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 Act of 1934

Date of Report (Date of earliest event reported): January 13, 2020

MAGENTA THERAPEUTICS, INC.

(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization)

001-38541 (Commission File Number)

100 Technology Square Cambridge, Massachusetts (Address of principal executive offices)

81-0724163 (I.R.S. Employer Identification Number

02139 (Zip Code)

Registrant's telephone number, including area code: (857) 242-0170

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 (17 CFR 230.425)

□ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

D Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

D Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13d-4(c))

Securities registered pursuant to Section 12(b) of the Act:

	Trading	Name of each exchange
Title of each class	Symbol(s)	on which registered
Common Stock, \$0.001 Par Value	MGTA	The Nasdaq Global Market

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 \boxtimes

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. \Box

Item 2.02 Results of Operations and Financial Condition.

The following information and Exhibit 99.1 attached hereto shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933, as amended (the "Securities Act"), except as expressly set forth by specific reference in such filing.

On January 13, 2020, Magenta Therapeutics, Inc. (the "Company") issued a press release providing a business update including highlights of recent progress across several programs and platforms, preliminary unaudited financial results for the full year ended December 31, 2019 and projected cash runway. The full text of the press release is furnished as Exhibit 99.1 to this Current Report on Form 8-K.

Item 7.01 Regulation FD Disclosure.

The following information and Exhibit 99.2 attached hereto shall not be deemed "filed" for purposes of Section 18 of the Exchange Act or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act, except as expressly set forth by specific reference in such filing.

Jason Gardner, the Chief Executive Officer of the Company, will present at the 38th Annual J.P. Morgan Healthcare Conference in San Francisco on January 15, 2020 at 11:30 a.m. PT. The presentation will be accessible by a live audio webcast through the Company's website at www.magentatx.com. During the conference, the Company intends to conduct meetings with third parties during which a corporate slide presentation will be presented. A copy of the Company's presentation slide deck, which will be referenced during the conference, including during the Company's webcast presentation, is furnished herewith as Exhibit 99.2.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits:

The following exhibits relating to Items 2.02 and 7.01 shall be deemed furnished, and not filed:

- 99.1 Press Release dated January 13, 2020.
- 99.2 <u>Copy of Magenta Therapeutics, Inc. slide presentation dated January 2020.</u>

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SIGNATURES

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

MAGENTA THERAPEUTICS, INC.

 Date:
 January 13, 2020

 By:
 /s/ Jason Gardner

 Title:
 President and Chief Executive Officer

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Magenta Therapeutics Advances Conditioning Platform and Clinical Programs, Highlights Recent Milestones and 2020 Goals

- New MGTA-117 ADC clinical candidate for conditioning demonstrates broad therapeutic index; advancing MGTA-117 to generate initial patient clinical data in 2021
- MGTA-145 first-line stem cell mobilization agent on track to complete Phase 1 study and move into multiple Phase 2 studies in 2020
- Completion of enrollment in Phase 2 study of MGTA-456 cell therapy in IMDs expected in 2020
- Eight abstracts from across the pipeline accepted for presentation at Transplant and Cellular Therapy Annual Meeting, including four oral presentations, and Best Oral Abstract award
- Ended 2019 with approximately \$146 million in cash and cash equivalents with runway into 4Q21

CAMBRIDGE, Mass. – January 13th, 2020 - **Magenta Therapeutics** (NASDAQ: MGTA), a clinical-stage biotechnology company developing novel medicines to bring the curative power of immune reset to more patients, today highlighted recent progress across several programs and outlined goals for 2020. These updates will be discussed during a webcast presentation at the 38th annual J.P. Morgan Healthcare Conference on Wednesday, January 15th at 11:30 a.m. PT (2:30 p.m. ET).

"In 2019 we generated landmark data from our ADC-based targeted patient preparation platform, which is delivering a new class of antibody-drug conjugates (ADCs) that have the power to bring one-time treatment to more patients with autoimmune diseases, blood cancers and genetic diseases. We also presented clinical data for our first-line stem cell mobilization program, MGTA-145, which we are developing as the new standard of care for stem cell mobilization with

the potential to benefit all of the transplant-eligible patients each year," said Jason Gardner, D. Phil., President and Chief Executive Officer, Magenta. "As we begin 2020, we are particularly excited to unveil our MGTA-117 clinical candidate for targeted patient preparation for stem cell transplant or gene therapy. New results announced today highlight the potency, safety and broad therapeutic index of MGTA-117, well above that of currently approved ADCs. We believe that MGTA-117 is the optimal agent for depleting stem cells to enable safe immune reset. We look forward to moving this program into the clinic with initial clinical data expected in 2021."

