UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d) of the
Securities Exchange Act of 1934

Date of report (Date of earliest event reported): **June 9, 2017**

Mustang Bio, Inc.
(Exact Name of Registrant as Specified in Charter)

Delaware	**000-55668**	**47-3828760**
(State or Other Jurisdiction of Incorporation)	(Commission File Number)	(IRS Employer Identification No.)

2 Gansevoort Street, 9th Floor
New York, New York 10014
(Address of Principal Executive Offices)

(781) 652-4500
(Registrant's telephone number, including area code)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act.
☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act.
☐ Pre-commencement communications pursuant to Rule 14d-2b under the Exchange Act.
☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act.

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company ☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. £

Item 8.01 Other Events.

Attached hereto as Exhibit 99.1 and incorporated herein by reference is a presentation including an updated corporate overview of Mustang Bio, Inc.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits.

99.1 Corporate Presentation of June 2017.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Mustang Bio, Inc.
(Registrant)

Date: June 9, 2017

By: /s/ Manuel Litchman, M.D.
Manuel Litchman, M.D.
President and Chief Executive Officer

INDEX TO EXHIBITS

Exhibit Number	Description
99.1	Corporate Presentation of June 2017.

Exhibit 99.1

Corporate Presentation

June 2017

Forward Looking Safe Harbor Statement

This presentation contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These statements are often, but not always, made through the use of words or phrases such as "anticipates", expects", plans", believes", "intends", and similar words or phrases. Such statements involve risks and uncertainties that could cause Mustang Bio's actual results to differ materially from the anticipated results and expectations expressed in these forward-looking statements. These statements are only predictions based on current information and expectations and involve a number of risks and uncertainties. Actual events or results may differ materially from those projected in any such statements due to various factors, including the risks and uncertainties inherent in clinical trials, drug development, and commercialization. You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date hereof. All forward-looking statements are qualified in their entirety by this cautionary statement and Mustang Bio undertakes no obligation to update these statements, except as required by law.

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Corporate Overview

- Founded by Fortress Biotech in 2015
- Chimeric Antigen Receptor (CAR) T Cell technology from City of Hope (COH)
  - Based on the research of Stephen Forman and Christine Brown, pioneers of CAR-T technology
- First two CAR-Ts entered the clinic in 2015 and 2016
- Research collaboration between Mustang and COH to
  - Identify additional CAR-T clinical candidates
  - Improve the efficacy of collaboration CAR-T clinical candidates

Mission Statement

To provide long-term clinical remissions for patients with aggressive forms of cancer by leveraging best-in-class science to create novel CAR-T therapies.

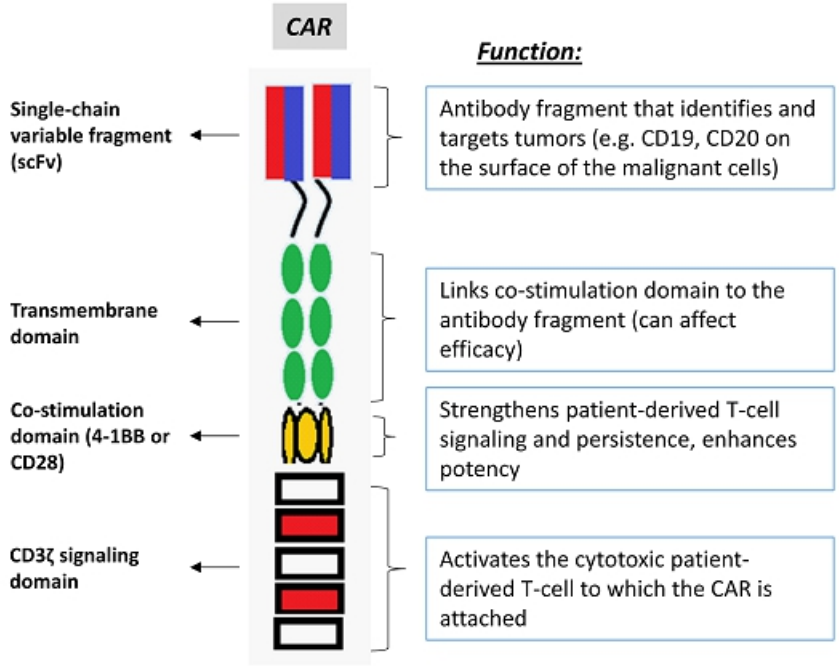
Publicly Traded CAR-T Companies

Company Name (Ticker)	Market Cap (6/1/2017)
Kite Pharma (KITE)	~$4.2B
Juno Therapeutics (JUNO)	~$2.6B
Ziopharm (ZIOP)	~$0.9B
Cellectis (CLLS)	~$0.8B

What is a CAR-T?

