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 7, 2019

MAGENTA THERAPEUTICS, INC.
(Exact name of registrant as specified in its charter)

Delaware	**001-38541**	**81-0724163**
(State or other jurisdiction of incorporation or organization)	**(Commission File Number)**	**(I.R.S. Employer Identification Number)**

100 Technology Square
Cambridge, Massachusetts 02139
(857) 242-0170
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

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)

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

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

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 7.01. Regulation FD Disclosure.

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, 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, except as expressly set forth by specific reference in such filing.

Jason Gardner, the Chief Executive Officer of Magenta Therapeutics, Inc. (the "Company"), will present at the 37th Annual J.P. Morgan Healthcare Conference in San Francisco on January 9, 2019 at 9:30 a.m. PST. The presentation will be accessible by a live audio webcast through the Company's website at www.magentatx.com and a copy of the presentation slide deck is being furnished as Exhibit 99.1 to this Current Report on Form 8-K.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits.

The following exhibit relating to Item 7.01 shall be deemed furnished, and not filed:

Exhibit No.	Description
99.1	Copy of Magenta Therapeutics, Inc. slide presentation dated January 2019.

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 7, 2019

By: /s/ Jason Ryan
Title: Chief Operating and Financial Officer

Exhibit 99.1

Magenta Therapeutics

January 2019

Forward-Looking Statements

This presentation contains forward-looking statements and information. The use of words such as "anticipate," "believe," "estimate," "expect," "intend," "may," "plan," "predict," "project," "target," "potential," "will," "would," "could," "should," "continue," and similar expressions, constitute forward-looking statements within the meaning of The Private Securities Litigation Reform Act of 1995.

Actual results may differ materially from those indicated by such forward-looking statements as a result of various important factors, including: 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; 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; other matters that could affect the availability or commercial potential of Magenta's therapeutic candidates; and other factors that could affect Magenta's ability to secure future funding to its operating expenses and capital expenditure requirements.

Any forward-looking statement 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.

The Promise of a One-Time Curative Therapy

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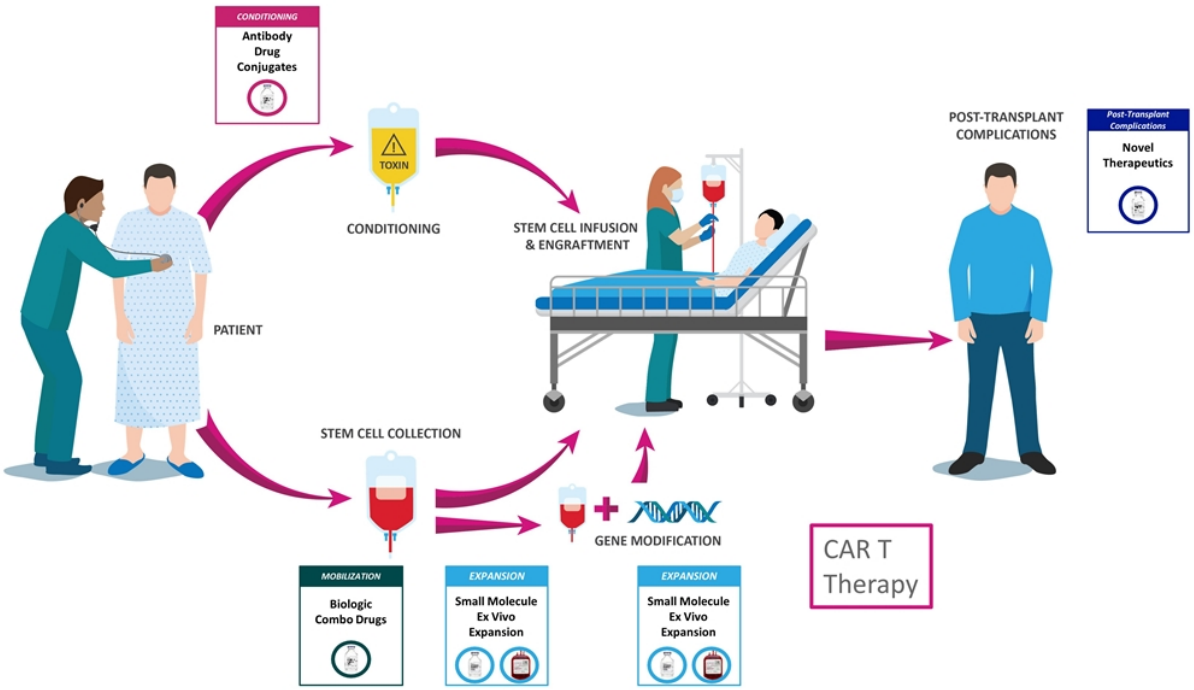
Bone Marrow Transplant: The Patient Journey to a Cure



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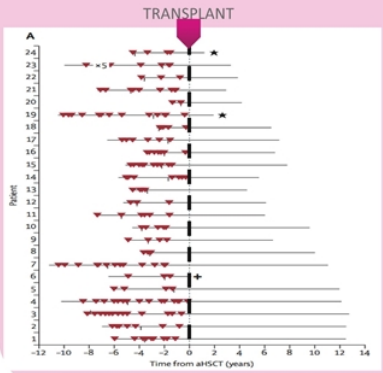
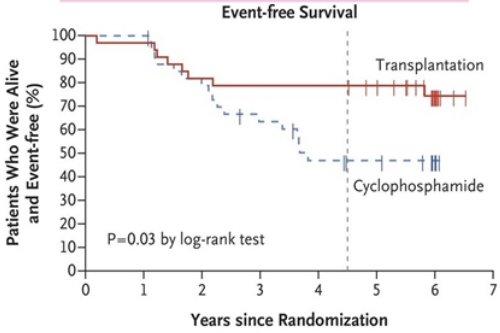
The Rising Impact of Transplant-Based Therapies: Autoimmune Disease

Multiple Sclerosis
>2000 pts transplanted



Atkins et al, Lancet 2016

Systemic Sclerosis
>1000 pts transplanted



Sullivan et al, NEJM 2018

- Crohn's Disease
- Type I Diabetes
- Systemic Lupus Erythematosus

Barriers: Conditioning and Mobilization

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The Rising Impact of Transplant-Based Cell and Gene Therapies

Gene Therapy

1 approved medicine

Clinical trials for more than 20 diseases

7 programs for SCD

Barriers: conditioning, mobilization, cell dose

CAR T

2 approved medicines

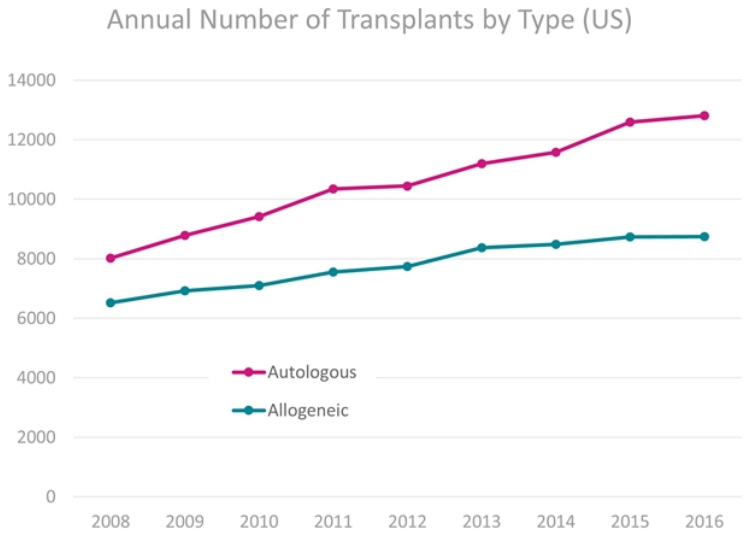
>240 ongoing clinical trials

Barriers: conditioning

The Rising Use of Transplant-Based Therapies for Blood Cancers

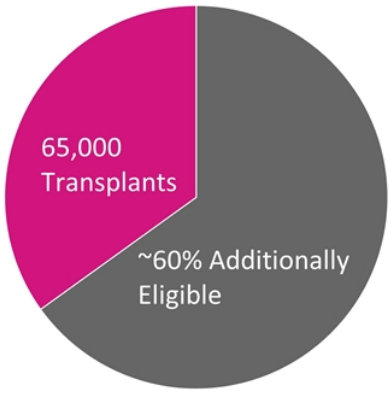
Increased number of transplants, curative benefit

