Function/ MoA

- Inhibits HER2 signaling (similar to trastuzumab)
- Fc region engineered to engage innate and adaptive immunity as mediators of anti-tumor activity

Pivotal Clinical Studies

- Ph. 3 SOPHIA study versus trastuzumab in HER2+ mBC
- Ph. 2/3 MAHOGANY study w/checkpoint inhibitor in HER2+ gastric cancer

2020 Anticipated Milestones

- BLA for HER2+ mBC: ODAC expected (2H); PDUFA goal date (December 18, 2020)
- Final SOPHIA OS analysis (N=385) (2H)
- Obtain initial data from MAHOGANY Module A

Margetuximab is investigational and has not yet been approved for marketing by any regulatory authority

Phase 3 SOPHIA Study Comparing Margetuximab to Trastuzumab

Designed to support registration in 3rd/4th line HER2+ metastatic breast cancer



HER2+ mBC 1-3 Prior Treatment Lines in Metastatic Setting

(including prior treatment with multiple other anti-HER2 agents)^(a)

Investigator's Choice of Chemotherapy

(capecitabine, eribulin, gemcitabine or vinorelbine)

Arm 1 margetuximab + chemotherapy 1:1 Randomization (N = 536) Arm 2 trastuzumab + chemotherapy

- Sequential primary endpoints: PFS and OS
- Patients carrying CD16A (FcγRIIIa) 158F allele were pre-specified exploratory subpopulation

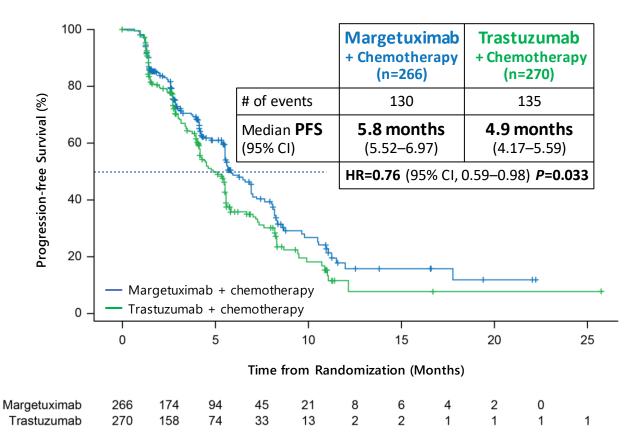
PFS (N=257, HR=0.67, α =0.05, power=90%) OS (N=385, HR=0.75, α =0.05, power=80%)

(a) All study patients had previously received trastuzumab and pertuzumab, and approximately 90% had previously received ado-trastuzumab emtansine.

Primary PFS Endpoint: Margetuximab Demonstrated Superiority to Trastuzumab

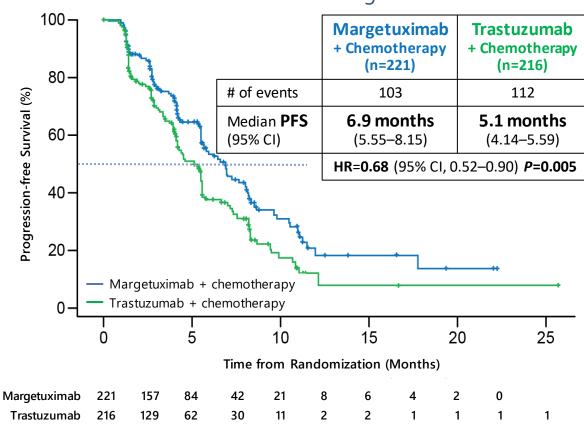
PFS Primary Endpoint (ITT Population):

24% Risk Reduction of Disease Progression



Pre-specified Exploratory Subpopulation (CD16A-158F Carriers):