Targeted Patient Preparation Programs

Current methods to condition patients before transplant and gene therapy are dependent on toxic, non-specific chemotherapy or radiation. These pre-transplant treatments are associated with significant side effects, including infertility, cancer, organ damage and death. Magenta is developing targeted, disease-modifying ADCs that are designed to precisely and rapidly remove the disease-causing cells in the body and enable immune system reset without the need for chemotherapy or radiation.

CD117-ADC Recent Progress

Data presented at the American Society of Hematology (ASH) annual meeting in December 2019, showed the first-ever successful transplant of genemodified cells in non-human primates using a CD117-targeted, single-agent ADC from Magenta, without the use of chemotherapy or radiation. These unprecedented results validate and advance Magenta's conditioning platform.

Building on this work, Magenta's new clinical candidate, MGTA-117, is a CD117 antibody conjugated to amanitin. Results published today in an abstract for the Transplant and Cellular Therapy annual meeting show that MGTA-117 potently depleted stem and progenitor cells and demonstrated a wide tolerability: potency ratio of 30 fold (therapeutic index; typical range for approved ADCs at this stage is two to six fold). This program is advancing to the clinic and further validates Magenta's antibody drug conjugate-based conditioning platform. MGTA-117 was developed under a partnership with Heidelberg Pharma that grants Magenta exclusive worldwide development and marketing rights for ADCs using an amanitin payload and targeting CD117.

MGTA-117 in 2020

Magenta is scaling up manufacturing of MGTA-117 and completing IND-enabling studies in 2020. The Company intends to move this new product candidate into the clinic with initial clinical data expected in 2021.

CD45-ADC Recent Progress

Current standard treatment for patients with multiple sclerosis involves years of chronic dosing of medications that do not halt the progression of the disease. For patients with systemic sclerosis, a potentially fatal autoimmune disease, there are no approved therapies. Immune reset through stem cell transplant has demonstrated durable remissions in thousands of patients with autoimmune diseases such as multiple sclerosis and systemic sclerosis, and it is recommended by the European League Against Rheumatism (EULAR) in treatment guidelines for systemic sclerosis. The immune reset process involves two main steps: removing the disease-causing cells and replacing them with healthy cells to rebuild the immune system to a healthy state.

Magenta is developing targeted ADCs designed to precisely remove the disease-causing cells in the body without the need for chemotherapy or radiation. Magenta's CD45-ADC program targets CD45, a protein expressed on immune cells and stem cells and is designed to remove the cells that cause autoimmune diseases in order to enable curative immune reset.

Data presented at the American College of Rheumatology (ACR) meeting in November 2019 showed that a single dose of CD45-ADC removed disease-causing reactive T cells, enabled successful immune reset and rebuild of the immune system and was well tolerated in three models of autoimmune disease, including the EAE model, the most reliable murine model of multiple sclerosis. Further, a single dose of CD45-ADC significantly reduced disease incidence and delayed disease onset in this model that has successfully provided preclinical proof of concept for many clinically validated standard-of-care therapies.

CD45-ADC in 2020

Magenta has identified a lead antibody and has progressed this program into IND-enabling studies, which the Company plans to further advance in 2020.

MGTA-145 First-Line Stem Cell Mobilization Therapy

MGTA-145 Recent Progress

Magenta is developing MGTA-145 as the new first-line standard of care for stem cell mobilization in a broad range of diseases, including autoimmune diseases, blood cancers and genetic diseases. MGTA-145, a CXCR2 agonist, works in combination with plerixafor, a CXCR4 antagonist, to harness the physiological mechanism of stem cell mobilization.

Magenta is currently studying MGTA-145 and plerixafor in a Phase 1 study in healthy volunteers. Data from the Phase 1 study presented at the ASH annual meeting in December 2019 showed that MGTA-145 in combination with plerixafor successfully enables safe, same-day dosing, mobilization and collection of sufficient high-quality hematopoietic stem cells for transplant. Further, when cells collected from the first two apheresis subjects were transplanted into humanized mice, the cells engrafted more rapidly and at a five-fold higher level than cells from G-CSF-mobilized peripheral blood.