Barriers: Conditioning, finding matched donor/cell dose (>50% patients do not get a matched donor)



Barriers to Transplant Limit Eligible Patients Who Could Benefit Today

Only ~40% of Eligible Patients Are Transplanted Today*



Not to scale

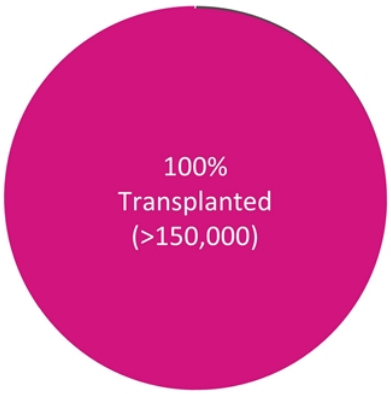
*Based on treatment protocols in eight diseases that comprise ~70% of total transplants (NHL, MM, AML, MDS, IMDs, SCD, MS, and SSc)

Barriers to Transplants for Patients

- ✕ Toxic conditioning
- ✕ Matched donors
- ✕ Graft versus host disease (GVHD)

Magenta's Portfolio Could Allow Every Eligible Patient to Benefit

Potential for All Eligible Patients to Be Transplanted

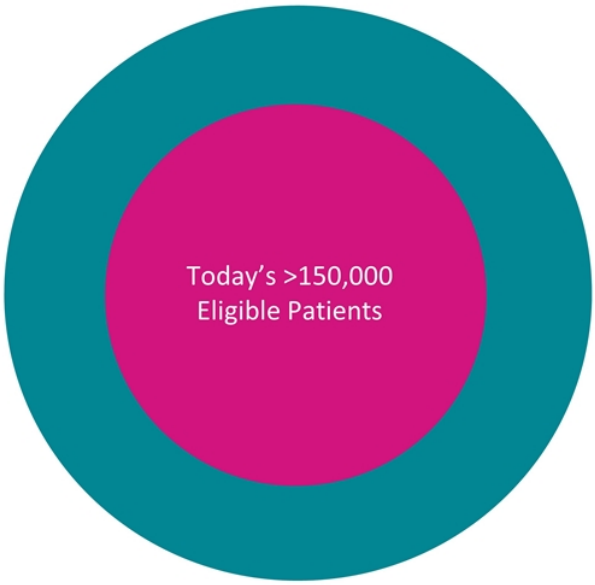


Not to scale

Magenta Portfolio Addresses Transplant Barriers

- ✓ Targeted conditioning
- ✓ Higher cell doses
- ✓ Better-matched cells
- ✓ Prevent GVHD
- ✓ Increased system capacity

Magenta's Portfolio Could Allow More Patient Cures, Earlier in Disease Course



Not to scale

With Increasing Experience with Transplant and Magenta Medicines

- Potential to move transplant earlier in treatment paradigm
- Increase patient eligibility
- Grow transplant-addressable population

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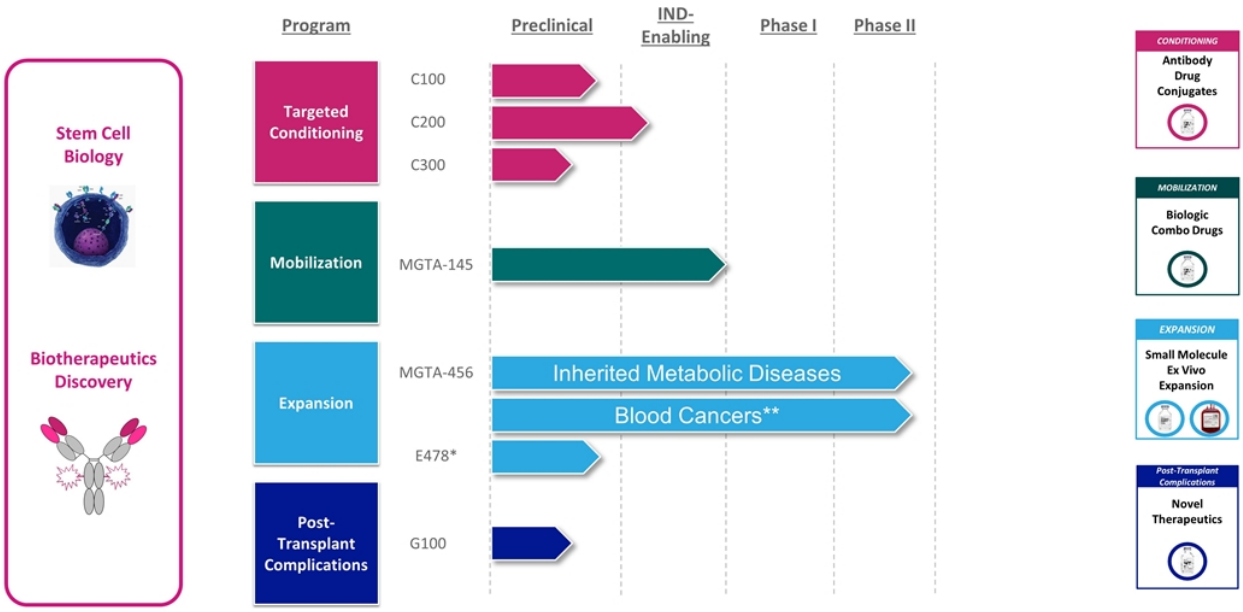
Magenta Engine Drives Innovative Programs



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* To be developed in partnership for E478-expanded gene therapies
** Investigator-initiated study

2018: A Transformative Year for Magenta

Pipeline Progress

- Built unique platform for targeted conditioning
- Selected first development candidate for targeted conditioning (C200)
- Completed IND-enabling studies for first-line mobilization product candidate, MGTA-145
- Initiated Phase 2 study of cell therapy MGTA-456 in inherited metabolic disorders
- Phase 2 study of MGTA-456 in blood cancers opened

Corporate Progress

- Presented 9 abstracts across portfolio at ASH
- Issued patents for conditioning and mobilization to further strengthen IP portfolio
- Strengthened executive team
- Raised $150M in IPO and Series C
- Cash runway through end of 2020

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Key Takeaways Today

- Potential patient impact
- Next steps for each program
- Near-term milestones and long-term path

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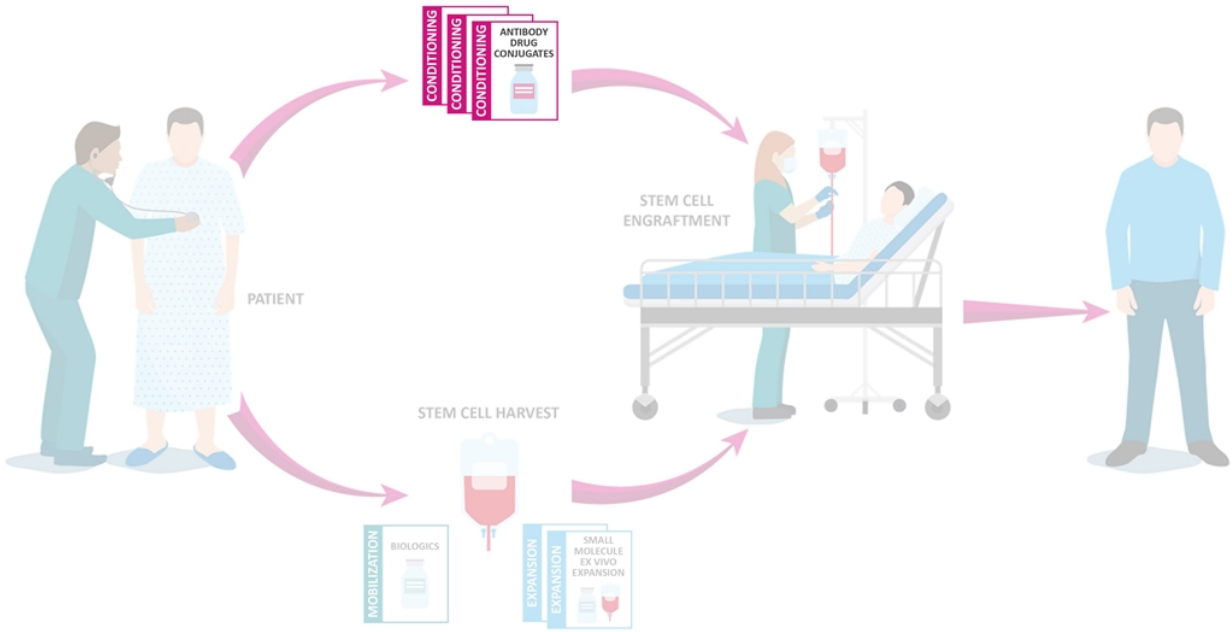
Targeted Conditioning: Transforming Patient Preparation for Transplant, Gene Therapy and CAR T



