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): January 10, 2023

JASPER THERAPEUTICS, INC.
(Exact Name of Registrant as Specified in its Charter)

Delaware	001-39138	84-2984849
(State or Other Jurisdiction of Incorporation)	(Commission File Number)	(IRS Employer Identification No.)

2200 Bridge Pkwy Suite #102
Redwood City, California 94065
(Address of Principal Executive Offices) (Zip Code)

(650) 549-1400
Registrant's telephone number, including area code

N/A
(Former Name, or Former Address, if Changed Since Last Report)

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 240.13e-4(c))

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

(Title of each class)	(Trading Symbol)	(Name of exchange on which registered)
Voting Common Stock, par value $0.0001 per share	**JSPR**	**The Nasdaq Stock Market LLC**
Redeemable Warrants, each whole warrant exercisable for one share of Voting Common Stock at an exercise price of $11.50	**JSPRW**	**The Nasdaq Stock Market LLC**

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.

On January 10, 2023, Jasper Therapeutics, Inc. (the "Company") issued a press release announcing that, as part of an overall portfolio prioritization, the Company will focus primarily on the development of its lead product candidate, briquilimab (formerly known as JSP191), in chronic diseases and stem cell transplant for rare diseases. A copy of the press release is furnished herewith as Exhibit 99.1 to this Current Report on Form 8-K.

The Company is also furnishing an updated corporate presentation, attached as Exhibit 99.2 to this Current Report on Form 8-K (the "Corporate Presentation"), which the Company intends to post on the Company's website. The Corporate Presentation is current as of January 10, 2023, and the Company disclaims any obligation to update this material in the future.

The information in this Item 7.01, including the press release attached hereto as Exhibit 99.1 and the Corporate Presentation attached hereto as Exhibit 99.2, is being furnished under Item 7.01 of Form 8-K and 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, and it shall not be deemed incorporated by reference in any filing under the Securities Act of 1933, as amended, or the Exchange Act, except as shall be expressly set forth by specific reference in such a filing.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits.

Exhibit No.	Description
99.1	Press Release, dated January 10, 2023.
99.2	Corporate Presentation, dated January 2023.
104	Cover Page Interactive Data File, formatted in Inline Extensible Business Reporting Language (iXBRL).

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.

Date: January 10, 2023

JASPER THERAPEUTICS, INC.

By: /s/ Jeet Mahal
Name: Jeet Mahal
Title: Chief Operating Officer and
Chief Financial Officer

Jasper Therapeutics Announces Development Prioritization of Briquilimab in Chronic Diseases, including Urticaria and Lower-Risk MDS, and Stem Cell Transplant for Sickle Cell Disease and Other Rare Diseases

REDWOOD CITY, Calif., January 10, 2023 - Jasper Therapeutics, Inc. (Nasdaq: JSPR) ("Jasper" or the "Company"), a biotechnology company developing novel antibody therapies and stem cell transplant conditioning agents targeting c-Kit, today announced, as part of an overall portfolio prioritization, that the Company will focus on the development of its lead product candidate, briquilimab (formerly known as JSP191), in chronic diseases and stem cell transplant for rare diseases. This portfolio includes a new program on chronic urticaria, along with the Company's existing programs for lower-risk myelodysplastic syndrome (MDS), sickle cell disease, Fanconi anemia and severe combined immunodeficiency (SCID).

Based on preclinical and clinical studies showing inhibition of c-Kit signaling, depletion of mast cells in skin and lung and extended pharmacokinetics of subcutaneous dosing, the Company has prioritized rapidly starting a clinical study in severe chronic urticaria. In the meantime, while the Company does not have any near-term plans to initiate a Phase 3 study in AML/MDS, the Company will continue to work with the U.S. Food and Drug Administration, the transplant community and potential partners to explore development pathways and ensure briquilimab remains ready for a pivotal Phase 3 study in AML/MDS stem cell transplant.

"We are ecstatic about the growing body of clinical and scientific evidence that show briquilimab has an attractive tolerability profile in a number of potential indications and may provide clinically meaningful results for a wide range of patients, and are grateful to our team, clinical investigators, patients and external partners for helping us advance this drug into later stage trials so quickly in such a challenging environment over the past two years," said Ronald Martell, President and Chief Executive Officer of Jasper. "We believe focusing on the most well-characterized opportunities with the clearest and potentially fastest pathway to market is in the best interest of patients and our shareholders. As such, our near-term development program will consist of moving rapidly into a clinical trial in chronic severe urticaria and initiating our chronic lower-risk MDS study, while continuing recruitment in the SCID, Fanconi anemia and sickle cell disease transplant studies."

Briquilimab's potential has been consistently validated across five indications: SCID, acute myeloid leukemia, MDS, Fanconi anemia and, most recently, sickle cell disease. The Company expects new supportive data to be presented at the upcoming 2023 Tandem Meetings: Transplantation & Cellular Therapy Meetings of ASTCT and CIBMTR that will further reinforce the broad opportunity for briquilimab.

Clinical studies with briquilimab and investigational agents from other companies suggest that targeting c-Kit has strong therapeutic potential for chronic mast cell diseases such as urticaria and allergic asthma. This therapeutic approach has also shown promise in lower-risk MDS.

"We believe prioritizing these opportunities provides the best path forward to near-term, clinical milestones for patients and value creation for investors," added Mr. Martell. "We want to show as soon as possible how briquilimab's differentiated mechanism and therapeutic profile has the potential to overcome challenges encountered by other therapies in development for these indications. We also remain committed to exploring briquilimab's long-term potential to become a leading antibody targeting c-Kit for use as a standalone therapy and as a conditioning agent to help reduce the toxicity of existing conditioning approaches for cell and gene therapies."

About Briquilimab (formerly known as JSP191)

Briquilimab is a targeted, monoclonal antibody that inhibits the cell-surface receptor c-Kit, also known as CD117. It is currently being evaluated as a primary therapeutic for mast cell diseases such as chronic spontaneous urticaria (CSU), chronic inducible urticaria (CIndU), and allergic asthma, and for lower-risk MDS patients. It is also being studied as a conditioning agent for cell and gene therapies for rare diseases. To date, briquilimab has a demonstrated efficacy and safety profile in 130 dosed subjects and healthy volunteers, with clinical outcomes as a conditioning agent in severe combined immunodeficiency (SCID), acute myeloid leukemia (AML), myelodysplastic syndromes (MDS), Fanconi anemia (FA), and sickle cell disease (SCD). In addition, briquilimab is being advanced as a transformational non-genotoxic conditioning agent for gene therapy.