Chimeric Antigen Receptor - T Cell

The CAR recognizes targets on the surface of the malignant cell to direct and activate T-cells to destroy the tumor



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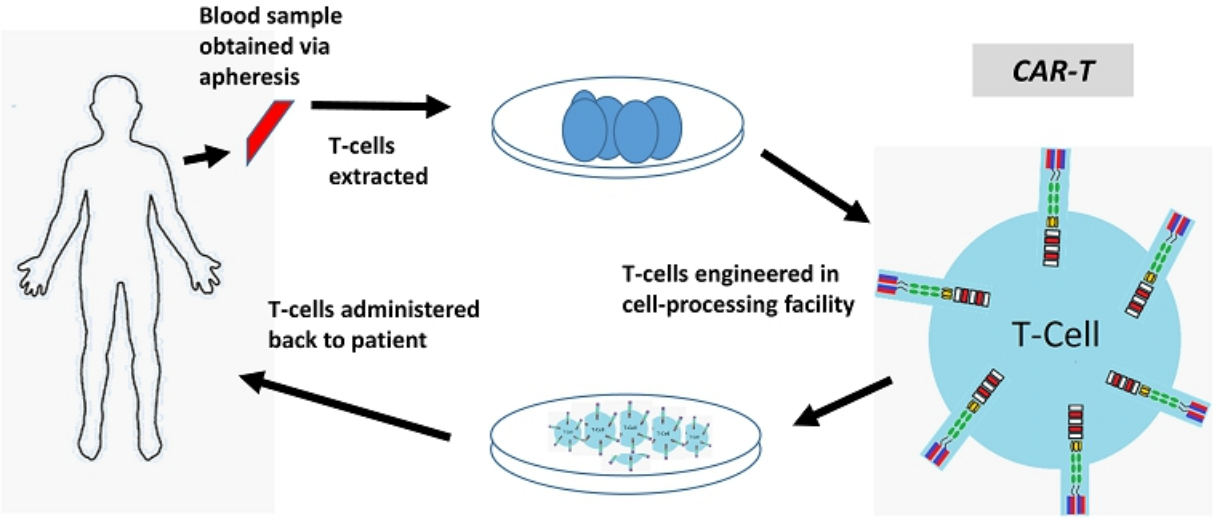
How is a CAR-T made?



Total time from apheresis to infusion: ~2-4 weeks

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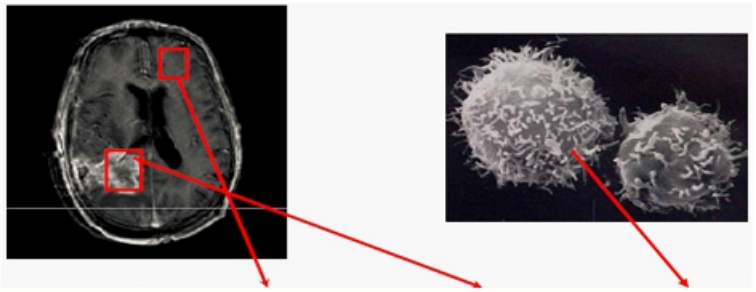
Lead CAR-T Programs

All trials currently being conducted under COH IND

- **MB-101**
  - Targets IL13Rα2 on surface of cancer cells
  - For the treatment of glioblastoma multiforme (GBM) tumors
  - Phase 1 ongoing
- **MB-102**
  - Targets CD123 on surface of cancer cells
  - For the treatment of AML (acute myeloid leukemia) and BPDCN (blastic plasmacytoid dendritic cell neoplasm)
  - Phase 1 ongoing

MB-101: IL113Rα2 is an Ideal Target for GBM



Target Antigen	Normal Brain	GBM	T - Cells
TNFR	+ / -	+++	+++
HER2	-	+++	-
EGFR	++	++++	-
EGFRvIII	-	++++ (<30%)	-
IL13Rα2	-	++++ (>90%)	-

- Jamalapadda et al. Mol Therapy; 2015
- Wang et al. Immunotherapy; 2011
- Brown et al. Manuscript inpreparation