An Overdue Revolution in Patient Preparation

Current Agents

- Old
- Not selective
- Toxic

Severe Side Effects

- Organ toxicity
- Cancers
- Infertility
- Death

Magenta Conditioning

Deplete stem cells
- Make space for incoming donor stem cells

Deplete immune cells
- Prevent rejection by host immune cells

Deplete disease-causing cells
- Prevent relapse in blood cancers
- Remove pathogenic immune cells in autoimmune disease

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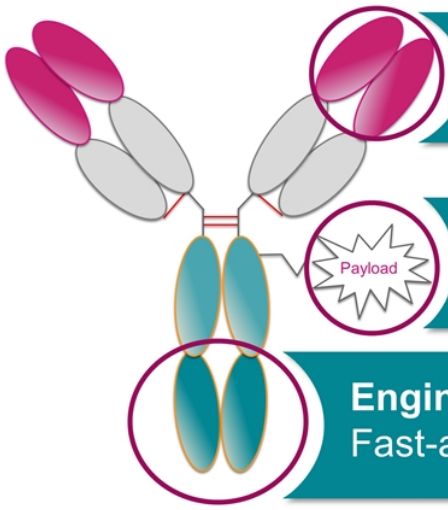
Innovative Platform Designed for Targeted Patient Conditioning



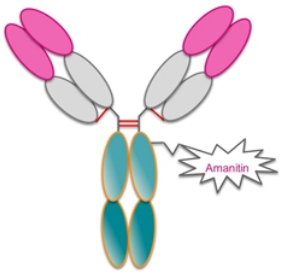
Selective:
Binds only to target cells

Potent:
Depletes target cells

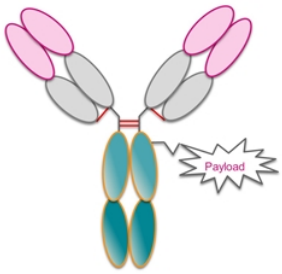
Engineered:
Fast-acting and safe

New Targeted Agents for Conditioning – Two Profiles

	C200
Lead target	CD117
Cells removed	Stem cells Disease-causing cells
Diseases	Blood cancers Genetic diseases (gene therapy)



	C100
Lead target	CD45
Cells removed	Stem and immune cells Disease-causing cells
Diseases	Autoimmune diseases Blood cancers



A Single Dose of C200 or C100 Selectively Removes Target Cells in Non-human Primates

CONDITIONING

C200
Stem cell depletion

C100
Stem cell
+Immune depletion

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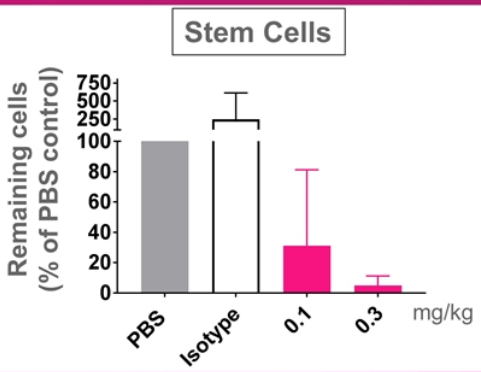
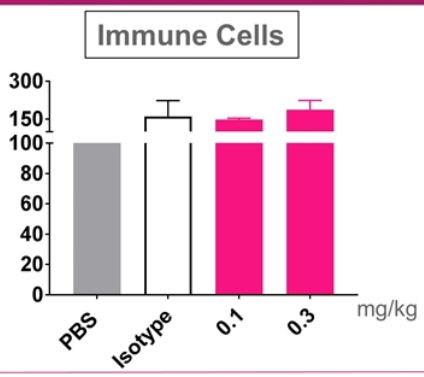
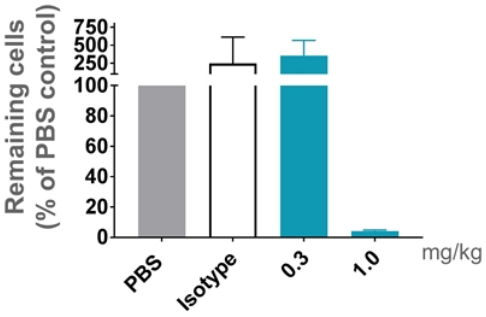
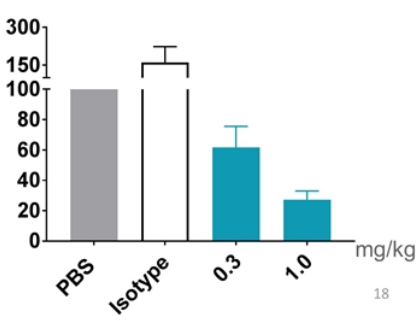








C200 Development Candidate is Well Tolerated in Non-Human Primates

Effective dose of C200
or Busulfan

C200

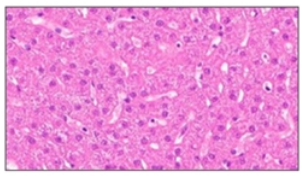
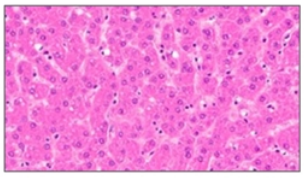
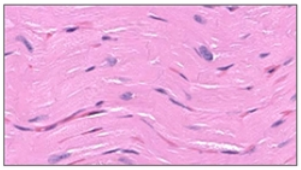
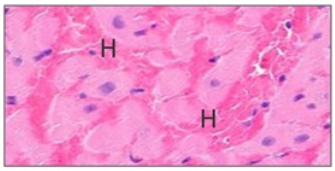
All animals healthy

All tissues normal

Busulfan

No animals survived

Multiple organs damaged

	Control	C200	Control	Busulfan
Liver (10x)				
Heart (10x)				