MGTA-145 in 2020

Magenta intends to complete the Phase 1 study and move this program into multiple Phase 2 studies in patients in 2020. The Phase 2 studies will include both allogeneic and autologous transplant settings and will evaluate mobilization and collection of high-quality cells and engraftment of the cells after transplant.

MGTA-456 Cell Therapy

MGTA-456 Recent Progress

MGTA-456 is a cell therapy designed to provide a high dose of stem cells that are well matched to the patient to enable safe immune and blood system rebuild and durable remissions in patients with blood cancers. In September, the U.S. Food and Drug Administration (FDA) granted Regenerative Medicine Advanced Therapy (RMAT) designation for MGTA-456 for the treatment of multiple inherited metabolic disorders.

Magenta is currently studying MGTA-456 in a Phase 2 study in patients with inherited metabolic disorders, including cerebral adrenoleukodystrophy (cALD) and Hurler syndrome. These are rare, rapidly progressive neurologic disorders that are fatal when left untreated. Results in the first two evaluable patients with cALD updated in December 2019 showed early and durable resolution of the disease at 12 months' follow-up. The Loes score and NFS score, which measure progress of the disease, remained stable, suggesting that progress of the disease halted in these patients. The early and durable resolution of disease with MGTA-456 is not consistently seen with other therapies, including standard stem cell transplant, gene therapy or enzyme replacement therapy.

MGTA-456 in 2020

Magenta intends to complete enrollment in the Phase 2 in 2020 and continue dialogue with the FDA under the RMAT designation, and to discuss with the European Medicines Agency (EMA) for development in Europe

About Magenta Therapeutics

Headquartered in Cambridge, Mass., Magenta Therapeutics is a clinical-stage biotechnology company developing novel medicines for patients with autoimmune diseases, blood cancers and genetic diseases. By creating a platform focused on critical areas of unmet need, Magenta Therapeutics is pioneering an integrated approach to allow more patients to receive one-time, curative therapies by making the process more effective, safer and easier.

Forward-Looking Statement

This press release may contain forward-looking statements and information within the meaning of The Private Securities Litigation Reform Act of 1995 and other federal securities laws. The use of words such as "may," "will," "could", "should," "expects," "intends," "plans," "anticipates," "believes," "estimates," "predicts," "projects," "seeks," "endeavor," "potential," "continue" or the negative of such words or other similar expressions can be used to identify forward-looking statements. The express or implied forward-looking statements included in this press release are only predictions and are subject to a number of risks, uncertainties and assumptions, including, without limitation risks set forth under the caption "Risk Factors" in Magenta's Annual Report on Form 10-K, as updated by Magenta's most recent Quarterly Reports on Form 10-Q and its other filings with the Securities and Exchange Commission. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this press release may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements. You should not rely upon forward-looking statements as predictions of future events. Although Magenta believes that the expectations reflected in the forward-looking statements will be achieved or occur. Moreover, except as required by law, neither Magenta nor any other person assumes responsibility for the accuracy and completeness of the forward-looking statements included in this press release. Any forward-looking statement included in this press release speaks only as of the date on which it was made. We undertake no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise, except as required by law.

Magenta Therapeutics:

Manisha Pai, Vice President, Communications & Investor Relations 617-510-9193

mpai@magentatx.com



Forward-Looking Statements

This presentation contains forward-looking statements and information within the meaning of The Private Securities Litigation Reform Act of 1995 and other federal securities laws. The use of words such as "may," "will," "could", "should," "expects," "intends," "plans," "anticipates," "believes," "estimates," "predicts," "projects," "seeks," "endeavor," "potential," "continue" or the negative of such other similar expressions can be used to identify forward-looking statements.

The express or implied forward-looking statements included in this presentation are only predictions and are subject to a number of risks, uncertainties and assumptions, including, without limitation: uncertainties inherent in clinical studies and in the availability and timing of data from ongoing clinical studies; whether interim results from a clinical trial will be predictive of the final results of the trial; whether results from preclinical studies or earlier clinical studies will be predictive of the results of future trials; the expected timing of submissions for regulatory approval or review by governmental authorities, including review under accelerated approval processes; orphan drug designation eligibility; regulatory approvals to conduct trials or to market products; whether Magenta's cash resources will be sufficient to fund Magenta's foreseeable and unforeseeable operating expenses and capital expenditure requirements; and other risks set forth under the caption "Risk Factors" in Magenta's Form 10-K filed with the Securities and Exchange Commission (the "SEC") as updated by Quarterly Reports on Form 10-Q and its other filings made with the SEC from time to time. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this presentation may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements. You should not rely upon forward-looking statements as predictions of future events. Although Magenta believes that the expectations reflected in the forward-looking statements will be achieved or occur.