32% Risk Reduction of Disease Progression

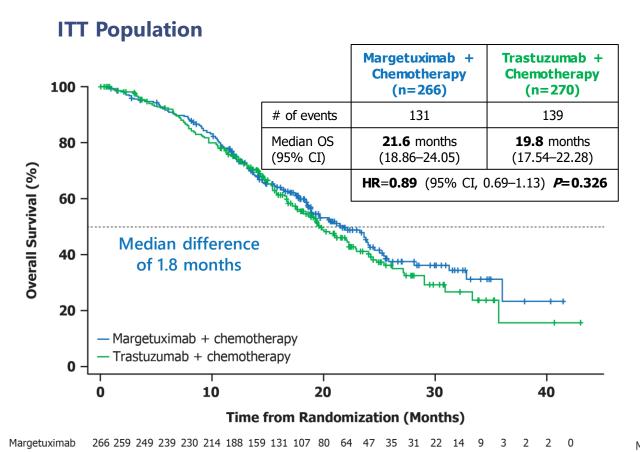


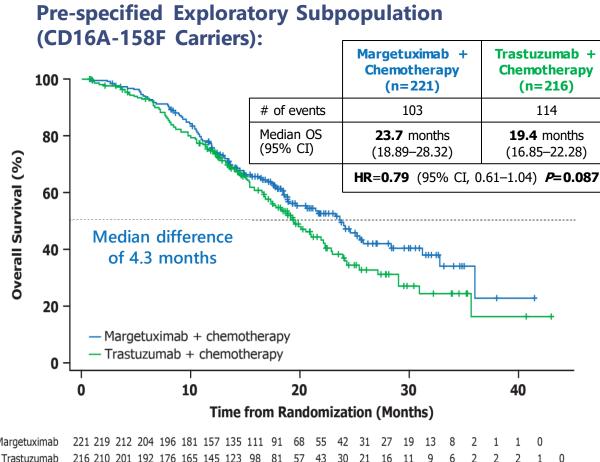
October 2018 data cut-off after 265 PFS events in ITT population. CI=confidence interval. ITT=Intent to Treat population: N=536. CD16A 158F Carriers=FF or FV Genotype. HR=Hazard Ratio (ITT by stratified Cox model; F Carriers by unstratified Cox model).

Rugo, et al., ASCO 2019

Second Interim Overall Survival Analysis: Trend Favored Margetuximab

Final analysis expected 2H20





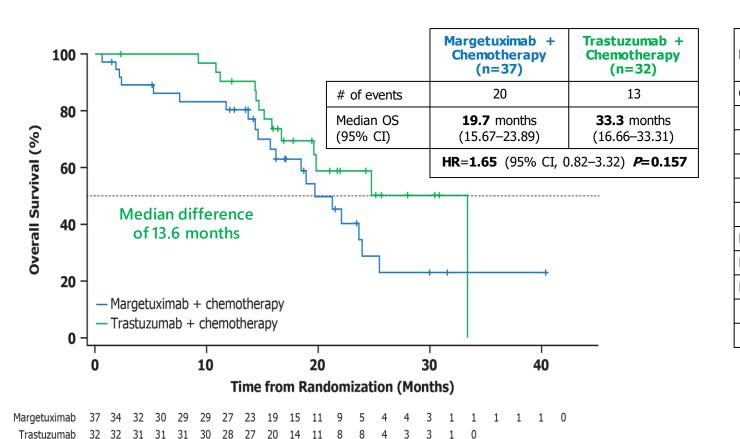
September 2019 data cut-off after 270 events in ITT population. Median follow-up: 15.6 months. ITT=Intent to Treat population: N=536. CD16A 158F Carriers=FF or FV Genotype. CI=confidence interval. HR=Hazard Ratio (ITT by stratified Cox model; F Carriers by unstratified Cox model).

270 260 246 236 218 205 183 160 126 102 74 57 43 30 22 16 10 6

Rugo, et al., SABCS 2019

Pre-specified Exploratory OS in CD16A-158 VV Homozygotes

VV subpopulation represents 33 events (270 events in ITT population)



Unbalanced patient characteristics

Baseline Characteristic	Margetuximab + Chemotherapy (n=37)	Trastuzumab + Chemotherapy (n=32)		
Cancer disease history				
Brain, n (%)	8 (22%)	3 (9%)		
Breast, n (%)	10 (27%)	5 (16%)		
Liver, n (%)	16 (43%)	10 (31%)		
Lung, n (%)	11 (30%)	13 (41%)		
Lymph node, n (%)	21 (57%)	16 (50%)		
HER2 IHC 3+, n (%)	19 (51%)	18 (56%)		
Hormone receptor +, n (%)	23 (62%)	18 (56%)		
ECOG PS 1, n (%)	14 (38%)	16 (50%)		
>60 years of age, n (%)	16 (43%)	5 (16%)		
>2 prior metastatic lines of therapy, n (%)	15 (41%)	9 (28%)		

Less favorable

September 2019 data cut-off after 270 events in ITT population. Median follow-up: 15.6 months. CI=confidence interval. HR=Hazard Ratio (by unstratified Cox model).

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Rugo, et al., SABCS 2019

Overall Safety Profiles Similar

Adverse Events (AE)

		ximab + py (n=264)	Trastuzumab + Chemotherapy (n=266)		
Any grade AE, n (%)	260 (98.5)		261 (98.1)		
Any margetuximab or trastuzumab-related AE, n (%)	160 ((60.6)	132 ((49.6)	
Grade ≥3 AE , n (%)	142 ((53.8)	140 ((52.6)	
Grade ≥3 margetuximab or trastuzumab-related AE, n (%)	34 (12.9)		22 (8.3)		
Any SAE, n (%)	43 (16.3)	49 (18.4)		
Any margetuximab or trastuzumab-related SAE, n (%)	5 (1.9)	4 (1.5)		
AE leading to treatment ^a discontinuation, n (%)	8 (3.0)	7 (2.6)		
AEs resulting in death, ^b n (%)	3 (3 (1.1) ^c).8) ^d	
AEs of special interest, n (%)	All Grade	Grade ≥3	All Grade	Grade ≥3	
Infusion-related reaction (IRR)	35 (13.3)	4 (1.5)	9 (3.4)	0	
Discontinuation due to IRRs, n (%)	2 (0.6)	0	0	0	
LV dysfunction leading to dose delay or discontinuation, n (%)	4 (1.5)	0	6 (2.3)	0	

Safety Population (randomized patients who received any study treatment): N=530. April 2019 cut-off.