Stain: Hematoxylin &Eosin
H: Hemorrhage

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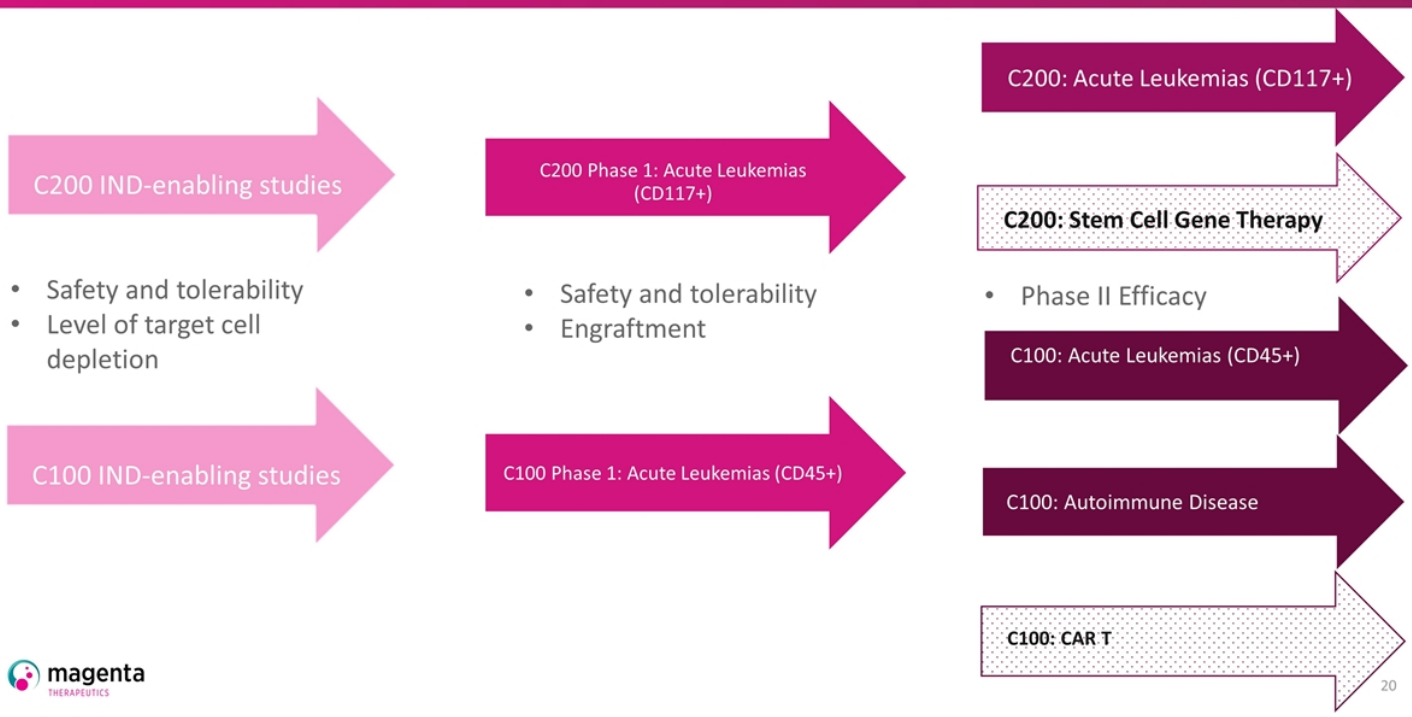
Clinical Development Paths for C200 and C100

CONDITIONING



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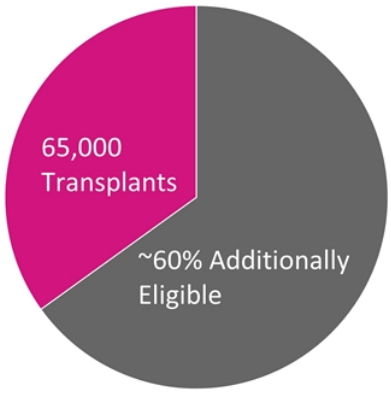
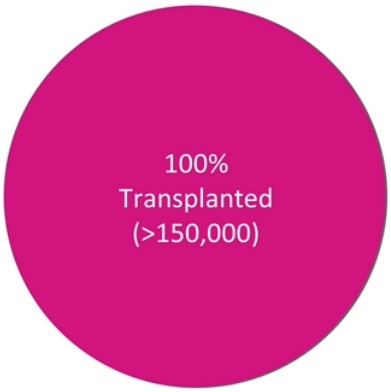
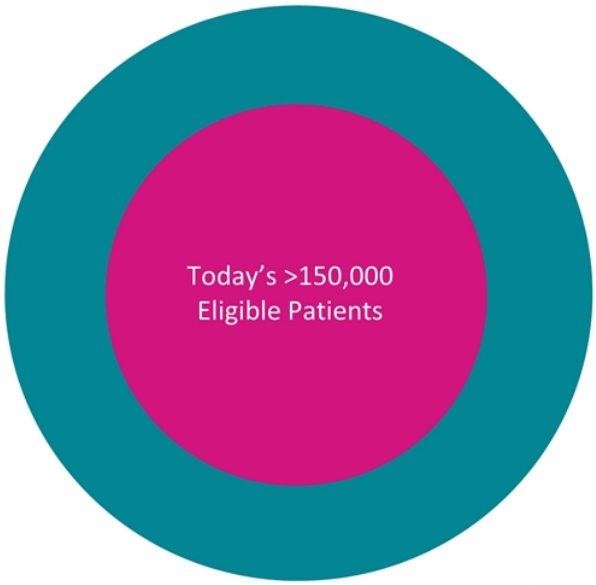
Targeted Conditioning Programs Will Have Significant Patient Impact







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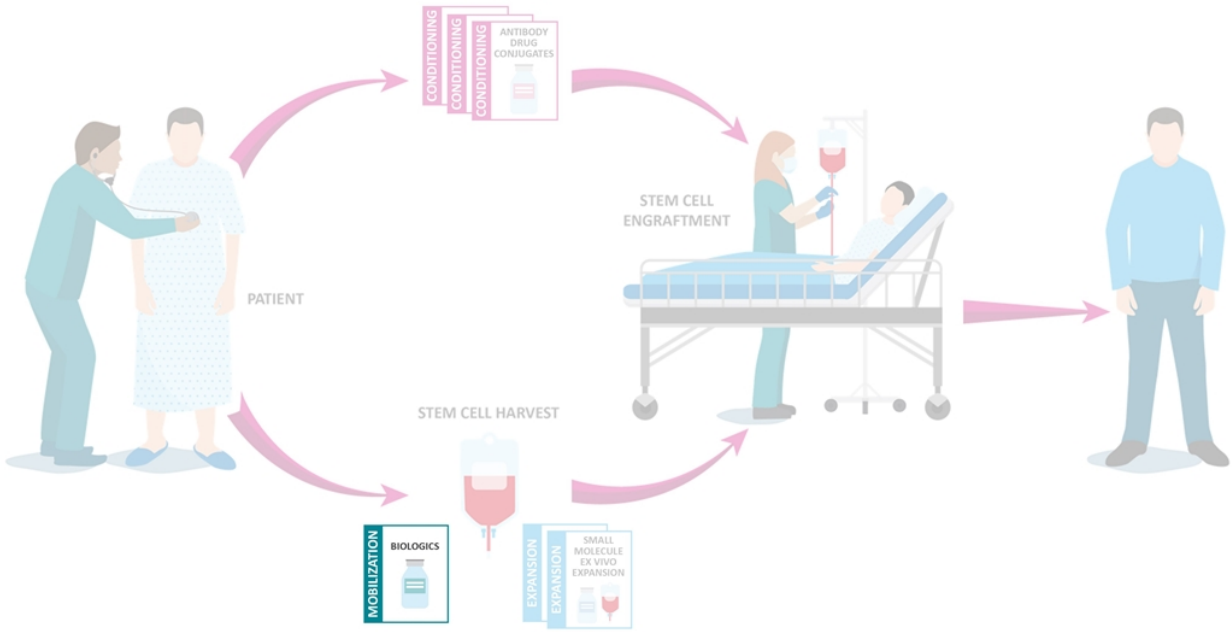
Magenta Will Optimize Stem Cell Collection



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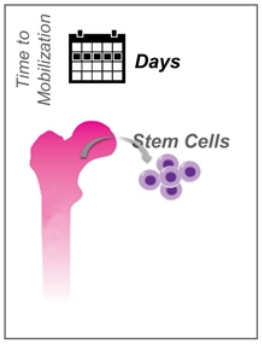
MGTA-145 Mobilization Addresses Challenges for Donors and Patients Plus Increases Transplant Center Capacity

G-CSF Induced Mobilization



Limitations to current Standard of Care

- Requires 4-6 days
- Unpredictable yields
- Side effects
- Not used in some diseases

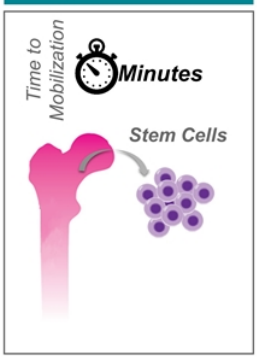
65,000 transplants annually
70% use mobilized peripheral blood
50% of potential donors decline to donate