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Multiple Sclerosis The Patient Journey





The Promise of a New Immune System: Jennie's Transplant Journey



Approved One-Time Curative Treatment for MS Does Not Exist Today



2.3M Affected worldwide, or 1 in 700 adults

One of most prevalent autoimmune diseases

Leading cause of non-traumatic neurological disability in young adults

Life-long, chronic therapies create high burden.





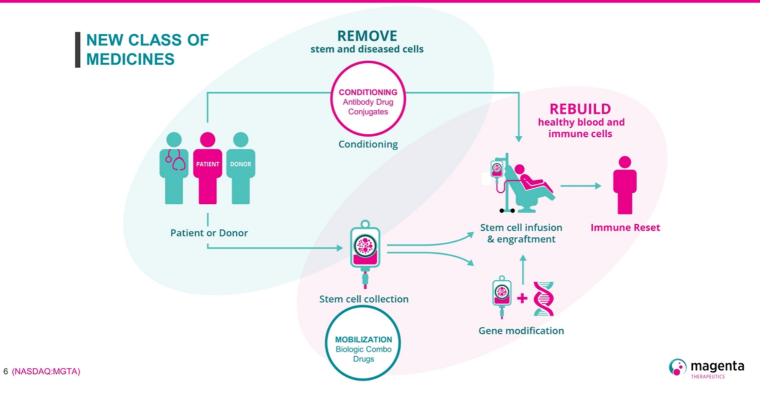


100% High burden/costs for life-long care

5 (NASDAQ:MGTA) ¹San-Juan-Rodriguez A, Good CB, Heyman RA, Parekh N, Shrank WH, Hernandez I. Trends in Prices, Market Share, and Spending on Self-administered Disease-Modifying Therapies for Multiple Sclerosis in Medicare Part D. JAMA Neurol. 2019;76(11):1386–1390.



Magenta will Revolutionize Immune Reset for All Patients



Immune Reset through Stem Cell Transplant: Currently Reserved for Limited Number of Patients

Only **65,000** patients receive a transplant worldwide*

7 (NASDAQ:MGTA) *Includes Autoimmune Diseases, Blood Cancers, Genetic Diseases; not to scale

🕝 magenta

Immune Reset through Stem Cell Transplant: Currently Reserved for Limited Number of Patients

Only **65,000** patients receive a transplant worldwide*

150,000 patients eligible today*



8 (NASDAQ:MGTA) *Includes Autoimmune Diseases, Blood Cancers, Genetic Diseases; not to scale

🚱 magenta

Immune Reset through Stem Cell Transplant: Currently Reserved for Limited Number of Patients

Annual patients eligible for a transplant worldwide*

9 (NASDAQ:MGTA) *Includes Autoimmune Diseases, Blood Cancers, Genetic Diseases; not to scale

🚱 magenta

From Platform to Medicines and One-time Cures



10 (NASDAQ:MGTA)



We Are Magenta



Delivering Immune System Reset to Make Cures Possible for More Patients

Only company comprehensively transforming transplant across autoimmune diseases, genetic diseases and blood cancers

People, platforms and product engine to change practice of transplant medicine

Portfolio of innovative, first-in-class therapies, including two clinical programs

Large market opportunity

Strong cash position of approximately \$146M to fund operations into 4Q 2021

12 (NASDAQ:MGTA)

(magenta



13 (NASDAQ:MGTA)

*Phase 1 study in healthy volunteers



CD117-ADC

Generated proof of concept results in transplant gene therapy - validates ADC as single dose, single agent for transplant or gene therapy; advances conditioning portfolio

*Phase 1 study in healthy volunteers 6 magenta



MGTA-145

Clinically validated through Phase I data in healthy volunteers readthrough for donors and patients

