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

FORM 8-K

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

Date of Report (Date of earliest event reported): June 10, 2022

Keros Therapeutics, Inc.
(Exact name of registrant as specified in its charter)

Delaware	**001-39264**	**81-1173868**
(state or other jurisdiction of incorporation)	**(Commission File Number)**	**(I.R.S. Employer Identification No.)**

99 Hayden Avenue, Suite 120, Building E
Lexington, Massachusetts **02421**
(Address of principal executive offices) **(Zip Code)**

Registrant's telephone number, including area code: (617) 314-6297

Not applicable

(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 Act:

Title of each class	Trading Symbol	Name of each exchange on which registered
Common Stock, $0.0001 par value per share	**KROS**	**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 8.01 Other Events.

On June 10, 2022, Keros Therapeutics, Inc. (the "Company") issued a press release announcing additional data from its ongoing Phase 2 clinical trial of KER-050 in patients with very low-, low-, or intermediate-risk myelodysplastic syndromes ("MDS"), as well as preclinical data on the differentiated mechanism of action of KER-050 and its activity on multiple stages of thrombopoiesis, at the 27th Annual Congress of the European Hematology Association, held in person and virtually June 9 through 17, 2022. A copy of the press release is attached as Exhibit 99.1 to this Current Report on Form 8-K and is incorporated herein by reference.

During a conference call and webcast scheduled to be held at 8:00 a.m. Eastern time on June 10, 2022, the Company's management will discuss the additional data from its ongoing Phase 2 clinical trial of KER-050 in patients with MDS. A copy of the presentation for the conference call and webcast is attached as Exhibit 99.2 to this Current Report on Form 8-K and is incorporated by reference herein.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit No.	Description
99.1	Press release dated June 10, 2022.
99.2	Investor Presentation dated June 2022.
104	Cover Page Interactive Data File (the cover page XBRL tags are embedded within the Inline XBRL document)

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.

KEROS THERAPEUTICS, INC.

By: /s/ Jasbir Seehra
Jasbir Seehra, Ph.D.
Chief Executive Officer

Dated: June 10, 2022

Keros Therapeutics Presents Clinical Trial and Preclinical Study Results from its KER-050 Program and Preclinical Data from its ALK2 Inhibitor Program at the 27th Annual Congress of the European Hematology Association

- *Keros Therapeutics will be hosting a conference call and webcast today, June 10, 2022, at 8:00 a.m. Eastern time.*

Lexington, Mass. – June 10, 2022 – Keros Therapeutics, Inc. ("Keros" or the "Company") (Nasdaq: KROS), a clinical-stage biopharmaceutical company focused on the discovery, development and commercialization of novel treatments for patients suffering from hematological and musculoskeletal disorders with high unmet medical need, today announced that it presented additional data from its ongoing Phase 2 clinical trial of KER-050 in patients with very low-, low-, or intermediate-risk myelodysplastic syndromes ("MDS"), as well as preclinical data on the differentiated mechanism of action of KER-050 and its activity on multiple stages of thrombopoiesis, at the 27th Annual Congress of the European Hematology Association ("EHA"), held in person and virtually June 9 through 17, 2022. In addition, Keros announced preclinical data evaluating ALK2 inhibition as a potential treatment option for anemia of inflammation.

"We believe the additional data from our ongoing Phase 2 clinical trial of KER-050 in MDS patients continues to support the potential of KER-050 as a treatment for multilineage cytopenias, and are pleased to present at EHA this year," said Jasbir S. Seehra, Ph.D., President and Chief Executive Officer of Keros. "Additionally, we are excited to announce that we have recently initiated dosing for Part 2 of the trial, at a starting dose of 3.75 mg/kg, with an opportunity for patients to dose escalate to 5.0 mg/kg based on individual titration rules, following the Safety Review Committee recommendation for this trial."