Benefits of novel mobilization regimen

- Mobilize higher doses of high-quality stem cells for better transplant outcomes
- Shorten time required for mobilization
- Streamline collection logistics and operations
- Fewer adverse events
- Broad utility across blood cancers, autoimmune diseases and genetic diseases

Significant opportunity for a predictable and reliable first-line mobilization agent that enables same-day apheresis

Magenta Mobilization



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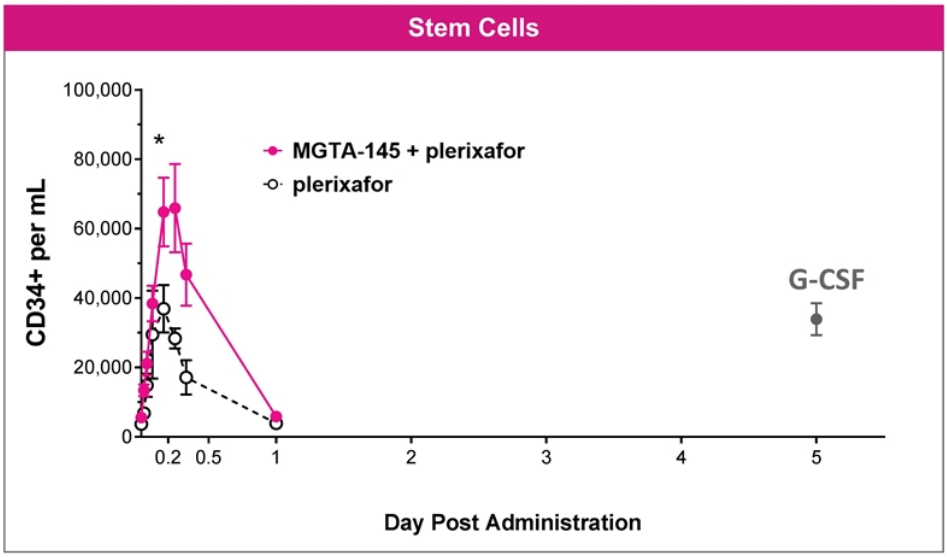
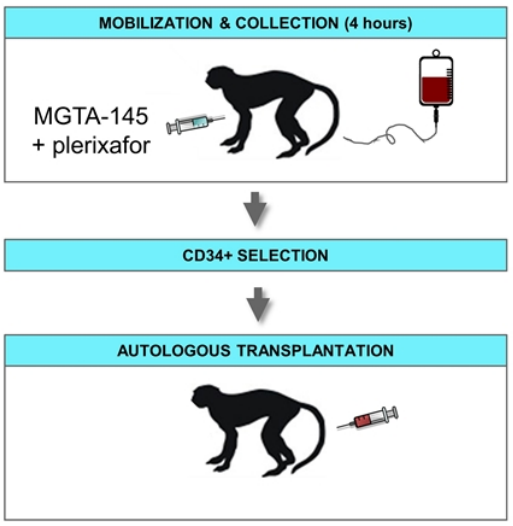
A Single Injection of MGTA-145 + Plerixafor Rapidly Mobilizes Large Numbers of Stem Cells in Nonhuman Primates

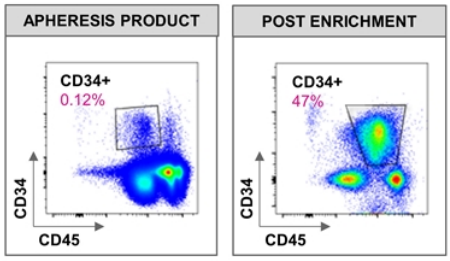


A Single Injection of MGTA-145 + Plerixafor Rapidly Mobilizes Sufficient Cells for Transplant in Four Hours

EXPERIMENTAL DESIGN



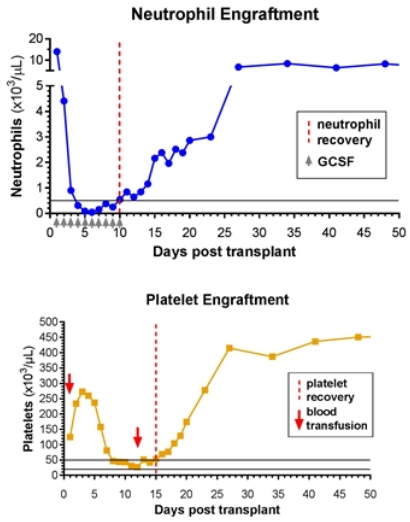
MOBILIZATION & COLLECTION



4 Hour Collection

CD34+ Stem cell yield: 2.3×10^6 / kg

AUTOLOGOUS TRANSPLANT



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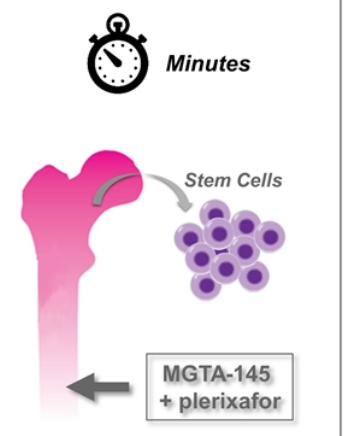
In collaboration with Dr. Hans-Peter Kiem; Fred Hutch Inst.

MGTA-145: Ideal Mobilization Agent to Scale Transplant

Magenta Mobilization



BENEFITS OF MGTA-145 + PLERIXAFOR

DONOR/PATIENT AND CENTER

Single injection of MGTA-145 + plerixafor

PATIENT AND PHYSICIAN

- Rapid and robust mobilization of stem cells
- Rapid engraftment
- Mobilized cells block graft vs host disease

MGTA-145 + plerixafor is moving into the clinic in the first half of 2019

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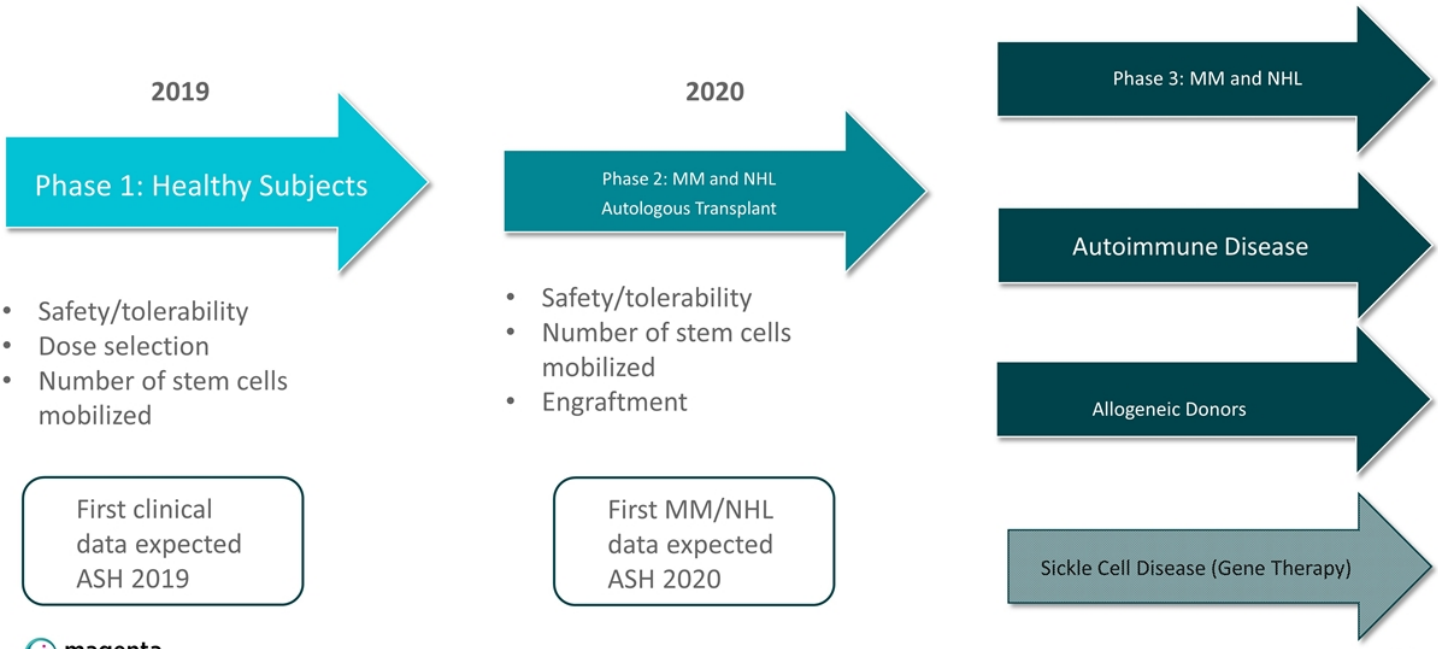
Next Steps for MGTA-145