About Jasper

Jasper is a clinical-stage biotechnology company developing novel antibody therapies and stem cell transplant conditioning agents targeting c-Kit (CD117), an important receptor found on stem cells and mast cells. The Company's lead program is briquilimab, a first-in-class monoclonal antibody being developed as a therapeutic for chronic diseases and as a conditioning agent for stem cell transplants for rare diseases. For more information, please visit us at jaspertherapeutics.com.

Forward-Looking Statements

Certain statements included in this press release that are not historical facts are forward-looking statements for purposes of the safe harbor provisions under the United States Private Securities Litigation Reform Act of 1995. Forward-looking statements are sometimes accompanied by words such as “believe,” “may,” “will,” “estimate,” “continue,” “anticipate,” “intend,” “expect,” “should,” “would,” “plan,” “predict,” “potential,” “seem,” “seek,” “future,” “outlook” and similar expressions that predict or indicate future events or trends or that are not statements of historical matters. These forward-looking statements include, but are not limited to, statements regarding briquilimab’s potential, Jasper’s expectations regarding a potential pivotal Phase 3 study in AML/MDS stem cell transplant and Jasper’s near-term development focus. These statements are based on various assumptions, whether or not identified in this press release, and on the current expectations of Jasper and are not predictions of actual performance. These forward-looking statements are provided for illustrative purposes only and are not intended to serve as, and must not be relied on by an investor as, a guarantee, an assurance, a prediction or a definitive statement of fact or probability. Many actual events and circumstances are beyond the control of Jasper. These forward-looking statements are subject to a number of risks and uncertainties, including general economic, political and business conditions; the risk that the potential product candidates that Jasper develops may not progress through clinical development or receive required regulatory approvals within expected timelines or at all; the risk that clinical trials may not confirm any safety, potency or other product characteristics described or assumed in this press release; the risk that Jasper will be unable to successfully market or gain market acceptance of its product candidates; the risk that prior study results may not be replicated; the risk that Jasper’s product candidates may not be beneficial to patients or successfully commercialized; patients’ willingness to try new therapies and the willingness of physicians to prescribe these therapies; the effects of competition on Jasper’s business; the risk that third parties on which Jasper depends for laboratory, clinical development, manufacturing and other critical services will fail to perform satisfactorily; the risk that Jasper’s business, operations, clinical development plans and timelines, and supply chain could be adversely affected by the effects of health epidemics, including the ongoing COVID-19 pandemic; the risk that Jasper will be unable to obtain and maintain sufficient intellectual property protection for its investigational products or will infringe the intellectual property protection of others; and other risks and uncertainties indicated from time to time in Jasper’s filings with the SEC, including its Annual Report on Form 10-K for the year ended December 31, 2021 and subsequent Quarterly Reports on Form 10-Q. If any of these risks materialize or Jasper’s assumptions prove incorrect, actual results could differ materially from the results implied by these forward-looking statements. While Jasper may elect to update these forward-looking statements at some point in the future, Jasper specifically disclaims any obligation to do so. These forward-looking statements should not be relied upon as representing Jasper’s assessments of any date subsequent to the date of this press release. Accordingly, undue reliance should not be placed upon the forward-looking statements.

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Jasper THERAPEUTICS INC.

Harnessing the Power of Jasper's Differentiated c-Kit Therapeutic Approach

Nasdaq: JSPR

January 2023

Safe Harbor Statements

Forward-Looking Statements

This investor presentation and any accompanying oral presentation (together, this "Presentation") contain forward-looking statements. All statements other than statements of historical fact contained in this Presentation, including statements regarding the future opportunities and prospects of Jasper Therapeutics, Inc. (together with its subsidiary, "Jasper" or the "Company"), including milestones, business strategy, and plans and objectives for future operations, are forward-looking statements. Jasper has based these forward-looking statements on its estimates and assumptions and its current expectations and projections about future events. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those contained in the "Risk Factors" section of the Company's Annual Reports on Form 10-K for the year ended December 31, 2021, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K that the Company has subsequently filed or may subsequently file with the SEC. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this Presentation are inherently uncertain and may not occur, and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements. Accordingly, you should not rely upon forward-looking statements as predictions of future events. Jasper undertakes no obligation to update publicly or revise any forward-looking statements for any reason after the date of this Presentation or to conform these statements to actual results or to changes in Jasper's expectations.

Industry and Market Data

Certain data in this Presentation was obtained from various external sources, and neither the Company nor its affiliates, advisers or representatives has verified such data with independent sources. Accordingly, neither the Company nor any of its affiliates, advisers or representatives makes any representations as to the accuracy or completeness of that data or undertakes any obligation to update such data after the date of this Presentation. Such data involves risks and uncertainties and is subject to change based on various factors.

Trademarks

The trademarks included herein are the property of the owners thereof and are used for reference purposes only. Such use should not be construed as an endorsement of the products or services of the Company.

Briquilimab is an anti c-Kit antibody for acute and chronic therapy in multiple mast and stem cell diseases

BRIQUILIMAB
(JSP191)

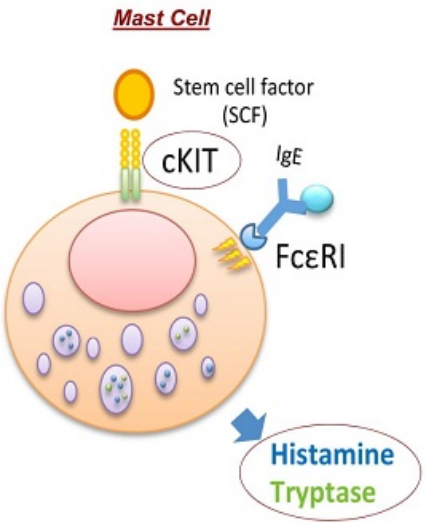
Transplant

- Severe Combined Immunodeficiencies (SCID)
- Acute Myeloid Leukemia
- Myelodysplastic Syndromes
- Fanconi Anemia
- Sickle Cell Disease

Therapeutic

- Low to Intermediate Risk MDS (Q1 2023)
- Chronic Urticaria
- Eosinophilic Esophagitis (Potential Expansion)
- Prurigo Nodularis (Potential Expansion)
- Allergic Asthma (Potential Expansion)