Clinical Presentation

- *A Phase 2, open-label, ascending dose study of KER-050 for the treatment of anemia in patients with very low, low, or intermediate risk myelodysplastic syndromes*

This ongoing, open-label, two-part, multiple ascending dose Phase 2 clinical trial is evaluating KER-050 in participants with very low-, low-, or intermediate-risk MDS who either have or have not previously received treatment with an erythroid stimulating agent ("ESA"). Enrollment for Part 1 was balanced approximately one-to-one between patients that did not have ring sideroblasts ("non-RS") and patients that have ring sideroblasts ("RS positive"). Patients received KER-050 subcutaneously every 28 days for up to four cycles during Part 1 of the trial, at the following dose levels: Cohort 1, 0.75 mg/kg; Cohort 2, 1.5 mg/kg; Cohort 3, 2.5 mg/kg; Cohort 4, 3.75 mg/kg; and Cohort 5, 5.0 mg/kg.

As of April 3, 2022 (the "data cut-off date"), 31 patients in Cohorts 1 through 5 had received at least one dose of KER-050. Of these, 27 patients in Cohorts 1 through 5 had completed eight weeks of treatment and evaluation as of the data cut-off date (the "evaluable patients"). The 27 evaluable patients were comprised of five non-transfused ("NT"), six low transfusion burden ("LTB"), and 16 high transfusion burden ("HTB") patients. Two of the transfused LTB patients required <2 red blood cell ("RBC") units at baseline. Of the 20 LTB and HTB patients that required ≥2 RBC units at baseline, eight were non-RS and 12 were RS positive.

As of the data cut-off date, 51.9% (n=14/27) of the evaluable patients achieved an overall erythroid response, which is defined as meeting one of the following two endpoints:

- IWG 2006 Hematological improvement-erythroid ("HI-E"), which is defined as either:
  - a ≥ 1.5 g/dL increase in hemoglobin for eight weeks in LTB and NT patients; or

    - a reduction by ≥ 4 RBC units transfused during any eight-week period during the trial, compared with the eight-week period prior to Cycle 1, Day 1 in HTB patients.
- Transfusion independence (“TI”) for at least eight weeks in transfusion-dependent patients who required ≥ 2 RBC units transfused at baseline.

Additional data from the evaluable patients in Cohorts 1 through 5 of the trial, as of the data cut-off date, include:

- 46.2% (n=12/26) of the evaluable population achieved HI-E over an eight-week period.
- 45.0% (n=9/20) of the transfused patients receiving ≥ 2 RBC units at baseline achieved TI for at least eight weeks. Of these 20 patients, 12 were RS positive and eight were non-RS.
    - 50.0% (n=6/12) of these RS positive patients achieved TI for at least eight weeks.
    - 37.5% (n=3/8) of these non-RS patients achieved TI for at least eight weeks.
- 43.8% (n=7/16) of the HTB patients achieved TI for at least 8 weeks.

In addition, sustained increases in platelets were observed in HTB patients achieving HI-E or TI, which supports the potential of KER-050 as a treatment for multilineage cytopenias in difficult-to-treat HTB patients. Increases in reticulocytes and serum soluble transferrin receptor levels, as well as decreases in serum ferritin, were also observed in HTB patients. Together, these exploratory pharmacodynamic data suggest an improvement in erythropoiesis.

As of the data cut-off date, KER-050 was observed to be generally well-tolerated in the 31 patients in Cohorts 1 through 5 who had received at least one dose of KER-050. No drug-related serious adverse events or dose-limiting toxicities were reported. The most commonly reported treatment-emergent adverse events were dyspnea, fatigue, anemia, diarrhea, headache and nausea. Treatment-related adverse events were reported in five patients, which were mild or moderate in severity. No patients developed acute myeloid leukemia. Four patients withdrew from the trial prior to completing treatment with KER-050, one due to death deemed unrelated to study drug, one due to withdrawn consent and two due to unrelated treatment-emergent adverse events.

Following recommendation by the Safety Review Committee, dosing for Part 2 of the trial was initiated at a starting dose of 3.75 mg/kg, with an opportunity for patients to dose escalate to 5.0 mg/kg based on individual titration rules.