*Phase 1 study in healthy volunteers () magenta



MGTA-456

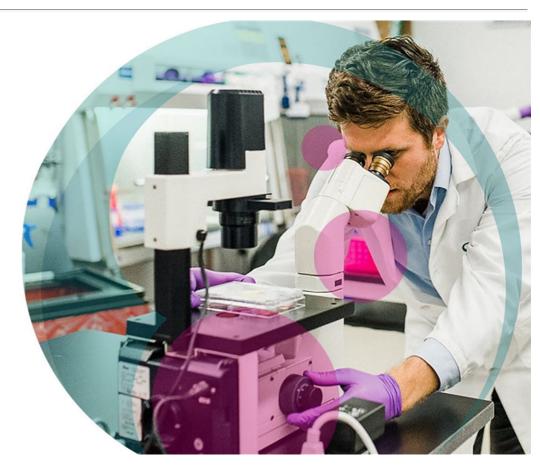
New Phase II data deliver rapid and durable resolution of disease in patients with IMD – beyond benefit seen with gene therapies

*Phase 1 study in healthy volunteers 6 magenta

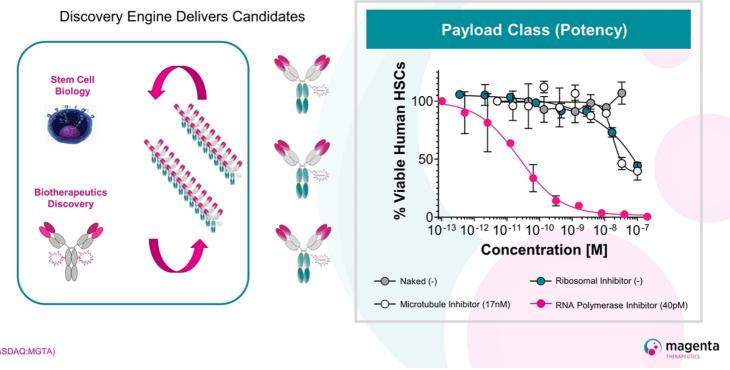




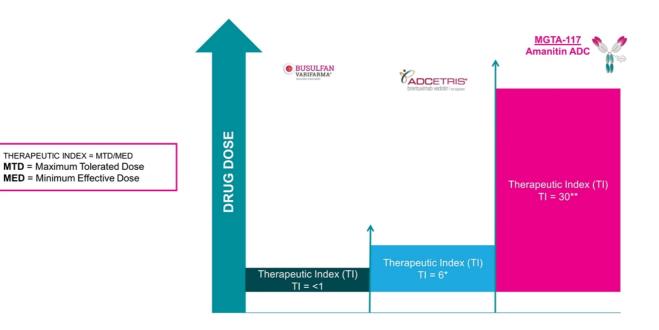
Delivering Immune Reset to Patients



Platform Screening of Agents and ADC Payloads for Human Stem Cell Potency



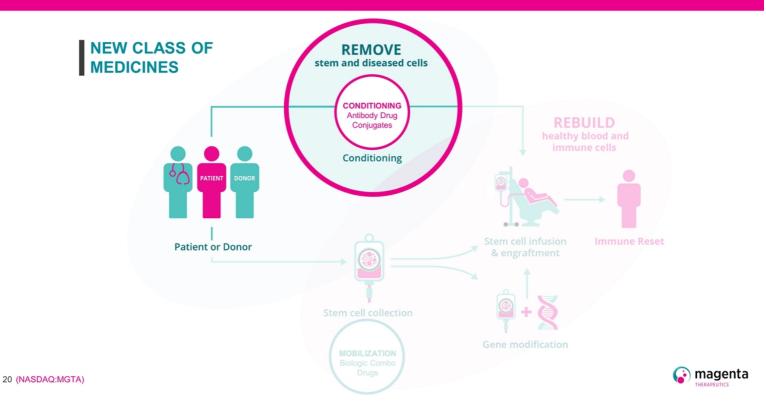
Platform Screening Magenta ADCs in Primates



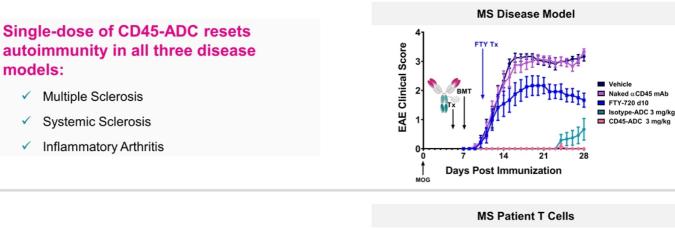
19 (NASDAQ:MGTA)

🕝 magenta

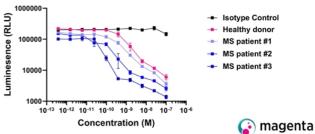
Magenta will Revolutionize Immune Reset for All Patients