(a) Including both anti-HER2 study therapy and chemotherapy. (b) No AEs resulting in death were considered related to anti-HER2 study therapy. (c) Pneumonia (n=2), pneumonia aspiration (n=1). (d) Pneumonia (n=1), acute kidney injury (n=1). LV=left ventricular; SAE=serious AE.

Margetuximab's Potential Role in Treatment of HER2+ mBC

Need remains for additional therapies in later lines

Patients will progress on other HER2-directed therapies

PFS improvement vs. trastuzumab in clinical study

Superiority in head-to-head trial

Flexibility

Ability to tailor treatment by selecting among four different chemotherapies

Familiarity

Side effect profile is well known and manageable

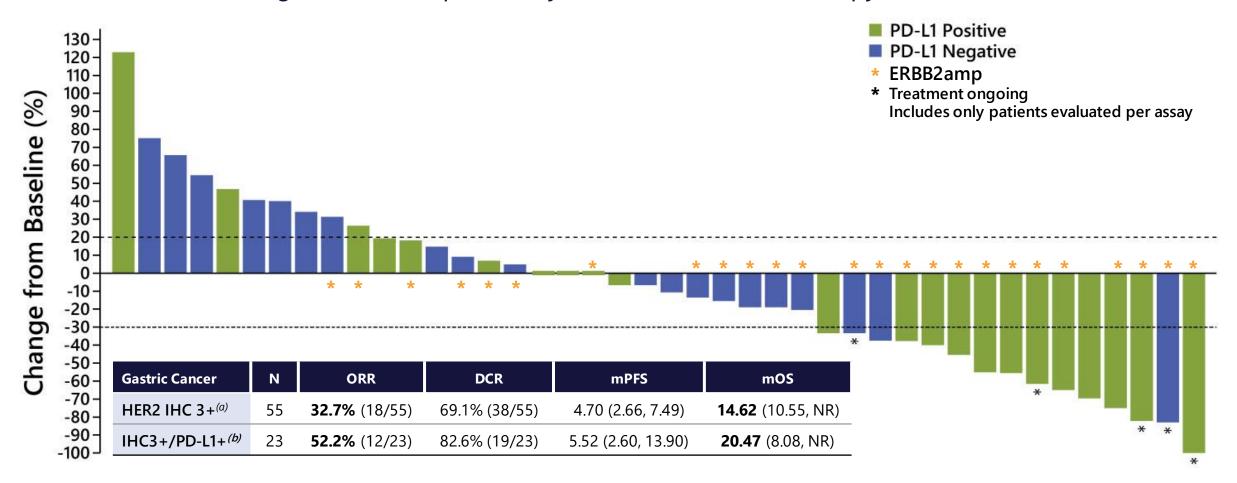
CD16A exploratory analysis

85% of population are F carriers

Margetuximab is investigational and has not yet been approved for marketing by any regulatory authority

Promising Activity in Advanced Gastric Cancer Patients in Phase 2 Study

33% ORR in HER2 3+ gastric cancer previously treated with chemotherapy and trastuzumab



Data cut-off July 10, 2019. Includes patients who received ≥1 margetuximab and pembrolizumab dose in expansion phase, and had baseline measurable disease and ≥1 post-baseline disease assessment.

(a) Immunohistochemistry (IHC) test gives score of 0 to 3+ that measures amount of HER2 receptor protein on surface of cells in cancer tissue sample. Score of 0 to 1+ is called "HER2 negative", score of 2+ is called "borderline", score of 3+ is called "HER2 positive."

(b) "PD-L1 Positive" reflects Combined Positive Score (per standard FDA approved assay) ≥1% (PD-L1 tested on archival tissue by IHC; clone 22C3 pharmDx).

Catenacci, et al., ESMO 2019

Gastric Cancer as Follow-on Indication

Data from 2L margetuximab + anti-PD-1 mAb presents opportunity to advance to 1L

HER2+ gastric cancer benchmarks

	1st Line		3 rd Line				
	SOC	SOC	Ongoing	Phase 2 Study	Failed	Ongoing Study	
Agent	Trastuzumab +	Ramucirumab	Margetuximab	Margetuximab + Pembrolizumab (c)		DC 0201(a)	
(Study)			IHC 3+	IHC 3+/PD-L1+	(KEYNOTE-61) PD-L1+	DS-8201 ^(e)	
ORR	47%	28%	33% 52%		15.8%	43%	
Median PFS	6.7 mos.	4.4 mos.	4.7 mos.	5.5 mos.	1.5 mos.	5.6 mos.	
Median OS	13.1 mos.	9.6 mos.	14.6 mos.	20.5 mos.	9.1 mos.	12.8 mos.	
≥ Grade 3 TRAEs	68%	Overall: N/A 41% Neutropenia 15% Hypertension 12% Fatigue	20%		14%	48%	
Gastric/GEJ Patient Mix	80/20%	80/20%	100%/0%		70%/30%	80%/20%	

SOC = Standard of Care

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⁽a) Data from Herceptin package insert; Bang, et al., Lancet, 2010;

⁽b) Data from Cyramza package insert; Wilkes, et al., Lancet Oncology, 2014;

⁽c) Data presented at ESMO 2019; Grade 3 TRAE includes all GC and GEJ patients.