Tyrosine kinase KIT plays a central role in regulating mast and stem cell survival



Blocking c-Kit signaling depletes mast cells

Mast Cells

Mast cells play a key role in the immune system through degranulation or the release of compounds that induce inflammation

Chronic Urticaria and other mast cell diseases may be the result of unregulated activation leading to episodes of hives and inflammation

Briquilimab blocks c-Kit signaling and may lead to lasting depletion of mast cells in Chronic Urticaria and other mast cell diseases

Stem Cells

Hemopoietic stem cells are the pluripotent cells that drive ongoing production of red blood cells, platelets and immune cells

Many blood cancers and genetic diseases can be cured by depleting the existing diseased stem cells and replacing them with donor or gene modified stem cells

Briquilimab can be added to existing transplant regimens to block c-Kit signaling on stem cells and potentially deliver more effective transplants

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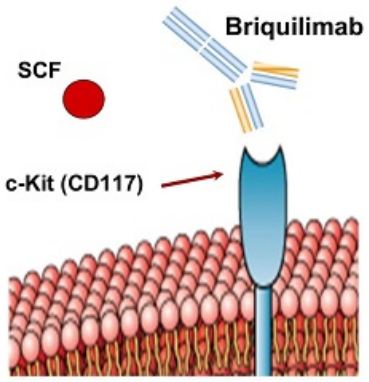
Briquilimab is optimally designed to directly block c-Kit signaling

Briquilimab

Blocks SCF binding to c-Kit (CD117) to directly inhibit receptor signaling



Validated Mechanism of Action

Briquilimab is designed to directly block SCF from binding to c-Kit (CD117) with high affinity and avidity

- Aglycoslyated IgG1 antibody directly inhibits stem cell factor from binding to the c-Kit receptor on mast and stem cells
- Inhibition of SCF signaling leads to depletion of mast cells in the skin and hematopoietic stem cells in the bone marrow
- Wide therapeutic potential across a range of mast and stem cell-mediated diseases

Favorable Drug Properties

- Kd < 5pM affinity to human c-Kit with IC50 ~ 70pM
- Human mast cell survival bioassay IC50 ~12.5nM
- No Fc mediated ADCC or complement mediated cytotoxicity which reduces risk of adverse effects related to express CD117
- Human clinical data as IV or Sub-Q delivery

Encouraging Clinical Profile

- Predictable clearance from ages 3 to 79, no need to monitor PK
- Demonstrated single agent lasting depletion of mast cells
- Demonstrated efficacy in 5 clinical transplant studies
- No Briquilimab related SAEs reported

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Briquilimab Therapeutic Development

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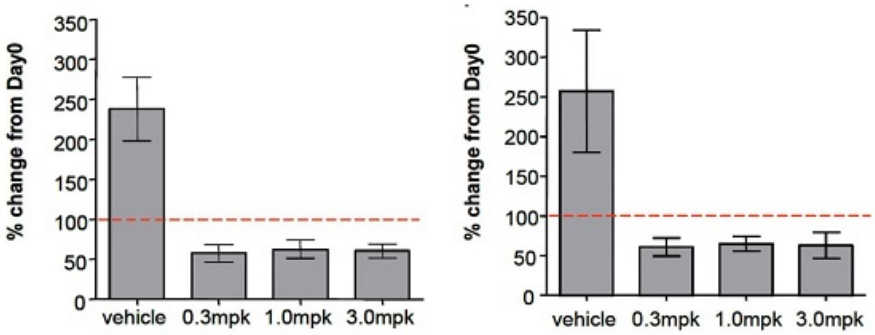
Briquilimab for Chronic Urticaria

Briquilimab c-Kit and mast cell activity

Activity Assay	Result
Binding affinity to human c-Kit Fc dimer	Kd < 5 pM
Biacore assessment of c-Kit signaling neutralization	Ki 70pM
Human mast cell c-Kit phosphorylation bioassay	IC_{50} 1.8nM
Human mast cell survival bioassay	IC_{50} 12.5nM
Monkey mast cell cutaneous wound proliferation assay	Vehicle: 150% increase in tryptase positive mast cells Briquilimab (0.3, 1.0, 3.0 mg/kg): 50% reduction vs. baseline
Monkey basal mast cell depletion model	Briquilimab (0.3, 1.0, 3.0 mg/kg): 16-21% depletion
Monkey lung mast cell depletion model	Briquilimab (0.3, 1.0, 3.0 mg/kg): dose dependent depletion

Source: Amgen Internal Data

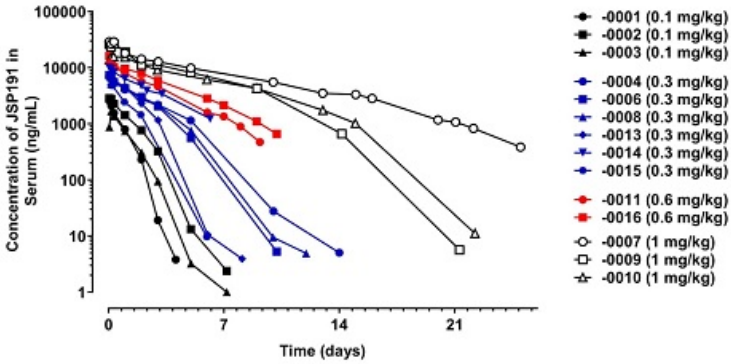
Briquilimab mast cell depletion in non-human primates following cutaneous wound injury



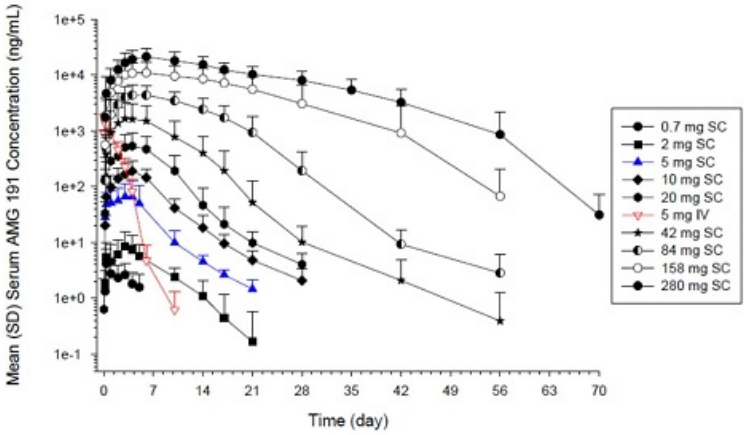
(A, B) Laser scanning cytometry was used to quantify MCs over the area of the entire skin biopsy. Two sections were averaged together from 2 independent biopsies from each of three animals. (C, D) The same samples were independently scored by a pathologist using light microscopy. (B, D) Biopsies from the same animal are used for the bar graphs of panels A and C. (E, F) Day 14 data was normalized to Day 0 for laser scanning cytometry (E) or pathologist scoring (F). v; vehicle. *Source: Research Report 2006488*