- Safety/tolerability
- Dose selection
- Number of stem cells mobilized

First clinical data expected ASH 2019

- Safety/tolerability
- Number of stem cells mobilized
- Engraftment

First MM/NHL data expected ASH 2020

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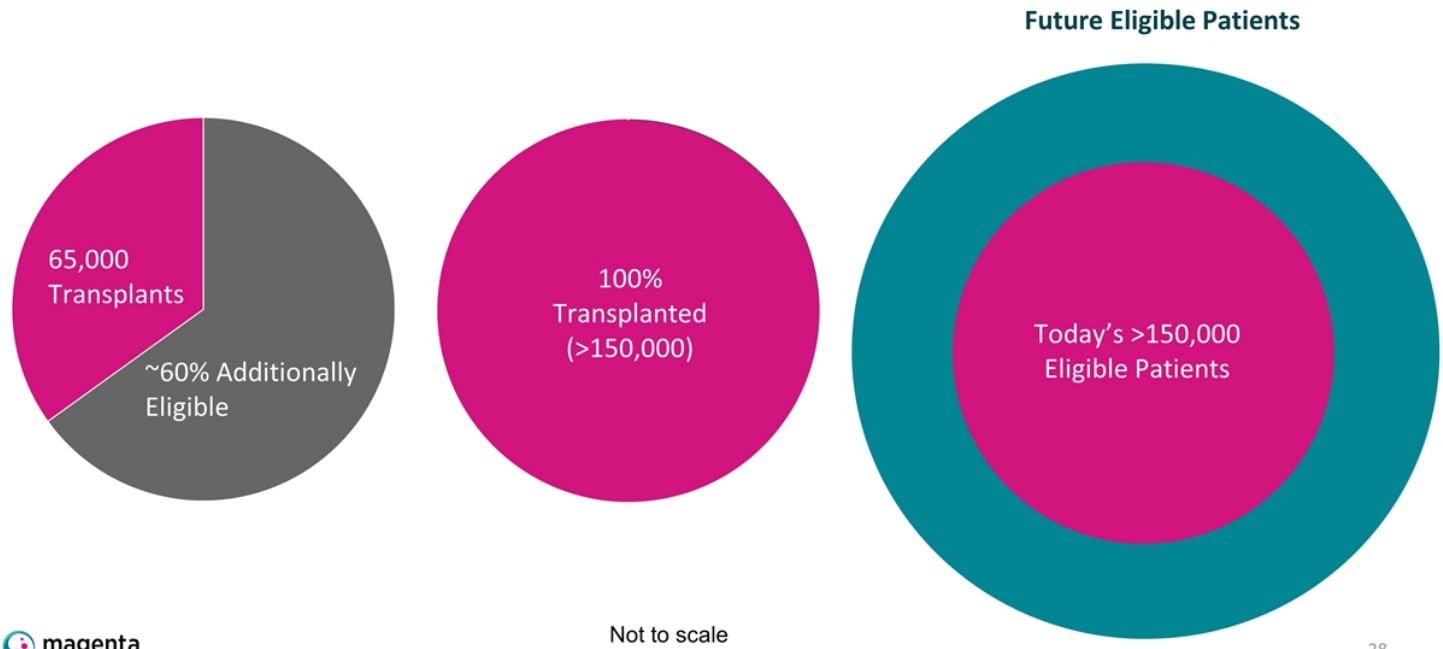
MGTA-145 Will Have Significant Impact in both Allogeneic and Autologous Transplant and Gene Therapy

MOBILIZATION



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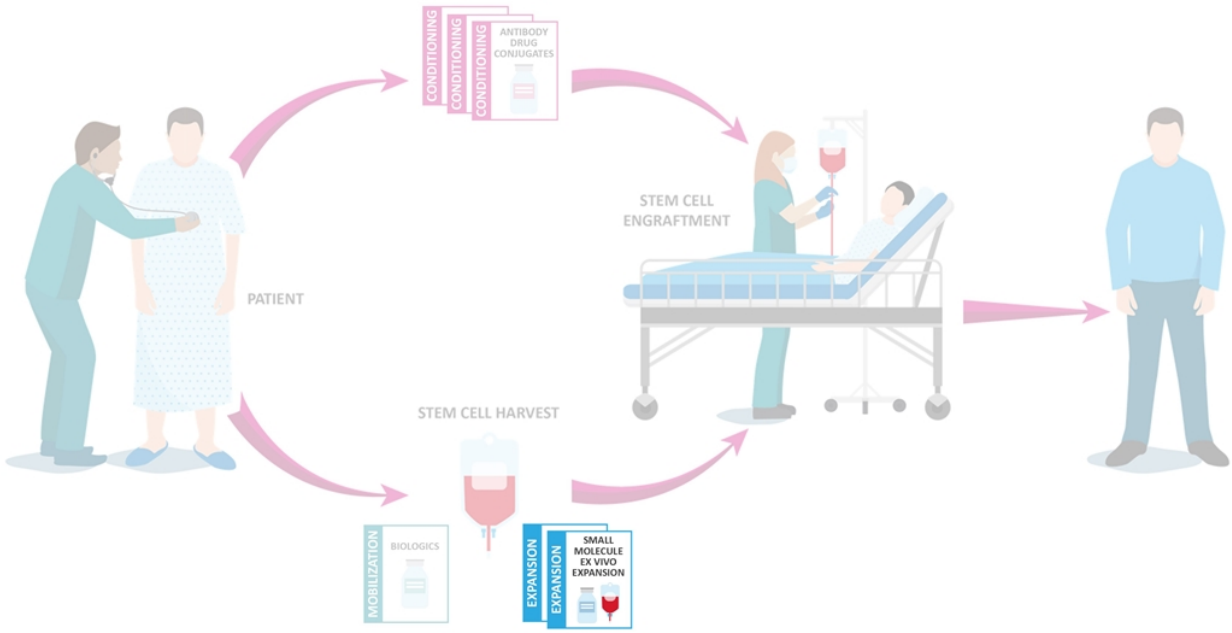
Magenta Expansion Will Enable More Patients to be Transplanted



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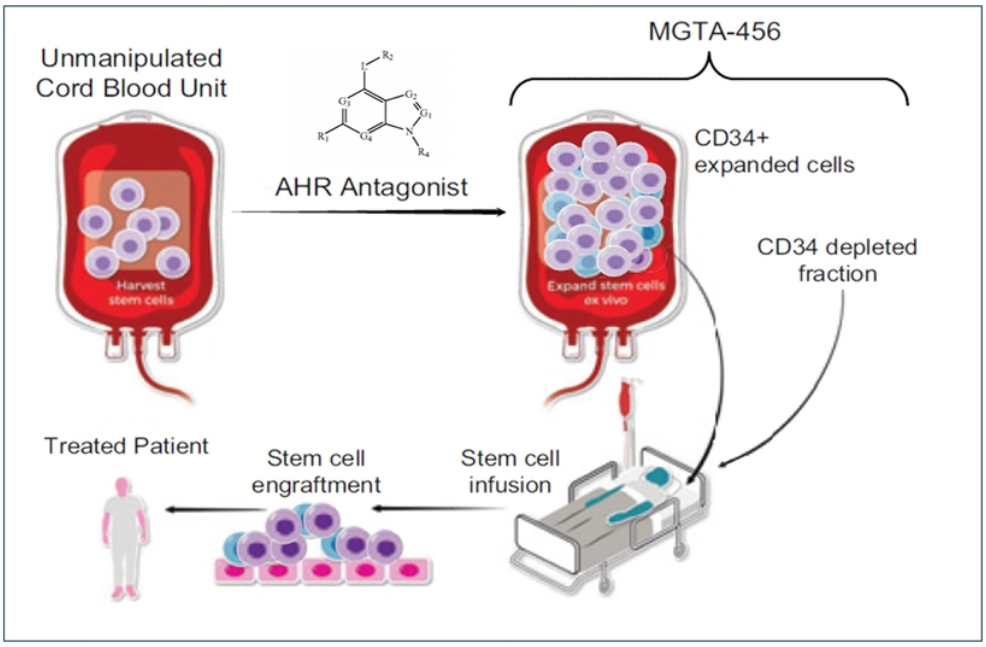
MGTA-456 Enables Better Matched Transplants, Larger Cell Doses