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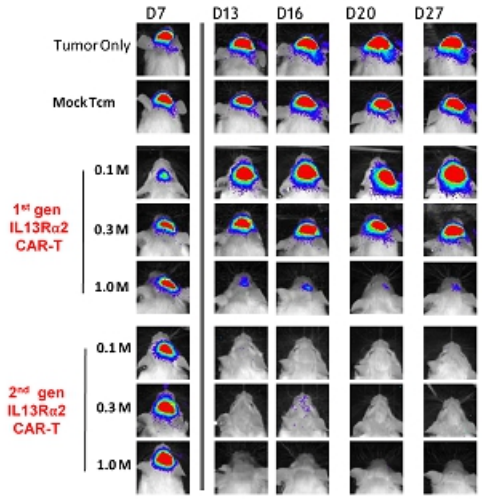
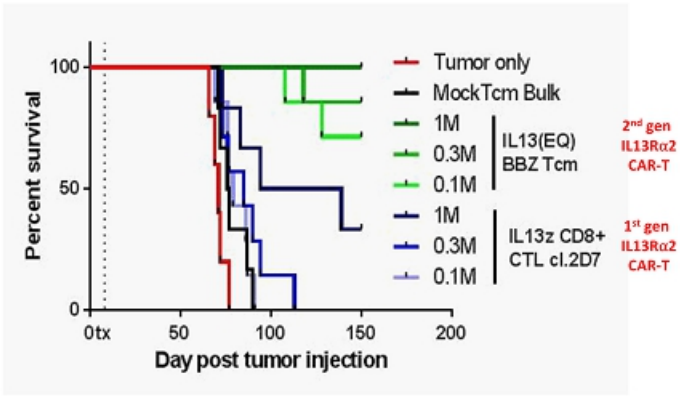
MB-101 CAR-T is More Potent than 1st Generation IL13-Targeted CAR-T





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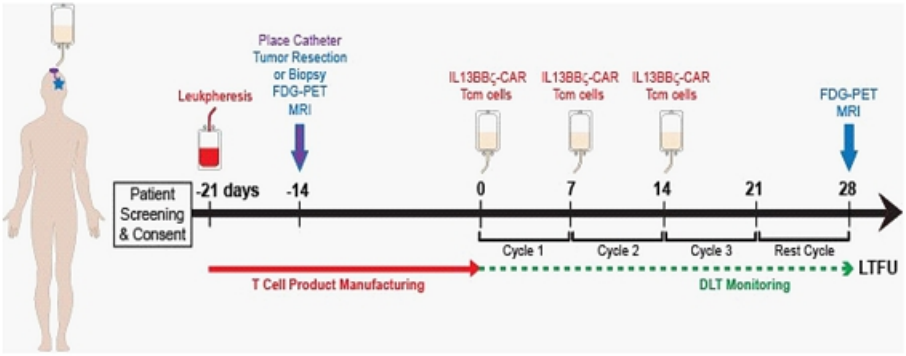
Phase I Clinical Trial with MB-101 is Ongoing

Patient Population	Planned Enrollment	Study Objectives
Relapsed/Refractory GBM • Arm 1: Resectable • Arm 2: Non-resectable	12/arm	• Assess feasibility and safety • Determine MTD



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Resection Arm – ICT Treatment Summary

Patient #	Tx Arm / Dose	IL13Rα2 IHC	Manuf. CAR-T Cells	Treatment Dose	Notes
UPN097	Resection / Dose 1	110	64% CAR 16 days	Cycles 1, 2: 2M, 10M	**PD;** Off-study due to rapid tumor progression
UPN109	Resection / Dose 1	80	64% CAR 18 days	Cycles 1, 2, 3 (ICT): 2M, 10M, 10M Cycles 4, 5, 6 (ICT): 10M, 10M, 10M Cycles 1, 2, 3 (ICV): 2M, 10M, 10M Cycles 4, 5 (ICV): 10M, 10M Cycles 6-9 (ICV): 10M	**CR;** Treatment ongoing (7 months)
UPN117	Resection / Dose 1	200+	60% CAR 15 days	Cycles 1, 2, 3: 2M, 10M, 10M	**PD;** Off-study due to rapid tumor progression
UPN122	Resection / Dose 1	150+	95% CAR 14 days	Cycles 1, 2, 3: 2M, 10M, 10M Cycles 4, 5, 6: 10M, 10M, 10M	**SD*** (6 cycles)
UPN125	Resection / Dose 2	200+	73.5% CAR 15 days	Cycles 1, 2, 3: 10M, 50M, 50M Cycles 4, 5, 6: 50M, 50M, 50M	**SD*** (6 cycles)
UPN131	Resection / Dose 2	130+	81.3% CAR 14 days	Cycles 1, 2: 10M, 50M*, 50M	**SD*** (6 cycles)