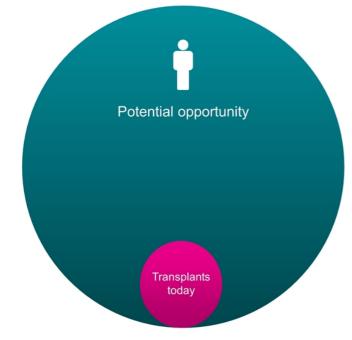
A Single Dose of CD45-ADC Enables Immune Reset to Treat Autoimmune Disease



Highly active on disease-causing T cells from patients



Autoimmune Disease Future



Next steps for CD45-ADC

GMP manufacturing started

Advance IND-enabling studies

Initiate Phase I/II clinical trials in patients

22 (NASDAQ:MGTA) * Not to scale



CD117-ADC is a Medicine for Blood Cancers and Genetic Diseases (with Gene Therapy)

A single dose of CD117-ADC:

- ✓ robustly depleted stem cells in vivo
- ✓ spared the immune system
- ✓ was well-tolerated
- ✓ was cleared rapidly to allow for optimal timing

Transplant and gene marking was successful

Results validate ADC modality and CD117 target

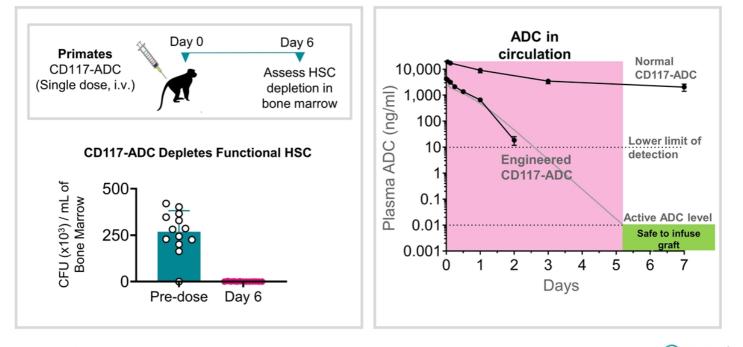
23 (NASDAQ:MGTA)



Therapeutic Index (TI) TI = 30**



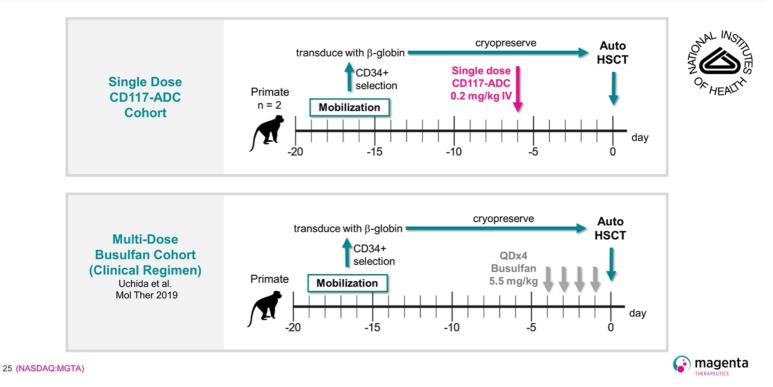
Single Dose of CD117-ADC Selectively Depletes Stem Cells in Primates and is Rapidly Cleared



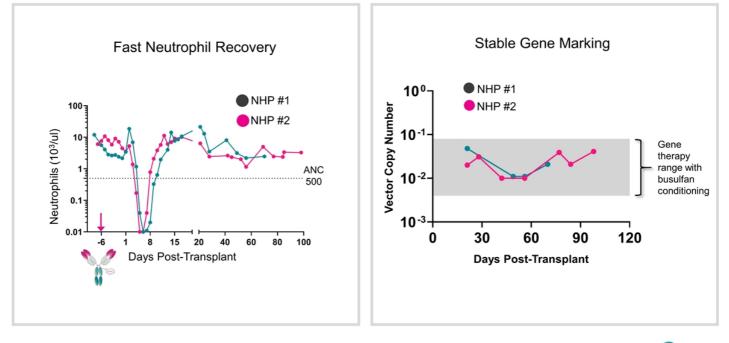
24 (NASDAQ:MGTA)

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First Successful Autologous Transplant and Gene Therapy in Primates Conditioned without Chemotherapy