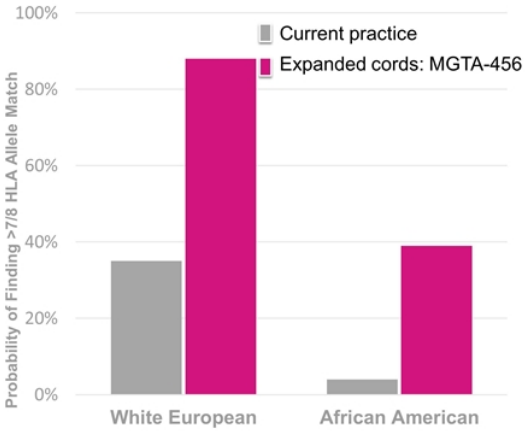


MGTA-456 Enables Better Matched Transplants, Larger Cell Doses

Percent of cord blood inventory suitable for adults

Source: CIBMTR report on inventory and adult donor models, 2014

Percent of patients with better matched units

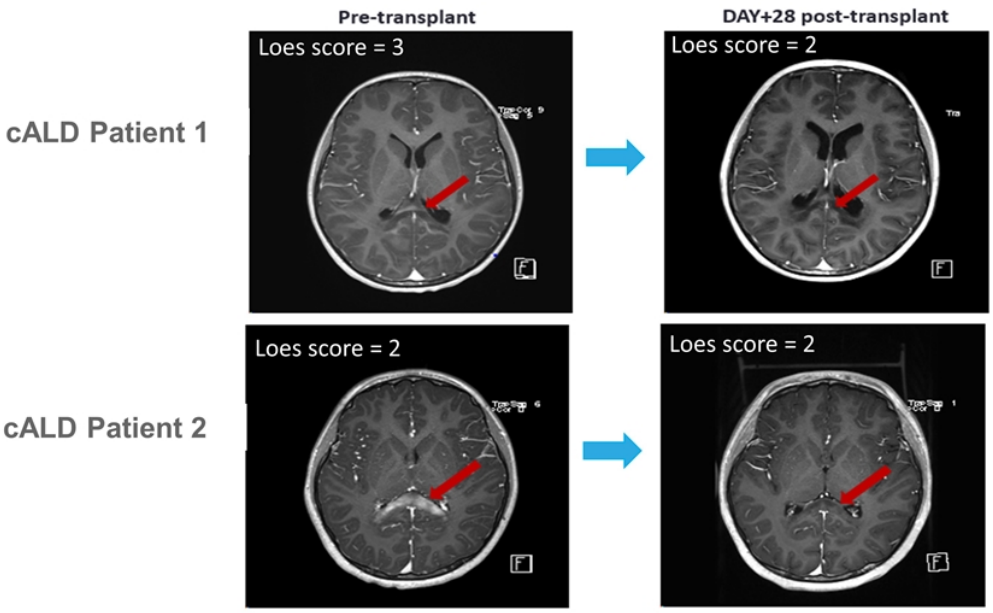


36 Patients Treated in Phase I/II Hem/Onc Study

5 Patients Treated in Phase II IMD Study

100% of patients engrafted

Rapid Resolution of Brain Inflammation in Patients with cALD



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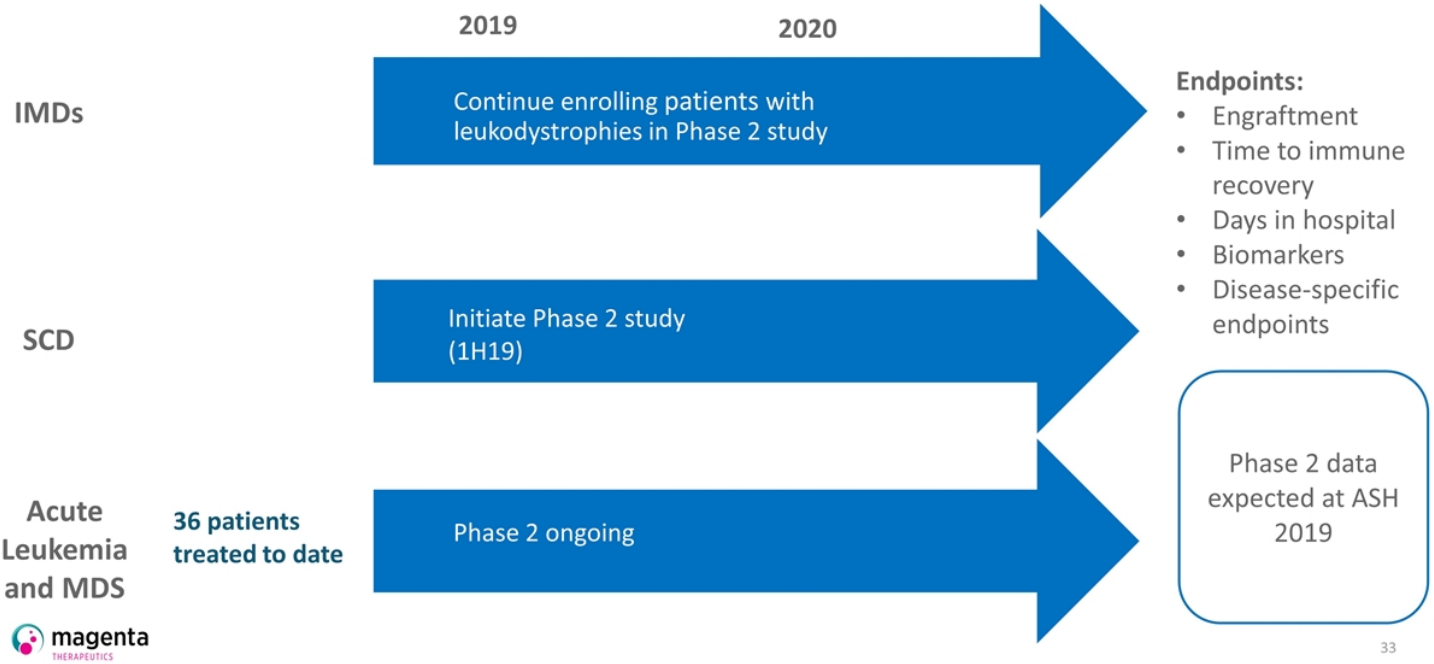
Contrast enhancement in brain MRI images from cALD patients at screening and at day +28 post-transplant showing resolution. Red arrows indicate areas of inflammation on screening and resolution of contrast-enhancement by day +28.