Dose Schedule 1:

Well – tolerated in all patients treated
No grade 3 or higher toxicities
No cytokine release syndrome or neurotoxicity
Grade ≤2 fevers, headaches, myalgia, chills

ICT = intracavitary (i.e., into the cavity in the brain created by resection of the tumor)
ICV = intracerebroventricular (i.e., into the ventricular system that bathes the brain and spinal cord)

*Preliminary data, currently under QA review

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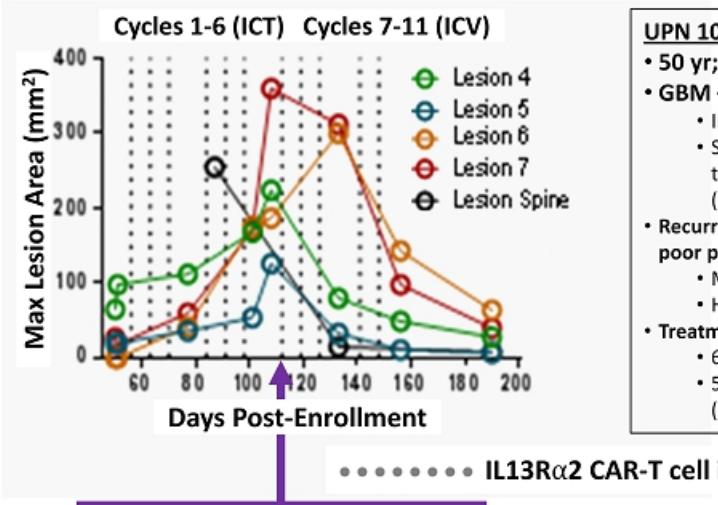
Progression of New Tumors Distant from CAR-T Cell Infusion Site



UPN 109

- **50 yr; male**
- **GBM – Primary Diagnosis**
  - IDH1 wt; MGMT-hypomethylated
  - SOC therapy: surgery, radiation, temozolamide, Novacure device (i.e. tumor treating fields)
- **Recurrent IL13Rα2+ GBM displayed poor prognostic features**
  - Multifocal
  - Highly proliferative
- **Treatment – IL13Rα2 CAR-T cells**
  - 6 intracavitary infusions (ICT)
  - 5 intracerebroventricular infusions (ICV)

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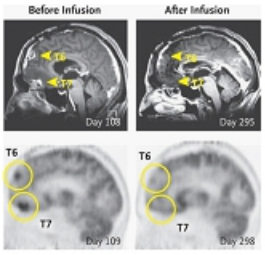
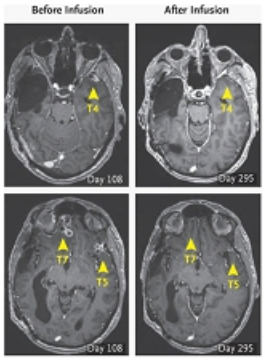
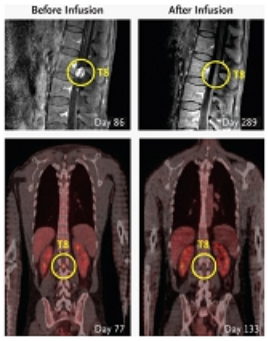
Regression of Recurrent Multifocal Glioblastoma After Intraventricular Delivery of IL13Rα2 - Targeted CAR-T Cells



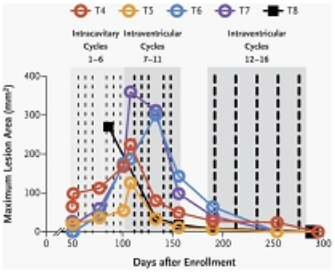
Sagittal MRI (top) and PET (bottom) of the brain



Axial MRI of the brain



All metastatic tumors in the spine were completely eliminated



Maximum lesion area for non-resected tumors 4 through 8 with their respective decreases over time

- Clinical response was sustained for 7.5 months after the initiation of CAR T-cell therapy, and none of these initial tumors recurred
- These results show that treatment with the CAR-T resulted in a complete response

Source: *The New England Journal of Medicine*. 2016;375:2561-9.