Single Dose of CD117-ADC is Sufficient to Enable Gene Therapy and Transplant in Primates



26 (NASDAQ:MGTA)

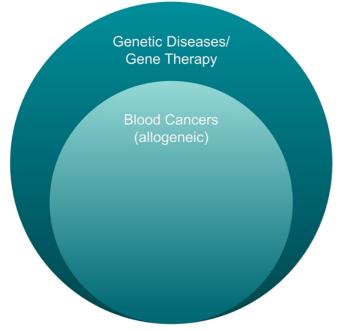
😱 magenta

CD117-ADC is Well-Tolerated in Primates

Busulfan Side Effects	Outcomes With CD117-ADC	
Emesis	Not observed	
Diarrhea	Not observed	
Mucositis	Not observed	
Wasting Syndrome	Not observed	
Seizures	Not observed	
Veno-occlusive Disease	Not observed	
Pulmonary Fibrosis	Not observed	

27 (NASDAQ:MGTA)

CD117-ADC Future



28 (NASDAQ:MGTA)

Next steps for MGTA-117

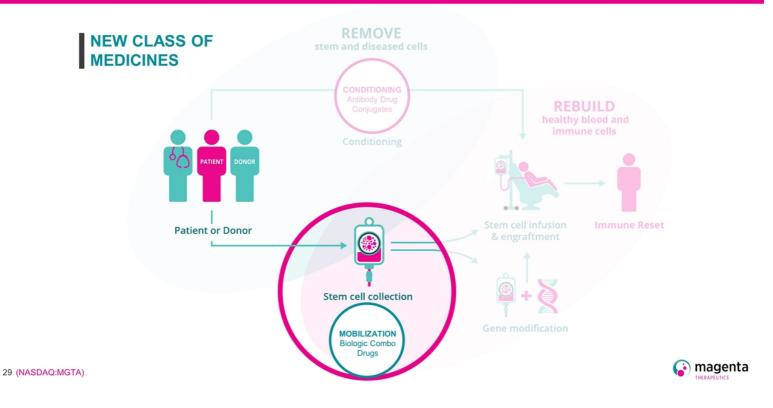
Complete GMP manufacturing

Complete GLP tox study

Begin clinical trial in patients



Magenta will Revolutionize Immune Reset for All Patients











lf >20 CD34+/mL, apheresis



lf not, 2-4 more days of G with P added



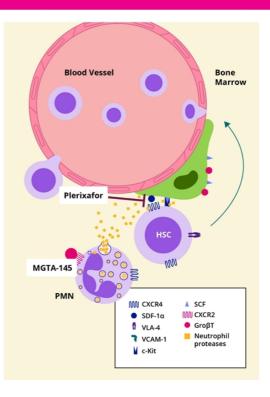
Blood draw then apheresis

30 (NASDAQ:MGTA)

MGTA-145: A Novel Medicine

✓ Faster mobilization

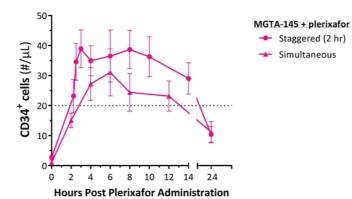
- ✓ Safer for donor
- ✓ Higher quality stem cells





31 (NASDAQ:MGTA)

MGTA-145 Demonstrates Single Agent Activity and Leads to Robust Mobilization of CD34+ Cells in Healthy Subjects in Combination with Plerixafor



Mobilization Regimen	MGTA-145 dose (mg/kg)	Timing	Peak CD34+ (#/µL) Median (range)	% ≥ 20 /µL
MGTA-145 + plerixafor	0.03	Staggered (2hr)	<mark>40 (18-63)</mark>	83% (5/6)
		Simultaneous	26 (20-70)	100% (6/6)
Plerixafor	0	-	24 (13-78)	58% (7/12)

32 (NASDAQ:MGTA)

MGTA-145 + Plerixafor Enabled Single-Day Dosing, Mobilization and Collection of Robust Numbers of CD34+ Cells

Subject	Total CD34+ Yield (x10 ⁶ cells)	Body weight (kg)	CD34+/kg (x10 ⁶ cells)	CD90+ (%)ª
801	319	78.3	4.1	39%
807	322	72.6	4.4	41%
817	500	94.2	5.3	26%
821 ^b	239	89.6	2.7	19%
Median	321	-	4.3	33%
Clinical threshold for transplant:		≥ 2.0		

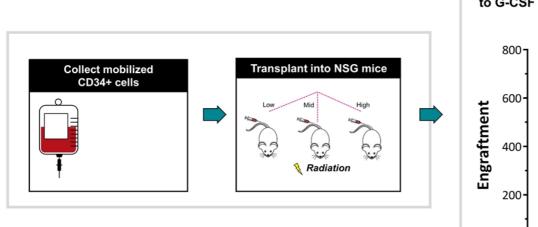
^a CD90+ (%) represents the percentage of collected CD34+ cells that were CD90+ CD45RA⁻.