⁽c) Data presented at ESMO 2019; Grade 3 TRAE includes all GC and GEJ patients.

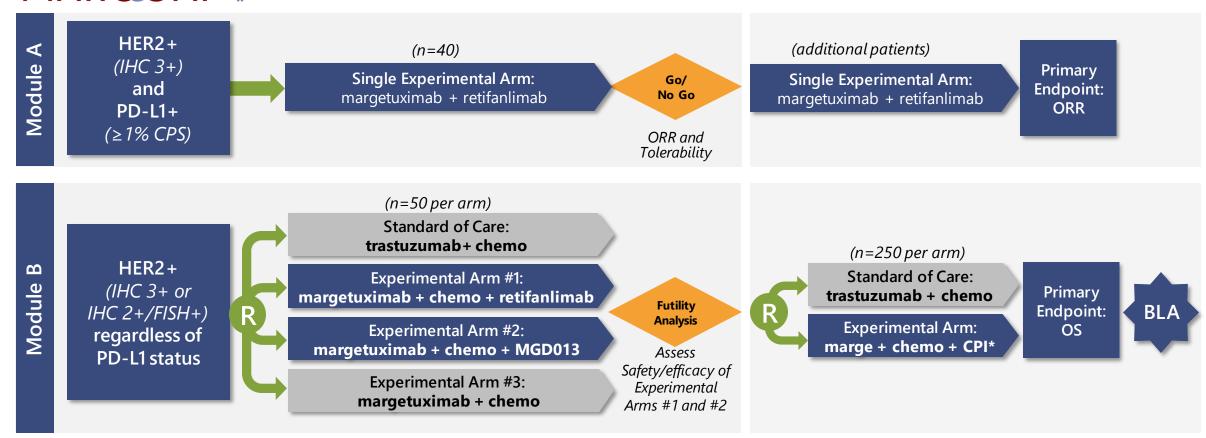
⁽d) Shitara, et al., 2018, Lancet;

⁽e) Shitara, et al., 2019, Lancet Oncol.

MAHOGANY Phase 2/3 Study: Registration Path in 1L Gastric & GEJ Cancer

Module A has potential for U.S Accelerated Approval of chemotherapy-free regimen

MAHOGANY

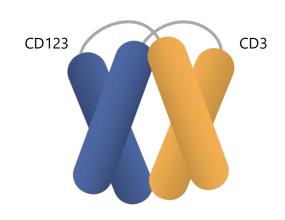


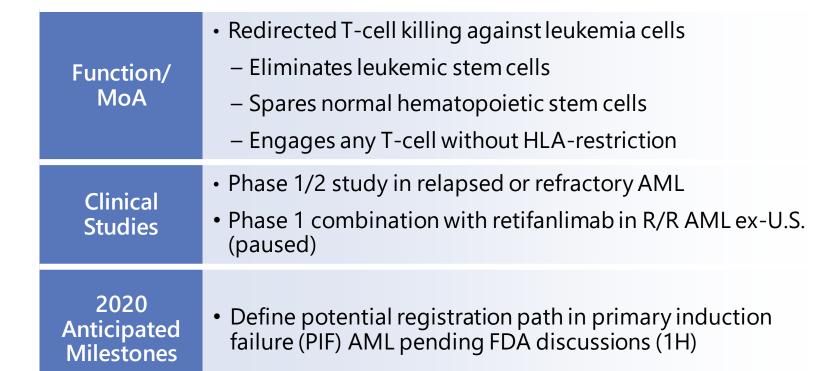
MAHOGANY (<u>Ma</u>rgetuximab in <u>H</u>ER2-p<u>o</u>sitive <u>Ga</u>stric Cancer

^{*} Pending chronic tox study (if regimen with MGD013 is selected).

Flotetuzumab: CD123 × CD3 DART Molecule

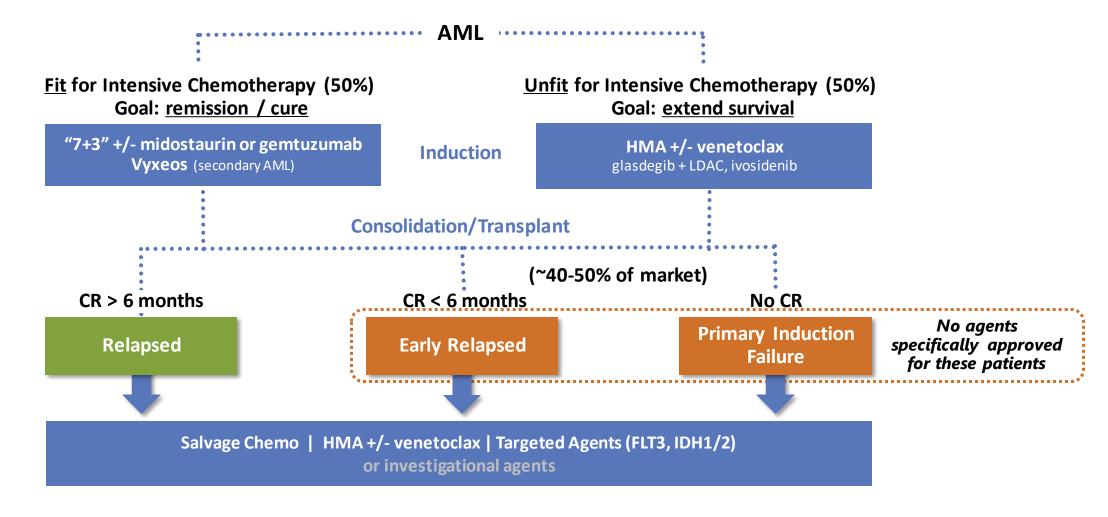
Establishing leadership position among CD123-targeting bispecifics