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GBM is a Significant Unmet Medical Need

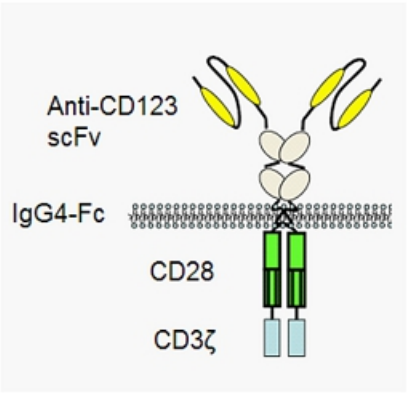
- Glioblastoma multiforme (GBM) is the most common primary malignant brain tumor
- GBM is also the most aggressive form of brain tumor, and is associated with extremely poor prognosis and survival
  - Median overall survival from diagnosis is approximately 15 months
  - 5 year survival of only 5%
- ~30,000 newly diagnosed cases of GBM annually in the US, Japan and five major European markets

Competitive Therapies in Development for GBM

Drug Name	Company	Description	Target	Clinical Stage
AU105	Aurora BioPharma	AU105: Bispecific anti-HER2/anti-CMV pp65 antigen	HER2 *and* CMV pp65 antigen	Phase I
CART-EGFRvIII	NIH	Anti-EGFRvIII CART	EGFR	Phase I
CART-EGFRvIII	University of Pennsylvania	Anti-EGFRvIII CART	EGFR	Phase I
CART-EGFRvIII	Duke University	Anti-EGFRvIII CART	EGFR	Phase I
EGFRvIII	Kite Pharma	Anti-EGFRvIII CART	EGFR	Preclinical
UCART-EGFRvIII	Cellectis	Anti-EGFRvIII "universal CAR" through expression on allogeneic T-cells	EGFR	Discovery

MB-102 CAR-T Targeting CD123 Expressing Tumors

- CD123* is expressed on cells of myeloid lineage and is overexpressed on AML, ALL and BPDCN
- Human proof-of-principle with fusion toxin directed at target on BPDCN cells
- Limited CAR-T competition for this target (Novartis, Juno and Kite are not in clinic)



*Also known as IL-3Rα

- *Wang et al. 2011 Blood*
- *Mardiros et al. 2013 Blood*
- *Jonnalagadda et al. 2014 Mol Ther*

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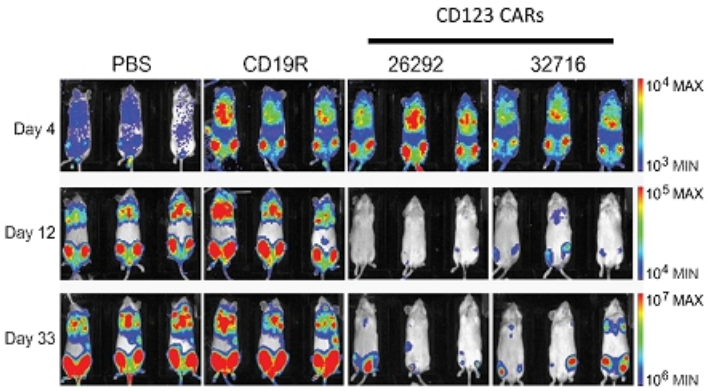
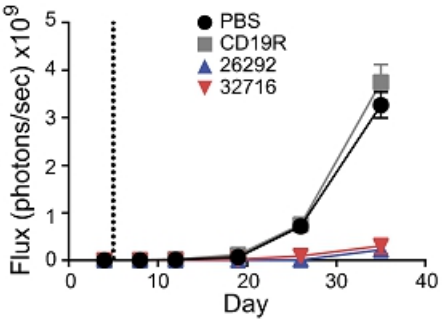
MB-102 (CD123) – Antitumor Activity Against Human Acute Myeloid Leukemia





Mardiros et.al. *Blood*. 2013;122:3138-3148.

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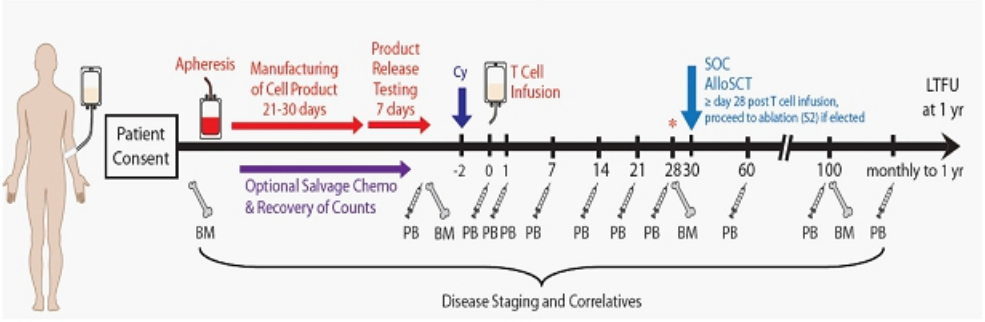
Phase I Clinical Trial with MB-102 is Open and Recruiting Patients