Approximately 10% of G-CSF-mobilized CD34+ cells are CD90+ CD45RA⁻ based on internal data (n=2). ^b Subject 821 completed 13L (65%) of the planned 20L apheresis.

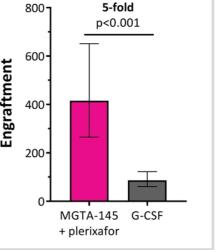
33 (NASDAQ:MGTA)



Human CD34+ Cells from Healthy Subjects Mobilized with MGTA-145 + Plerixafor Rapidly Engraft in Humanized Mouse Model



Superior Engraftment compared to G-CSF mobilized CD34+ cells



34 (NASDAQ:MGTA)

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MGTA-145: Single-Day Dosing and Collection of High-Quality Stem Cells

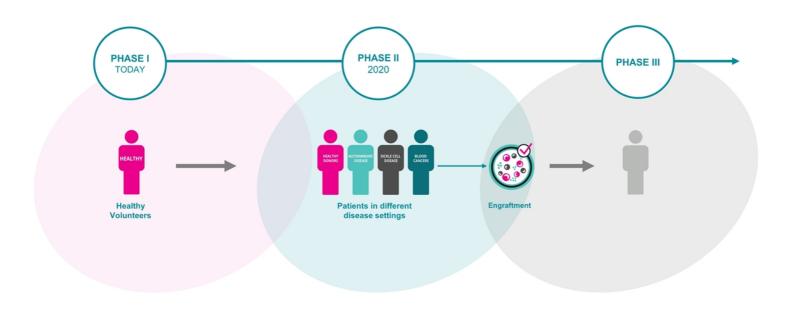
- ✓ Faster mobilization
- ✓ Safer for donor
- ✓ Higher quality stem cells



has the potential to scale immune reset via transplant for autoimmune diseases, genetic diseases and blood cancers.

35 (NASDAQ:MGTA)

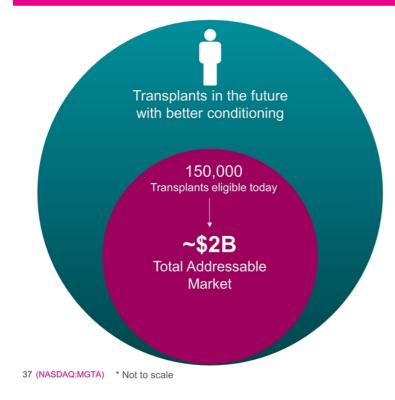
MGTA-145 Clinical Development Path



36 (NASDAQ:MGTA)

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Stem Cell Mobilization Future



Next steps for MGTA-145

Complete Phase I trial

Initiate Phase II studies in patients

Demonstrate engraftment of CD34+ cells in patients

Dialogue with agencies on registration study





Key Goals and Milestones Ahead in 2020

MGTA-117	Complete manufacturing and prepare to enter clinical trials
CD45-ADC	Advance GMP manufacturing
MGTA-145	Launch Phase II studies to show engraftment in patients
MGTA-456	Complete Phase II trial and define registration path in US and Europe

(NASDAQ: MGTA)

Large, Growing Market Opportunity and Commercial Ecosystem

Focused commercial footprint

Synergy across Magenta portfolio

Menu of medicines tailored for patients

Transplant physicians are primary decision makers



Source: Huron Consulting Research, 2017 * National Marrow Donor Program ** Joint Accreditation Committee – ISCT & EBMT

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* * * * * * * *

US & EU Transplant Centers Are Concentrated; 20% of Centers Perform 50% of Transplants

> ~170 Total NMDP* Accredited US Centers



~205 Total JACIE** Accredited Centers



Long-Term Vision for Total Patient Care and Cures



The Promise of a One-Time Curative Therapy





(NASDAQ:MGTA)