Briquilimab can be dosed IV or sub-cutaneous

Briquilimab IV serum concentrations

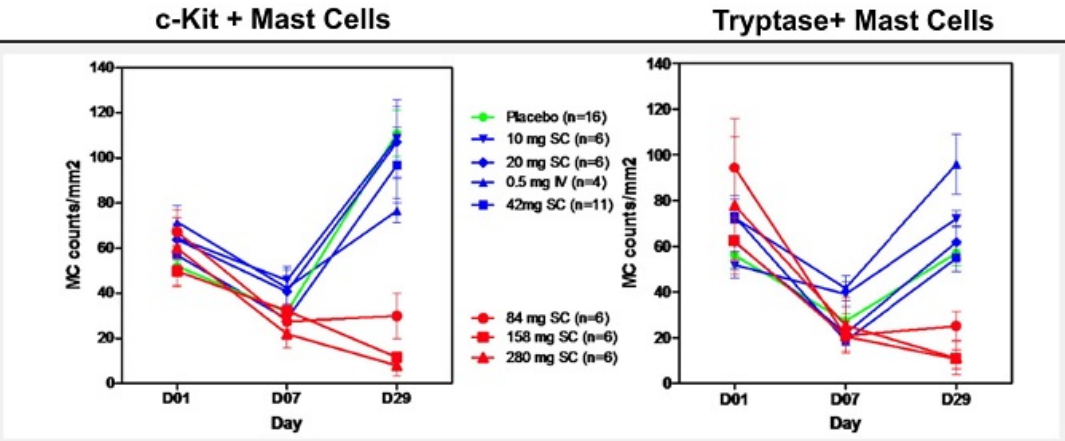


Briquilimab SubQ serum concentrations



Source: Jasper SCID Study, Amgen Phase I Study Data

Phase I: Briquilimab robustly depletes tryptase and c-Kit positive skin mast cells



Briquilimab Phase 1a (N=71):

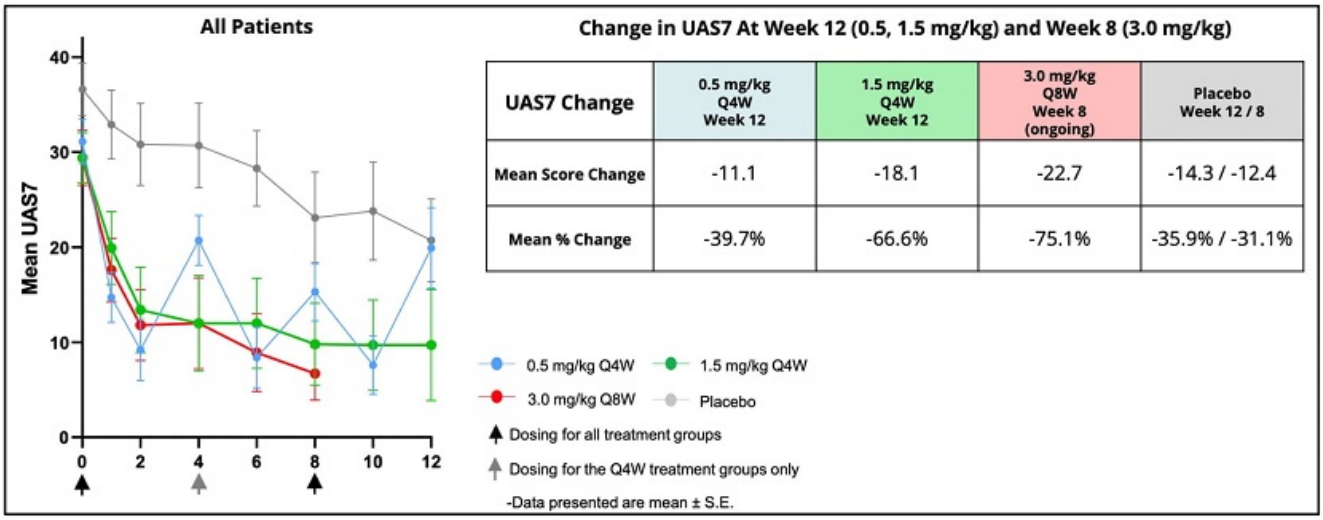
Reduction in SCF (c-Kit) positive and Tryptase positive mast cells*

No Briquilimab SAEs in any clinical studies to-date (>130 subjects treated)

*Punch Biopsy Wound Model
Source: Amgen Phase 1a (SAD = 71 Briquilimab patients; MAD = 8 Briquilimab patients)

Celldex's barzolvolimab has demonstrated proof-of-concept of c-Kit signal blockade for Severe Chronic Urticaria patients

Barzolvolimab Phase 1b MAD (IV) Shows Efficacy in Severe Urticaria Patients



Source: Celldex Late Break EAACI 2022 Presentation (June 30, 2022).

Key points of differentiation between Briquilimab and Barzolvolimab (CDX-0159)