Next Steps for MGTA-456

EXPANSION



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Concluding Remarks

Key Takeaways Today

- Potential patient impact
- Next steps for each program
- Near-term milestones and long-term path

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2019-2020: Focused Execution on Value-Driving Programs

2019

- C200 IND-enabling data
  - C200 gene therapy preclinical data
- C100 development candidate
  - C100 autoimmune preclinical data
- MGTA-145 Phase 1 data
- MGTA-456 Phase 2 data

2020

- C200 IND filed
- C100 IND-enabling data
- MGTA-145 Phase 2 data in MM and NHL
- Additional MGTA-456 clinical data

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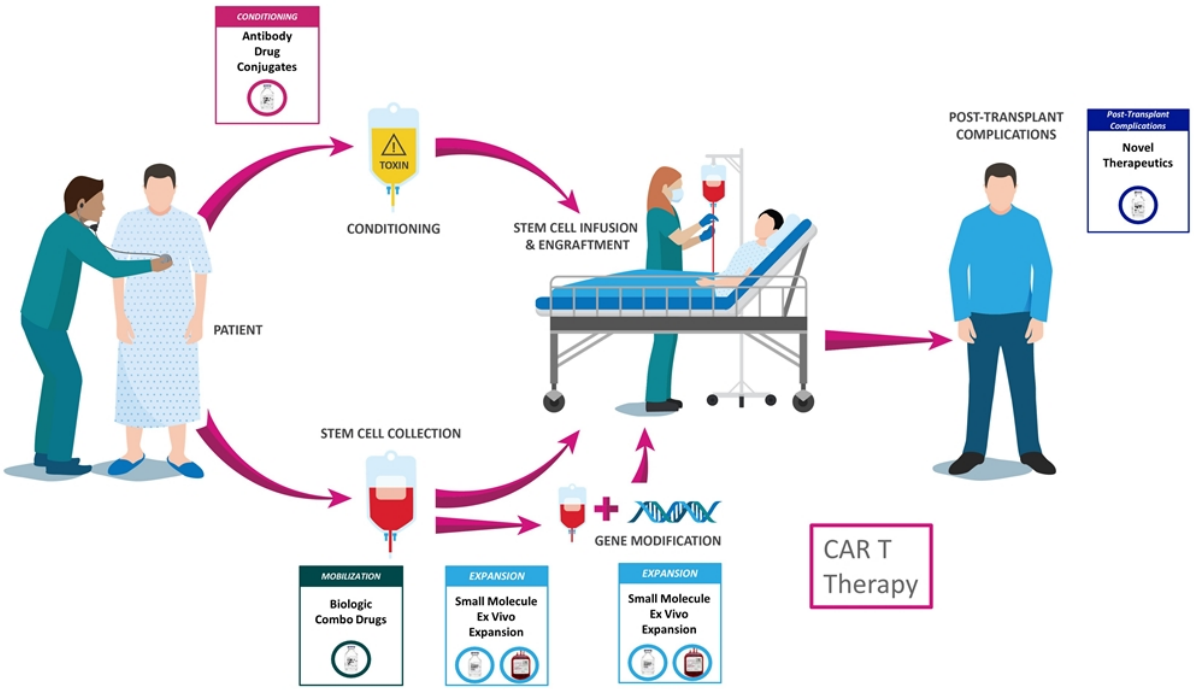
Bone Marrow Transplant: The Patient Journey to a Cure



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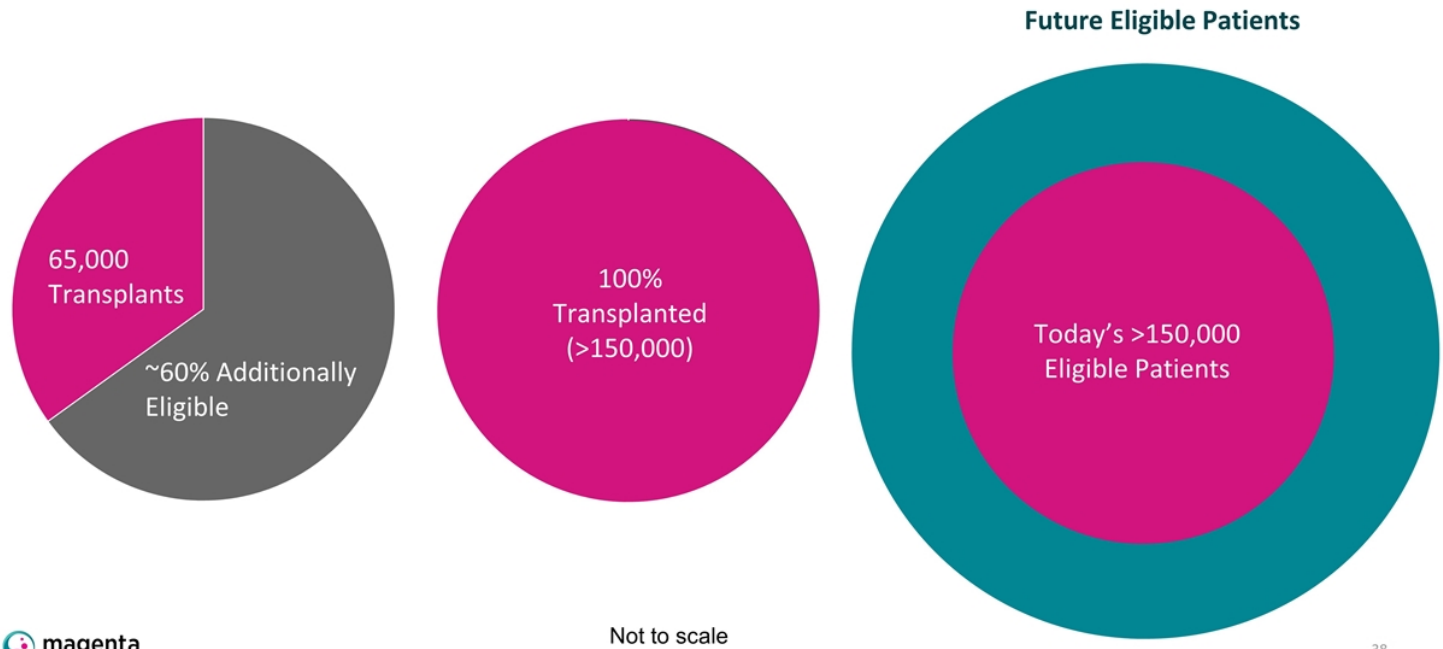
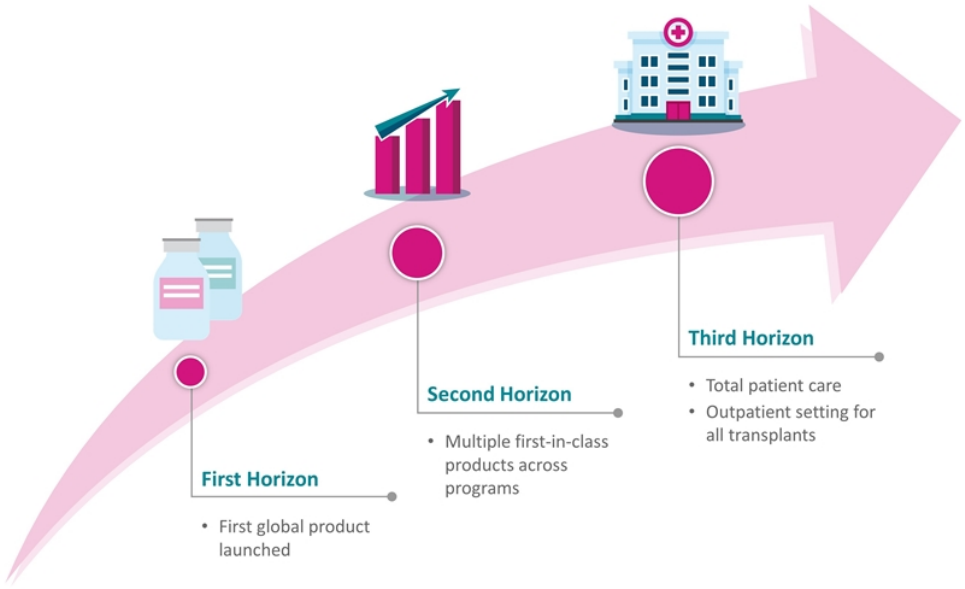
Magenta Therapeutics: Transforming the Field of One-Time Curative Therapies



Not to scale

Magenta Vision: Integrated Company for Total Patient Care and Cures



The Promise of a One-Time Curative Therapy

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