Preclinical Presentations

- *RKER-050, a novel inhibitor of TGF-β superfamily signaling, induced platelet production in healthy mouse megakaryocytes*

Administration of a research form of KER-050 (“RKER-050”) increased differentiation of early- and late-stage megakaryocyte precursors and increased platelet count:

- Healthy mice treated with a single 10 mg/kg dose of RKER-050 had an increase in platelet numbers at 12 hours, 37 days and 51 days after administration compared to vehicle-treated mice ($p \leq 0.001$, $p \leq 0.05$ and $p \leq 0.01$, respectively). At 14 days and 91 days after administration, counts normalized back to vehicle control levels, demonstrating a phasic response on thrombopoiesis. Taken together, these data suggest that RKER-050 may be affecting thrombopoiesis at multiple stages, including platelet formation and megakaryocyte progenitor renewal.
    - Keros also analyzed CD41+ cells, which are megakaryocyte precursors, from the bone marrow of healthy mice at 12 hours post-treatment in order to investigate the potential effects of RKER-050 on early stages of thrombopoiesis. An increase in the CD41+ cells

was observed compared to vehicle-treated mice ($p \leq 0.01$), as well as an increase in higher levels of ploidy at 24 hours post-treatment, indicating that RKER-050 increased differentiation of megakaryocyte precursors towards the later stages of maturation.

- Keros also demonstrated that inhibition of activin A with a neutralizing antibody increased production of platelets. Similarly, treatment with RKER-050 increased platelet production. These data are consistent with these treatments acting to inhibit negative regulators of thrombopoiesis and shift the balance towards increased bone morphogenic protein ("BMP") signaling which promotes thrombopoiesis. These data support that RKER-050 promoted megakaryocyte maturation potentially by blocking inhibitory transforming growth factor-beta ("TGF-β") ligands, such as activin A, in this preclinical model.

Overall, these data support that KER-050 has the potential to treat thrombocytopenia, including in patients with MDS and myelofibrosis.

- *ALK2 inhibition lowered hepcidin and liberated spleen iron for erythropoiesis in anemia of inflammation*

Hepcidin, the key regulator of iron absorption and recycling, can be regulated by the BMP-SMAD and IL-6-STAT3 signaling pathways in normal and inflammatory conditions. To understand whether and how ALK2 inhibition decreases hepcidin in inflammation, healthy mice were dosed with 3 mg/kg KTI-m216, an investigational neutralizing antibody to the ALK2 receptor, or vehicle for one hour, followed by a 1 mg/kg dose of lipopolysaccharide ("LPS") or phosphate buffered saline ("PBS") for six hours. Serum IL-6 was induced in the vehicle-LPS and KTI-m216-LPS mice, compared to respective PBS controls, indicating that a model of acute inflammation was induced.

Serum hepcidin was increased by LPS to a similar extent in the vehicle- and KTI-m216-treated mice, compared to the respective vehicle-PBS and KTI-m216-PBS controls. However, KTI-m216-LPS mice had a 69% reduction in absolute serum hepcidin compared to vehicle-LPS controls. These data indicate that KTI-m216 inhibited the BMP-SMAD signaling in this preclinical model and is potentially sufficient for hepcidin reduction in inflammation.

To induce a model of chronic kidney disease ("CKD"), mice were fed a diet containing 0.2% adenine and 40 ppm iron for six to seven weeks. CKD mice developed characteristics of anemia of inflammation ("AI"), including decreased hemoglobin, increased serum IL-6 and hepcidin, decreased serum iron and increased tissue iron retention, compared to mice on a control diet. After AI was confirmed, CKD mice received twice weekly treatment with 3 mg/kg of KTI-m218, an investigational neutralizing antibody to the ALK2 receptor, or vehicle for three weeks, while continuing the adenine diet. In a separate experiment, the CKD mice received twice weekly treatment with 3 mg/kg of KTI-m218 or vehicle for nine days, while on an adenine diet with 3 ppm iron.

KTI-m218-treated CKD mice on the continued adenine and 40 ppm iron diet exhibited a reversal of the CKD-related changes, including decreased serum hepcidin, increased serum iron, reduction in spleen iron and increased hemoglobin compared to vehicle-treated CKD mice. Similar responses were observed in the KTI-m218-treated CKD mice on the adenine and 3 ppm iron diet, which supports that the increased iron in KTI-m218-treated CKD mice was mostly from the spleen, rather than diet.