Key Similarities

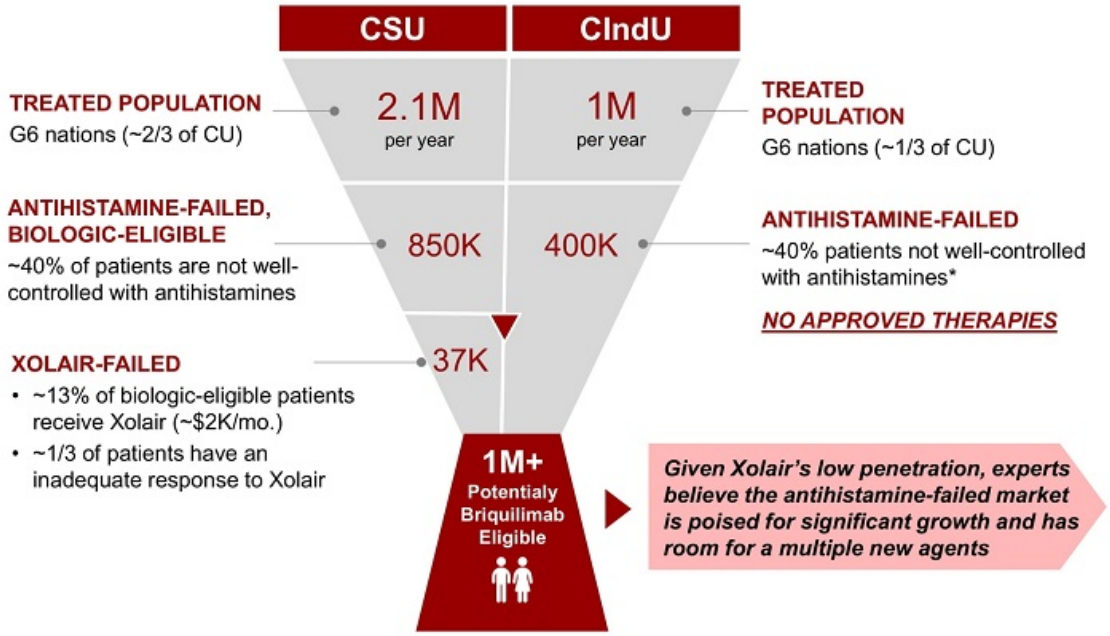
1. **c-Kit (CD117) monoclonal antibody**
   - Both antibodies are humanized, aglycosylated IgG1 inhibitors of c-Kit signaling on mast cells
2. **On-target depletion of mast cells, tryptase**
   - Phase 1a data (IV and SubQ) suggests similar, dose-dependent inhibition of plasma tryptase and blocking of Stem Cell Factor
3. **Comparable PK/PD profile**
   - Phase 1a data (IV and SubQ) suggests similar, predictable, PK profiles

Key Differences

1. **Briquilimab directly blocks SCF binding**
   - Direct and complete blockage of ligand binding to the c-Kit receptor
2. **Potential first to market anti c-Kit MAb**
   - Briquilimab SCID indication with potential BLA filing in 2024
3. **Proven to work in multiple diseases**
   - Effective in transplant for AML, MDS, SCID, Fanconi Anemia and Sickle Cell Disease

Source: Alvarado et al Allergy 2022:00:1-11; Maurer et al AAAAI, February 2022; Celldex Late Break EAACI 2022 Presentation (June 30, 2022), Jasper Internal Data

Chronic urticaria represents a significant and expanding market, with estimated 1+ million potential patients



Source: Novartis Corporate Presentation 2021; LifeSci Capital Analyst Report, Third Harmonic (Oct. 2022).

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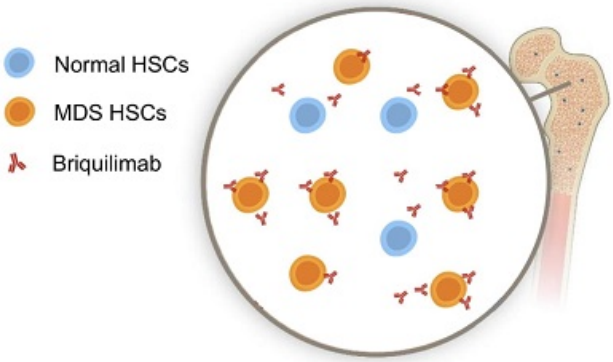
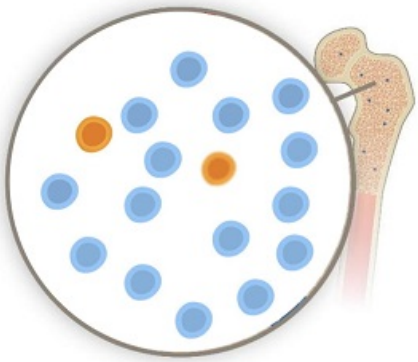
LR-MDS Therapeutic

Briquilimab's Ability to Directly Deplete Cancerous Stem Cells May be Leveraged as a Disease-modifying Therapeutic in Lower-Risk MDS

Briquilimab administered in a LR-MDS patient



Shift of HSCs towards normal hematopoiesis



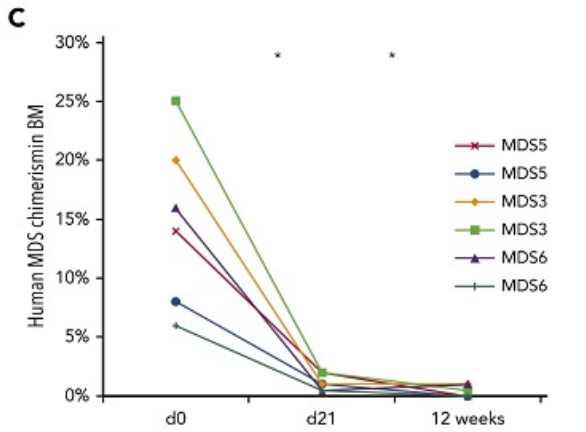
Patients are currently managed with supportive / stimulating therapies that do not target diseased cells

" There is a tremendous unmet need for new treatments for MDS; rates of relapse are high, and many patients are not eligible for existing approved therapies..."

- Platzbecker et al., 2021 Leukemia

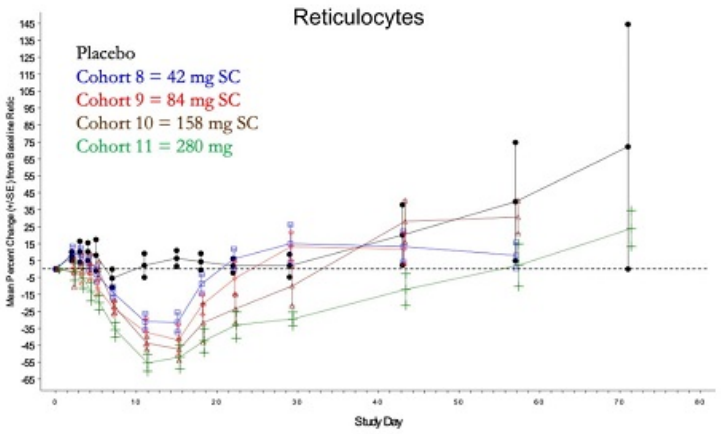
Briquilimab Depletion May Enable Healthy HSCs to Take Over the Bone Marrow Niche and Restore Functional Hematopoiesis