Patient Population	Planned Enrollment	Study Objectives
Refractory / Relapsed AML	18	Assess the feasibility / safety and determine MTD of single infusion



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AML is a Significant Unmet Medical Need

- Acute myeloid leukemia is the most common acute leukemia in adults
- Approximately 30,000 newly diagnosed cases of AML per year in the US, Japan and five major European markets
- Overall five-year survival rate in the US is ~25%

Competitive Landscape for CD123 Targeted Therapies

Drug Name	Company	Drug Description	Targets	Clinical
CART-CD33 CD123	Theravectys (China)	CAR	CD33, CD123	Phase I/II
SL-401	Stemline	IL3 fusion toxin	CD123	Phase I/II
CSL-360/362	CSL	MAb	CD123	Phase I
GD006	MacroGenics	Bi-specific antibody to CD123 and CD3	CD3, CD123	Phase I
SGN-CD123A	Seattle Genetics	Antibody-drug conjugate	CD123	Phase I
UCART123	Cellectis	Allogeneic T-cell CAR	CD123	Phase I planned

Ultra – Orphan Opportunity: BPDCN

- Blastic plasmacytoid dendritic cell neoplasm is a rare but aggressive blood cancer
  - Annual US incidence: <60 (similar or larger number in Europe)
  - No standard of care
  - Median overall survival: 9 – 12 months
- Uniformly very high CD123 expression
- Proof-of-Principle
  - IL-3 target fusion protein
  - In a pilot trial, 7/9 BPDCN responded (5 CR, 2 PR)
  - Median duration of response: 5 months (1-24)

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New CAR-T Programs

Pursuant to licensing agreement with COH announced June 5, 2017

- **MB-103**
  - Targets HER2 on surface of cancer cells
  - Will be initially applied to the treatment of GBM tumors
  - Preclinical
  - Other HER2 CAR-Ts: Aurora BioPharma's HER2 CAR-T is in phase 1 development
- **MB-104**
  - Targets CS1 on surface of cancer cells
  - For the treatment of multiple myeloma
  - Preclinical
  - Other CS1 CAR-Ts: Cellectis' CS1 CAR-T is in preclinical development
- **MB-105**
  - Targets prostate stem cell antigen (PSCA) on surface of cancer cells
  - For the treatment of prostate, pancreatic, bladder, & gastric cancers
  - Preclinical
  - Other PSCA CAR-Ts: Bellicum Pharmaceuticals' PSCA CAR-T is in phase 1 development

Key Milestones and Deliverables for Mustang in 2017: GBM CAR-T

- Amend GBM protocol to allow continued intracerebro-ventricular dosing with MB-101
  - Collect safety and efficacy data at COH
  - Conduct in-depth root-cause analysis for all suboptimal responses and assess how therapy might be improved
    - Explore creation of dual CAR-T construct to target both IL13Rα2 and HER2
    - Explore other interventions that have been shown to improve the efficacy of CAR-T therapy in solid tumors (e.g., gene editing of PD-1 on T-cells via CRISPR)
- Plan for Mustang IND in 2018

Additional Key Milestones and Deliverables for Mustang in 2017

- Continue to dose AML patients with MB-102 and assess for safety and efficacy; plan for Mustang IND in 2018
- In-license additional CAR-Ts from academic institutions
- Secure facility to build internal cell processing capabilities in order to support Mustang IND in 2018
  - Hire appropriate personnel; execute contracts for key raw materials, plasmids and vector
- Increase visibility of Mustang in scientific, medical and investment communities

Key Take Home Messages

- Robust CAR-T platform technology in partnership with pioneers in CAR-T technologies from COH
- Lead CAR-T with no currently known competition for the target (IL13Rα2) already in the clinic at COH with 1 complete response
- Second CAR-T also accruing patients at COH; target (CD123) has been validated in ultra-orphan indication
- Significant progress is expected in 2017 toward continuing to build a robust, leading CAR-T company
  - Intend to further expand portfolio of CAR-Ts
  - Lay foundation for submission of Mustang INDs in 2018: manufacturing, personnel, enabling technology

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Corporate Presentation

June 2017