Primary Induction Failure & Early Relapsed AML: Significant Unmet Need

50% of patients have no known targetable mutation; flotetuzumab is mutation-agnostic



Phase 1/2 Development in AML

Expansion in primary induction failure & early relapsed AML patients

Dose Escalation

Dose Expansion

Data presented at ASH 2018

Data presented at ASH 2019

Establish Target Dose and Schedule (n=47)

Target Dose: 500 ng/kg/day
Cycle 1: Continuous Infusion over 28 Days
Cycle ≥ 2: 4 Days On / 3 Days Off

Relapsed/Refractory AML at RP2D (n=50)

Subset Analysis of Refractory Population:
Primary Induction Failure & Early Relapsed AML (n=30)

Incorporated multi-step, lead-in dosing and supportive care to mitigate CRS

Enriched for refractory subpopulation;
Optimized lead-in dosing

Inclusion/Exclusion Criteria

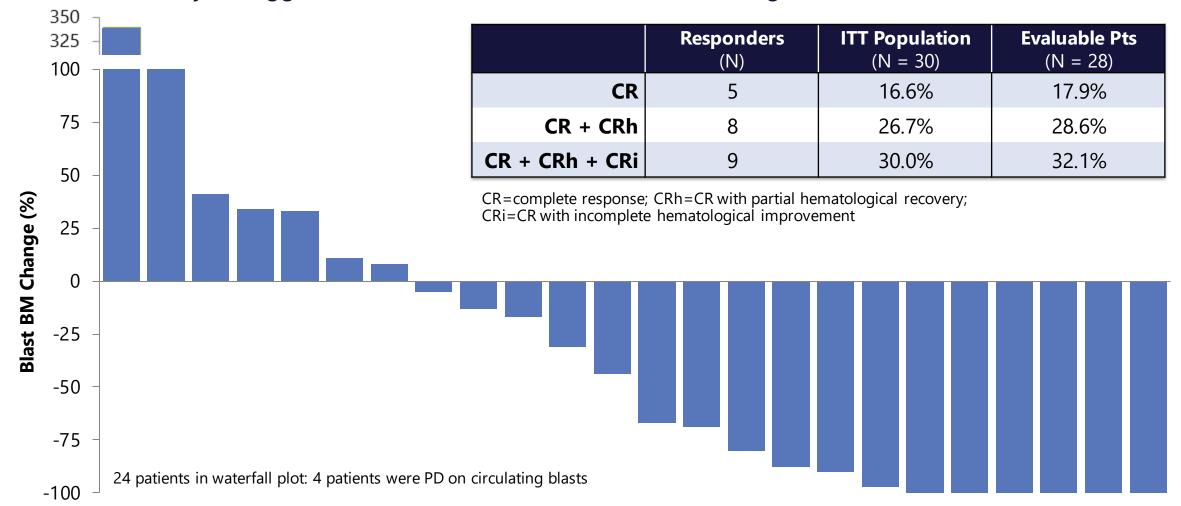
- Refractory population:
 - Refractory to ≥2 induction attempts, or
 - 1st relapse with initial CR duration of <6 months, or
 - HMA failure to ≥4 cycles
- Relapsed population (initial CR >6 months)
- No prior allogeneic hematopoietic cell transplant

Endpoints

- Safety and disease status assessed by modified IWG criteria
- Gene expression profiling performed using NanoString® PanCancerlO 360™ assay

Flotetuzumab is Active in Primary Induction Failure & Early Relapsed AML Patients