Briquilimab lasting depletion of LR-MDS cells[1]



MDS cells are depleted and stay depleted

Briquilimab depletion and rebound of healthy HSCs[2]



Healthy HSCs are depleted, recover and expand

[1] Kwon et al, *Blood* 2019
[2] Amgen Phase I healthy volunteer data (unpublished)

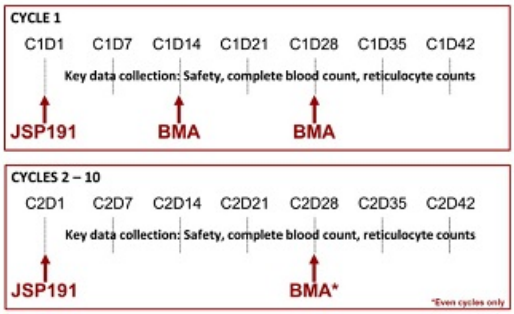
A Phase I Open-label, Dose-escalation, Safety and Tolerability Study of Briquilimab as a Second Line Therapy in Patients With Lower-risk Myelodysplastic Syndrome

Population

- IPSS-R very low, low or intermediate risk MDS patients
- RBC transfusion dependence, thrombocytopenia or neutropenia

Single Arm Design

- **Dosing:** 4 cohorts – 0.3mg/kg (w/ sentinel dose of 0.1mg/kg), 0.6mg/kg, 1.0mg/kg, 1.5mg/kg
- **Dose cycles:** Every 8 weeks
- **Size:** 3-6 per cohort



Key Assessments

- **Primary Objectives:** Safety, tolerability and DLT of MAD Briquilimab
- **Secondary Objectives:** PK, Efficacy by HI-E/HI-P/HI-N and duration of response, reduction in RBC transfusions, ORR and duration of response by IWG 2006, progression free survival
- **Exploratory:** Depletion of leukemic stem & progenitor cells, hematopoietic stem & progenitor cells, molecular characteristics of LSCs/HSCs/HPCs, cytokine profile, Briquilimab immunogenicity

HI-E: Hematologic Improvement-Erythroid; Hematologic Improvement-Platelet; Hematologic Improvement-Neutrophil (IWG 2018 criteria)

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Briquilimab Transplant Development

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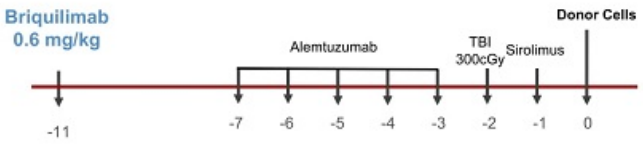
Sickle Cell & Beta Thalassemia

Phase I: Addition of Briquilimab to Nonmyeloablative Hematopoietic Cell Transplantation for Sickle Cell Disease and Beta-Thalassemia

SCD patients

- High-risk SCD
- 6/6 HLA matched family donor available

Single Arm Trial Design



Study Endpoints

- Percent myeloid (CD14/15) chimerism
- Donor stem cell engraftment
- Safety / GVHD

- Sickle cell disease (SCD) is a group of inherited red blood cell / hemoglobin disorders; patients with SCD have misshapen red blood cells, which prevents normal cell function / behavior
- Patients typically develop chronic problems such as renal disease, lung disease, and pulmonary hypertension, putting them at high risk for complications when treated with chemotherapy / radiation
- The NHLBI (NIH) is studying a briquilimab combination with alemtuzumab, low-dose irradiation, sirolimus + HSCT to potentially cure patients with sickle cell disease
- **First three briquilimab treated SCD patients have achieved successful transplant with first two patients at 100% donor myeloid chimerism at 60 days. First patient has achieved total hemoglobin of 13.3 g/dL at 5 months.**

Jasper THERAPEUTICS INC.

NCT05357482

Jasper
THERAPEUTICS INC.

SCID

Briquilimab Conditioning for Severe Combined Immunodeficiency (SCID)

Jasper SCID Strategy:

- Establish Single Agent Activity POC
- Focus on Re-transplant T-B-subjects
- FDA Supportive of Ultra-Orphan Data Package
- Potential Priority Review Voucher

Durable Clinical Benefit in Briquilimab Conditioned Patients With No Conditioning-Related Toxicity

T-B-NK+ SCID Re-Transplant Subjects

Dose	Chimerism*	Naïve T-cells*	Outcomes
0.1 mg/kg	+	+	• Off IVIG, Ab response to vaccination
	+	+	• IVIG reduced, Chronic norovirus & URI** resolved
0.3 mg/kg	+	+	• Continues on IVIG, Chronic URI resolved
	+	+	• Off IVIG, Ab response to vaccination
	-	-	• Continues on IVIG, Improvement in chronic URI
0.6 mg/kg	+	+	• Continues on IVIG, Improvement in chronic URI
	+	+	• IVIG/SCIG dependent, Generating naïve B cells
	Too early	Too early	• IVIG dependent, Generating naïve B cells
1.0 mg/kg	-	-	• Off Study at 140 weeks – Deceased
	-	-	• Continues on IVIG, Persistent Chronic URI, Improvement in chronic norovirus enteritis

Key clinical measures

1. Clinical parameters of infection
2. Dependence on exogenous immunoglobulin
3. Response to vaccination

Agarwal R, et al. Clinical Immunology Society Annual Meeting (CIS); 2022 Mar 31-Apr 3; Charlotte, NC
*Threshold for success: Chimerism = stringent CD15+ chimerism >3% at 18-24 wks; Naïve T cells = ≥ 85 cells/μL
NCT02963064
**Upper respiratory infection

Briquilimab SCID Phase I Results: Safety and Tolerability to Date

Clinical Safety

- No briquilimab-related serious adverse events (SAEs)
- No myelosuppression
- No significant infusion reactions

Clinical Setting

- Protocol amended to allow for outpatient administration of briquilimab
- Based on safety and successful HSC engraftment in re-transplant SCID subjects, the study of briquilimab has been expanded to include newly diagnosed infants with SCID

Potential Near-term Biologics License Application (BLA) and PRV Opportunity for Briquilimab in SCID

SCID is a lethal genetic immune disorder where HCT is the only proven cure

Potential FDA filing strategy

SCID re-transplant patients are ultra orphan, high unmet need population

Focus on current clinical data with briquilimab in 10 SCID re-transplant T-B- patients

Generate additional supportive data in existing patients (longitudinal, pre-transplant) and separate natural history data