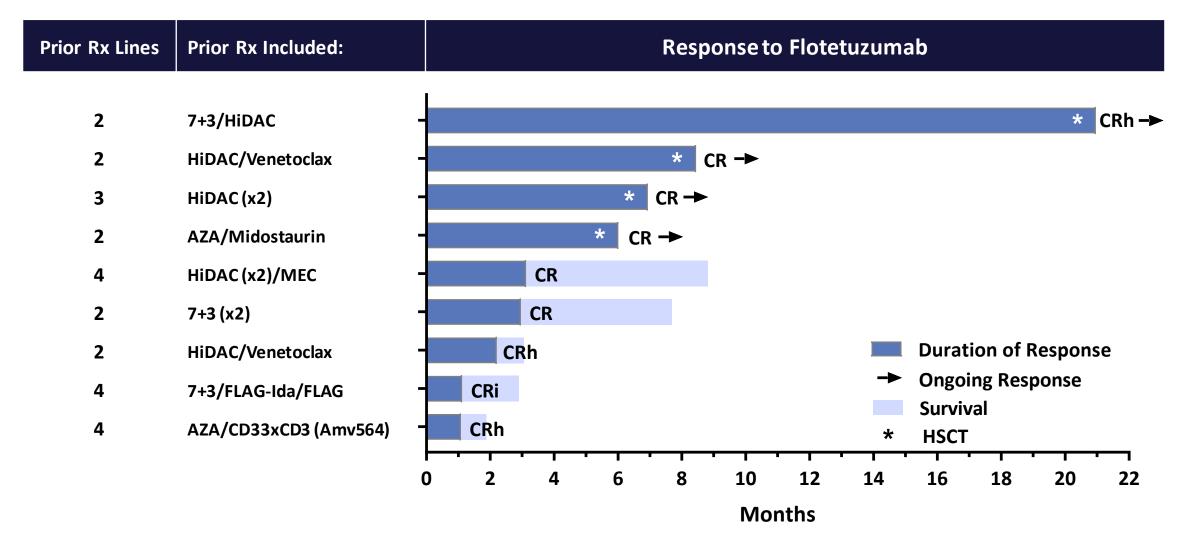
Benchmark analysis suggests historical CR+CRh rates in this setting of $\sim 12.5\%^{(a)}$



(a) Unpublished analysis of the CLASSIC I, VALOR, ADMIRAL trials and additional trials that included venetoclax, gemtuzumab-ozogamicin, and IDH1/2 inhibitors; (n=1328): CR/CRh = 12.5% [95% CI = 7.7%, 19.6%]

Uy, et al., ASH 2019

Flotetuzumab: Duration of Response in PIF & Early Relapsed AML Patients



^{*} Four responders (3 CR, 1 CRh) received allo-HSCT consolidation

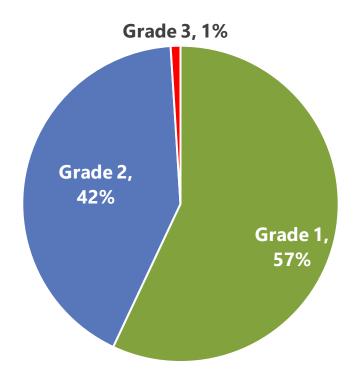
Uy, et al., ASH 2019

Mitigating Cytokine Release Syndrome Associated With T Cell Engagers

Decreased CRS severity and increased total flotetuzumab dose intensity

- Infusion-related reaction / cytokine release syndrome (IRR/CRS) occurred in all (30/30) patients:
 - Mild to moderate (grade 1 or 2) in severity; only one grade 3 event reported in one patient
 - Most events observed were of short duration
 (Median: Grade 1=1 day; Grade 2=2 days; Grade 3=3 days)
- CRS mitigation strategies:
 - Lead-in dosing schedule for flotetuzumab
 - Early use of tocilizumab as supportive care
 - Short half-life molecule can be "switched-off"
 (Continuous infusion advantageous for managing exposure)

Distribution of CRS Events by Grade



There were no grade 4 events

Uy, et al., ASH 2019

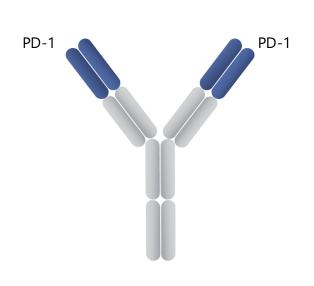
Capturing Full Potential of Flotetuzumab and CD123 × CD3 Bispecific Molecules

Commercia/ **Future Development Opportunities** Other CD123+ Hematologic Malignancies • 2nd Gen. Molecule in Preclinical Development Fc-bearing; alternate CD3 binder **Expand Through Combinations** Relapsed/Refractory AML (w/checkpoints) Combine w/retifanlimab ex-U.S. (paused) **Potential First Indication** Primary Induction Failure/Early Relapsed AML Pivotal monotherapy study being planned*

^{*} Pending ongoing discussions with FDA

Retifanlimab (MGA012): Anti-PD-1 antibody

Global collaboration with Incyte



Function/ MoA Clinical Studies

- Humanized, hinge-stabilized IgG4 mAb
- Inhibits PD-1

 Five registration-directed studies ongoing or planned in 2020 across a broad range of tumor types^(a)

Global Incyte Transaction

Up to \$750M in milestones (\$15M received to date)



- Tiered royalties of 15-24% on future retifanlimab sales
- Rights to develop pipeline assets with retifanlimab

2020 Anticipated Milestones

- Monotherapy data in anal cancer
- Initiation of Ph. 3 randomized study in NSCLC by Incyte

(a) ClinicalTrials.gov referenced May 4, 2020

Comprehensive Development Plans for Retifanlimab

Multiple potentially registration-enabling clinical studies



- Anal Cancer
- MSI High Endometrial Cancer
- Merkel Cell Carcinoma

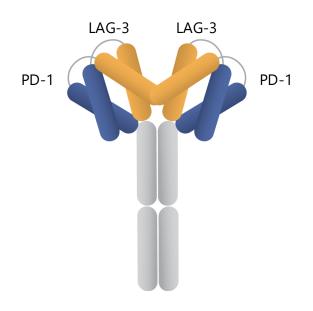
• 1L NSCLC + platinum-based chemotherapy (POD1UM-304)