Briquilimab granted Rare Pediatric Disease Designation in SCID and may be eligible for PRV with approval

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Fanconi Anemia

Phase I: Depleted Donor Stem Cell Transplant in Children and Adults With Fanconi Anemia After Being Conditioned With a Regimen Containing Briquilimab

- **Fanconi patients in bone marrow failure**
- ≥ 5 / 10 HLA-matched related or unrelated donor

Single Arm Trial Design

Study Endpoints

- Safety
- Donor stem cell engraftment
- Restoration of blood counts

- Fanconi is an inherited DNA repair deficiency that leads to progressive failure of hematopoietic stem and progenitor cells and transfusion dependency
- Allogeneic stem cell transplant is the only current cure, however Fanconi patients are highly susceptible to toxic side effects of conditioning with radiation or alkylating agents
- Successful allogeneic transplant will result in healthy bone marrow with normal DNA repair capabilities and normal blood cell counts
- Stanford is studying a briquilimab based conditioning regimen plus a TCRαβ+ T-cell/CD19+ B-cell Depleted Hematopoietic Graft to cure Fanconi patients with reduced risk of GVHD
- **The first two patients have achieved 100% donor myeloid chimerism along with recovery of normal blood counts. To date no GVHD or Veno-Occlusive Disease has been reported; grade 3 mucositis was observed.[1]**

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1. Agarwal R, et al. EBMT's Inborn Errors Working Party Annual Meeting (IEWP); 2022 Sep 23-Apr 25; Paris, France

Potential Fanconi Development Path for Briquilimab

Allogeneic stem cell transplant can restore bone marrow and blood formation in Fanconi Anemia patients

Development strategy

Continue to enroll under current protocol (n up to 12)

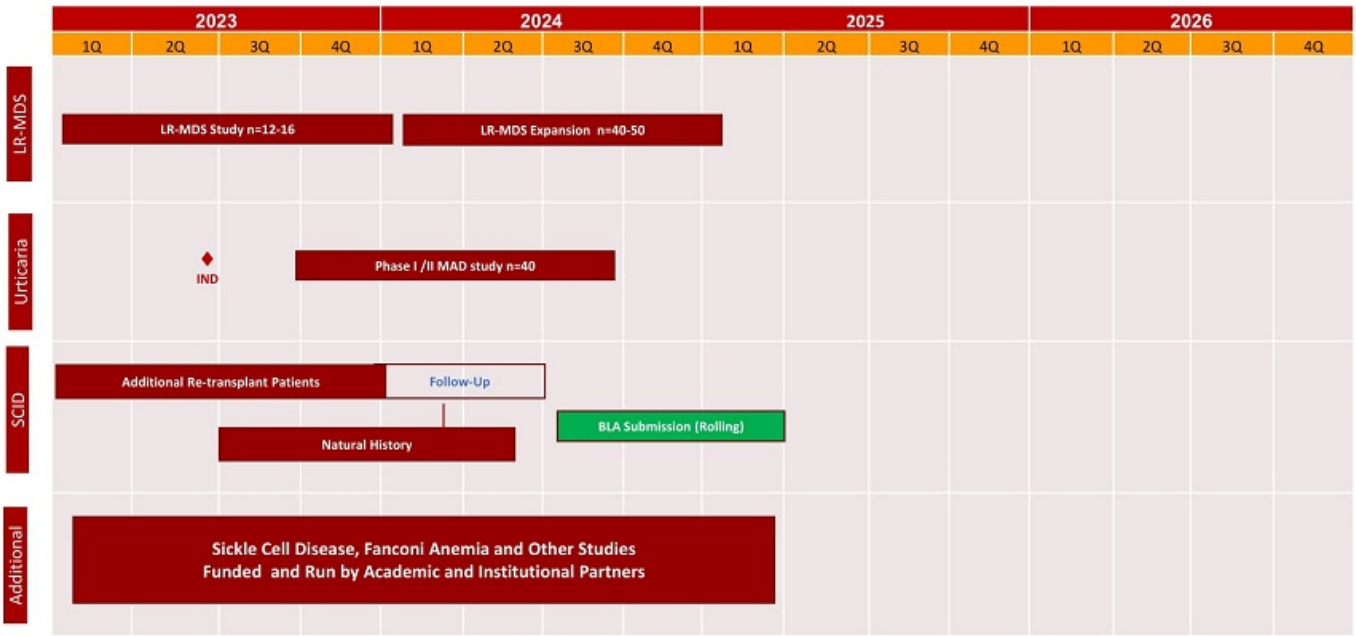
Discuss path to BLA with FDA with 6-month data in first three patients

- Example: Rocket Pharmaceuticals has communicated that FDA guidance of gene therapy efficacy in at least 5 of 12 patients may be sufficient to support a potential BLA filing

Consider expansion to additional clinical sites following FDA discussion

Successful development of briquilimab in Fanconi Anemia may lead to rare pediatric disease designation and a Priority Review Voucher

Briquilimab Development Plan



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Harnessing the Power of Jasper's Differentiated c-Kit Therapeutic Approach

Nasdaq: JSPR

January 2023

Additional Slides

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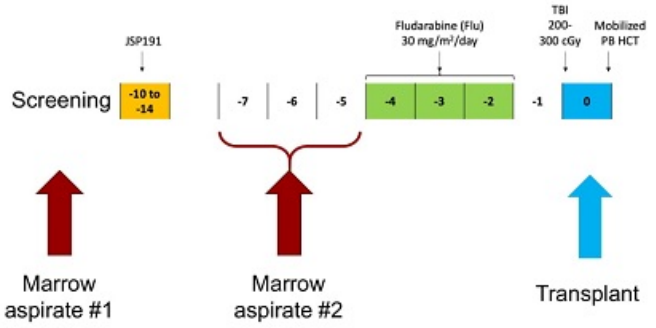
AML / MDS