 Gastric Cancer + margetuximab ± chemotherapy (MAHOGANY)

ClinicalTrials.gov referenced May 4, 2020

MGD013 (PD-1 × LAG-3): First Bispecific Checkpoint Molecule in Clinical Trials



Function/ MoA

- Simultaneous and/or independent blockade of two checkpoint molecules
- Reactivation of exhausted T cells

Clinical Studies

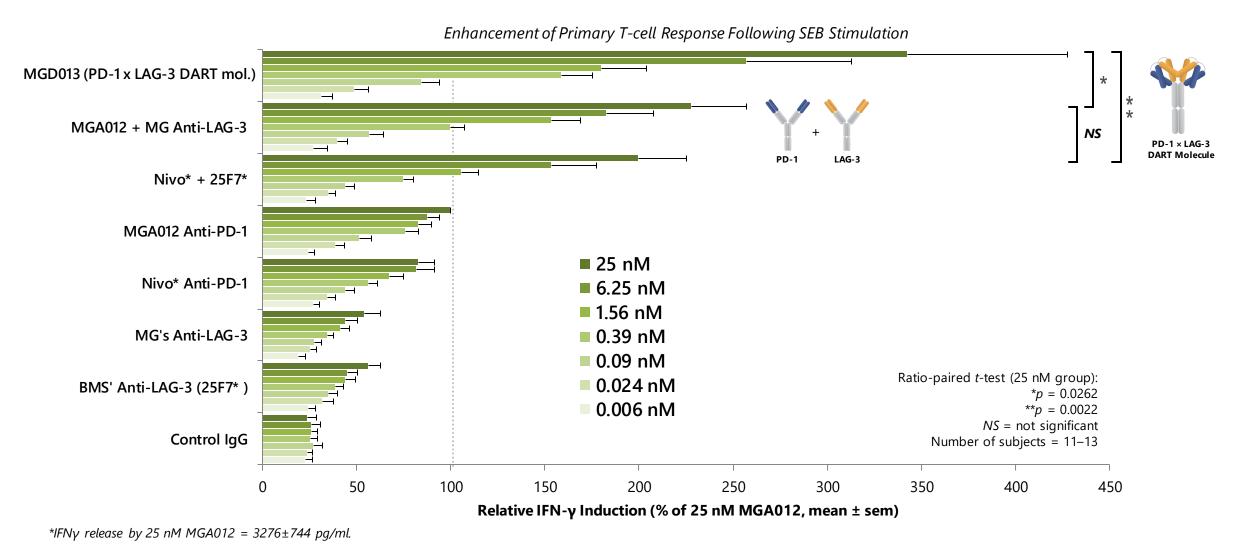
- Ph. 1 dose expansion in:
 - Nine tumor types (solid and liquid); checkpoint-naïve and checkpoint-experienced
 - Combination with margetuximab in HER2+ tumors

2020 Anticipated Milestones

- Present data from ongoing Ph. 1 at ASCO (1H)
- Select indications for further monotherapy development
- Potential combination studies with both margetuximab and enoblituzumab

MGD013: Synergistic T-cell Activation

DART molecule construct enhances T-cell activation vs. anti-PD-1 + anti-LAG-3 mAbs in vitro

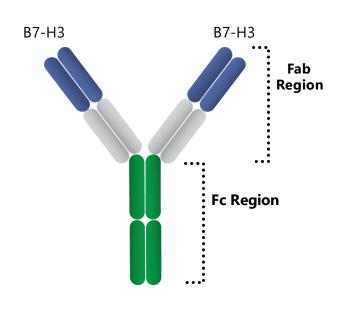


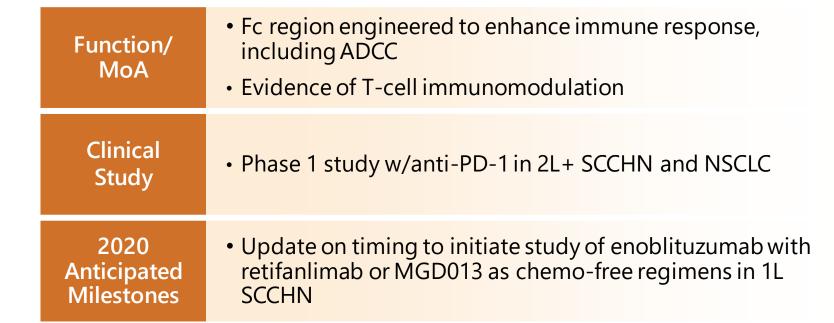
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Enoblituzumab: Potential Leading Anti-B7-H3 mAb

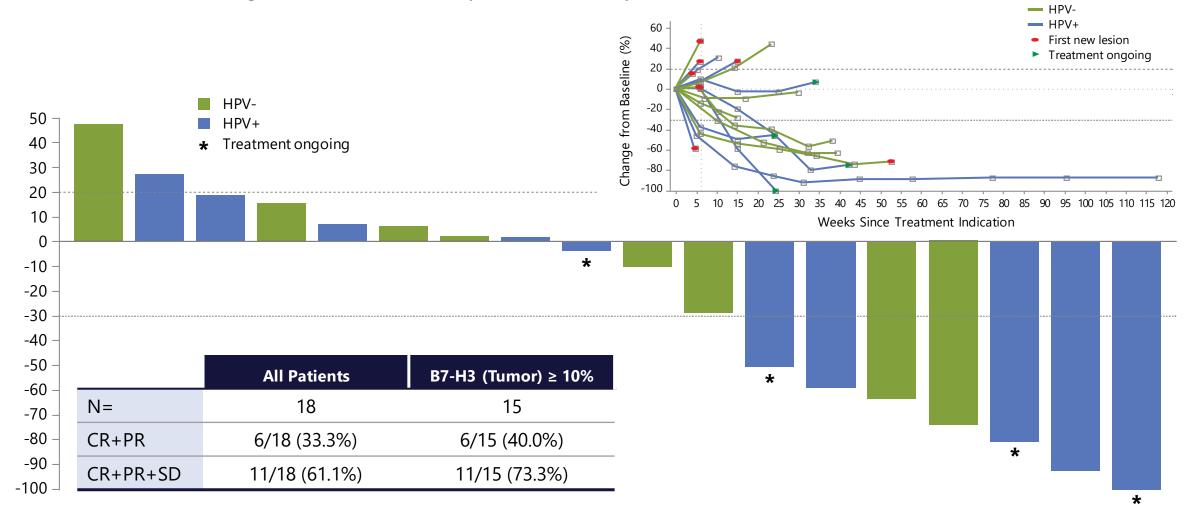
Leveraging immune modulation through Fc optimization





Antitumor Activity in SCCHN Patients (Anti-PD-1/PD-L1 Naïve) + anti-PD-1 mAb

Induction of tumor regression in SCCHN patients, irrespective of HPV status



Data cut-off date: October 12, 2018. Received ≥1 prior line of chemotherapy and TKI treatment. B7-H3 testing was retrospective.

Aggarwal, et al., SITC 2018

Encouraging Data from 2L+ Enoblituzumab plus Anti-PD-1 mAb

Opportunity to advance to 1L SCCHN

	Study Results in Checkpoint-naïve Patients						
Agent (Study)	Enoblituzumab + Pembrolizumab	Nivolumab (CHECKMATE-141) ^(a)	Pembrolizumab (KEYNOTE-012) ^(b)	Pembrolizumab (KEYNOTE-040) ^(c)	Pembrolizumab +chemotherapy (KEYNOTE-048) ^(d)		
Line	2L+	2L	2L+	2L	1L		
N	18	240	174	247	281		
ORR	33.3%	13%	16%	15%	36%		

⁽a) Ferris, et al., 2016, N Eng J Med

⁽b) Keytruda® package insert

⁽c) Cohen, et al., 2017, ESMO LBA45; Cohen, et al., 2019, The Lancet

⁽d) Burtness, et al., 2018, ESMO

Core Product Candidates with Key Milestones Anticipated in 2020

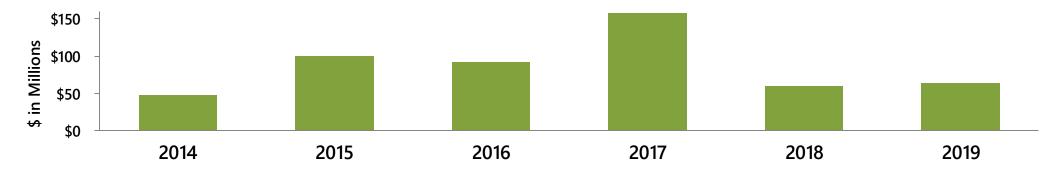
Retifanlimab Margetuximab **Flotetuzumab MGD013** (CD123 × CD3 DART molecule) (Anti-PD-1 mAb) (PD-1 × LAG-3 DART molecule) (Anti-HER2 mAb) **Breast Cancer** ☐ Present data from ongoing Per Incyte's disclosure ☐ Define registration path BLA filing acceptance (1Q) Phase 1 (ASCO) for PIF/ER AML (1H) ☐ Final OS (2H) □ Select indications for ☐ ODAC expected (2H) further development □ PDUFA date (12/18/2020) **Gastric/GEJ Cancer** ☐ Initial data MAHOGANY Module A (2H)

Financial Overview

- \$171M Cash, cash equivalents and marketable securities as of March 31, 2020
 - Cash runway into 2022 via anticipated and potential collaboration payments
- Historical financial details:

							1Q Ended March 31,	
\$ in Millions	2014	2015	2016	2017	2018	2019	2020	2019
Total Revenues	\$48	\$101	\$92	\$158	\$60	\$64	\$14	\$10
R&D Expense	70	98	122	147	191	195	49	47
Total Operating Expenses	86	121	152	180	231	241	59	57
Cash & Investments	158	339	285	305	233	216	171	320

• Revenues from collaborative and government agreements (>\$525M since 2013 IPO):



Thank You!



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