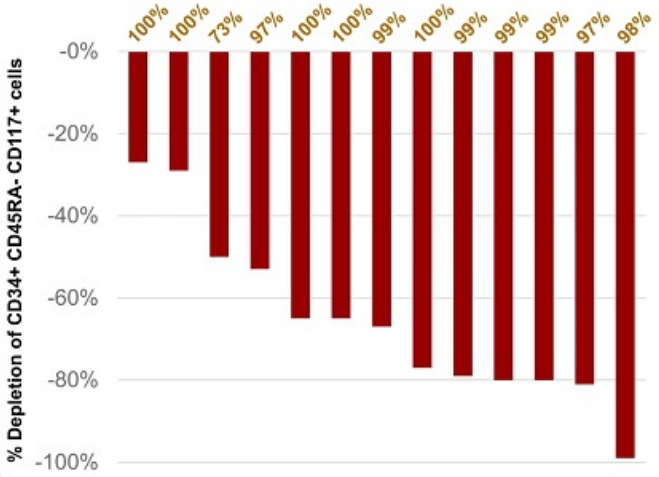
AML/MDS Study: Single Agent Briquilimab Depletes Diseased Stem & Progenitor Cells in Bone Marrow in 5 to 7 Days

Marrow aspirates collected at screening and prior to administration of Flu/TBI
(prior to projected maximum briquilimab effect)



Stem and progenitor cell depletion following briquilimab 0.6 mg/kg single dose in AML/MDS patients

(% Myeloid chimerism at last follow up)

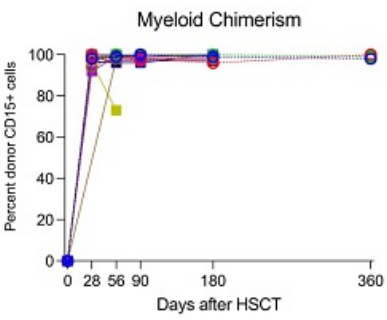


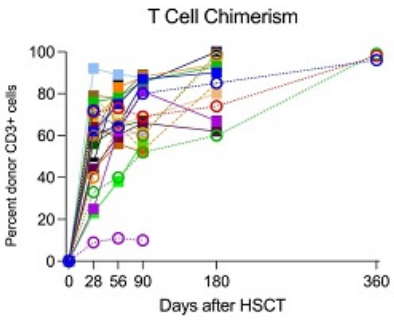
Muffly L et al. Tandem Meetings Transplantation and Cellular Therapy (TCT) 2022 April 23-26; Salt Lake City, UT

Briquilimab Based Conditioning Demonstrates Donor Cell Takeover of Bone Marrow Stem Cells and Elimination of Detectable Cancer in Older Patients

Donor cell takeover of the bone marrow

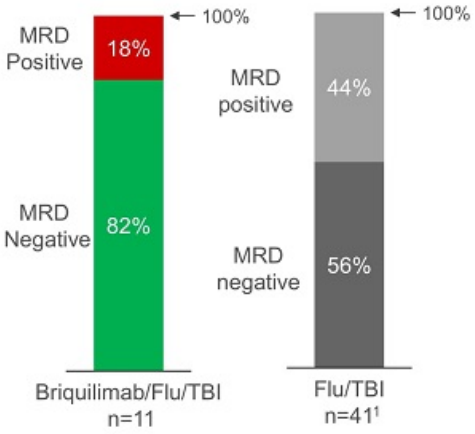
(Median donor chimerism)





Clearance of detectable cancer

(Measurable residual disease by flow cytometry)



[1] Paras G, Morsink LM, Othus M, et al. Conditioning intensity and peritransplant flow cytometric MRD dynamics in adult AML. Blood. 2022;139(11):1694-1706

No Briquilimab Related SAEs, No 100-day Transplant Related Mortality and Proof of Concept for Outpatient Stem Cell Transplant

Clinical Safety

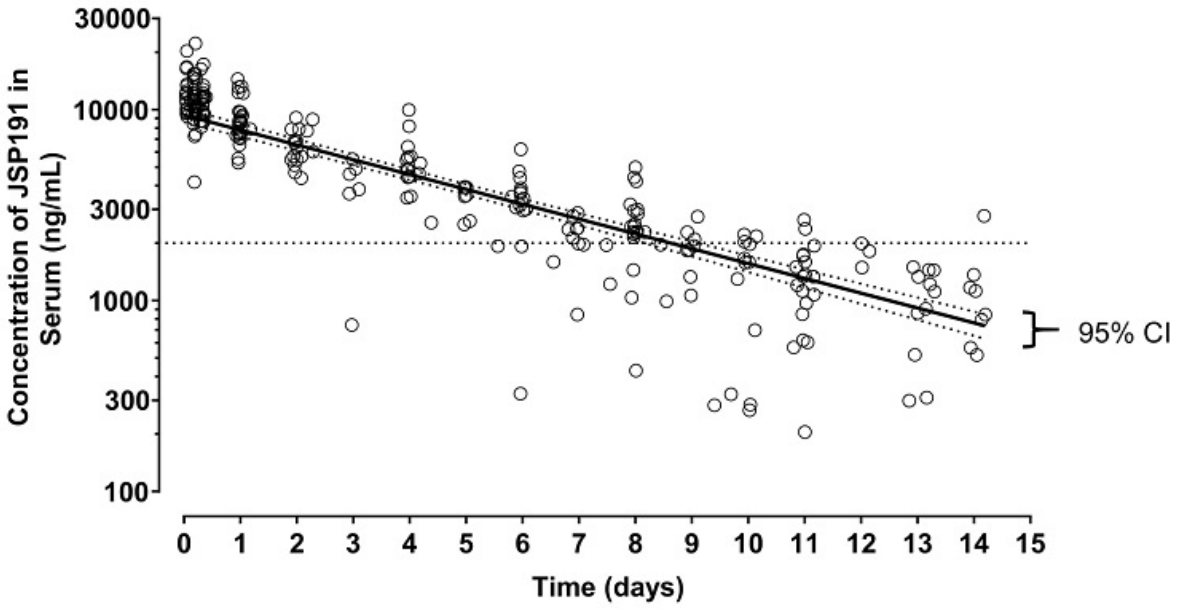
- No briquilimab related SAEs
- No significant briquilimab infusion reactions
- One subject with refractory late onset grade 3 acute GI GVHD
- One subject with secondary graft failure
- No 100-day transplant-related mortality
- No significant mucositis, hypersensitivity, hepatotoxicity, or other organ damage

Clinical Setting

- Protocol allows for outpatient conditioning
- 14 subjects given outpatient briquilimab along with outpatient transplant

SAE: Serious Adverse Event; GI-GVHD: Gastrointestinal Graft vs. Host Disease
NCT04429191

0.6 mg/kg Briquilimab Pharmacokinetics: Consistent and Predictable Clearance



Muffly L et al. Tandem Meetings Transplantation and Cellular Therapy (TCT) 2022 April 23-26; Salt Lake City, UT