These data suggest that ALK2 inhibition-mediated hepcidin suppression was sufficient to improve erythropoiesis by liberating iron from the recycling pathway in a mouse model of AI. Accordingly, Keros believes that targeting ALK2 inhibition could potentially treat anemia resulting from CKD and other acute and chronic inflammatory diseases.

About the Ongoing Phase 2 Clinical Trial of KER-050 in Patients with MDS

Keros is conducting an open label, two-part, multiple ascending dose Phase 2 clinical trial to evaluate KER-050 in participants with very low-, low-, or intermediate-risk MDS who either have or have not previously received treatment with an ESA.

The primary objective of this trial is to assess the safety and tolerability of KER-050 in participants with MDS that are RS positive or non-RS. Confirmation of the safety and tolerability of the selected dose levels is the primary objective of Part 2 of this trial. The secondary objectives of this trial are to evaluate the pharmacokinetics, pharmacodynamics and efficacy of KER-050. Keros expects to report additional data from this trial by the end of 2022.

Conference Call and Webcast Information

The Company will host a conference call and webcast today, June 10, 2022, at 8:00 a.m. Eastern time, to discuss the additional results from the ongoing Phase 2 clinical trial of KER-050 presented at the 27th Annual Congress of EHA.

The conference call will be webcast live at https://event.webcasts.com/starthere.jsp?ei=1552417&tp_key=c785623d12. The live teleconference may be accessed by dialing (877) 405-1224 (domestic) or (201) 389-0848 (international). An archived version of the call will be available in the Investors section of the Keros website at https://ir.kerostx.com/ for 90 days following the conclusion of the call.

About KER-050

Keros' lead protein therapeutic product candidate, KER-050, is an engineered ligand trap comprised of a modified ligand-binding domain of the transforming growth factor-beta receptor known as activin receptor type IIA that is fused to the portion of the human antibody known as the Fc domain. KER-050 is being developed for the treatment of low blood cell counts, or cytopenias, including anemia and thrombocytopenia, in patients with myelodysplastic syndromes, or MDS, and in patients with myelofibrosis.

About Keros Therapeutics, Inc.

Keros is a clinical-stage biopharmaceutical company focused on the discovery, development and commercialization of novel treatments for patients suffering from hematologic and musculoskeletal disorders with high unmet medical need. Keros is a leader in understanding the role of the transforming growth factor-beta family of proteins, which are master regulators of red blood cell and platelet production as well as of the growth, repair and maintenance of muscle and bone. Keros' lead protein therapeutic product candidate, KER-050, is being developed for the treatment of low blood cell counts, or cytopenias, including anemia and thrombocytopenia, in patients with MDS and in patients with myelofibrosis. Keros' lead small molecule product candidate, KER-047, is being developed for the treatment of anemia resulting from iron imbalance. Keros' third product candidate, KER-012, is being developed for the treatment of pulmonary arterial hypertension and for the treatment of disorders associated with bone loss, such as osteoporosis and osteogenesis imperfecta.

Cautionary Note Regarding Forward-Looking Statements

Statements contained in this press release regarding matters that are not historical facts are "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, as amended. Words such as "anticipates," "believes," "expects," "intends," "plans," "potential," "projects,"

“would” and "future" or similar expressions are intended to identify forward-looking statements. Examples of these forward-looking statements include statements concerning: Keros’ expectations regarding its growth, strategy, progress and the design, objectives and timing of its clinical trials for KER-050; the potential of KER-050 as a treatment for multilineage cytopenias, including patients with MDS and myelofibrosis, and potentially promote erythropoiesis in patients with ineffective hematopoiesis; the potential of KER-050 to treat thrombocytopenia in patients with MDS and myelofibrosis; and the potential of ALK2 inhibition to treat anemia resulting from CKD and other acute and chronic inflammatory diseases. Because such statements are subject to risks and uncertainties, actual results may differ materially from those expressed or implied by such forward-looking statements. These risks and uncertainties include, among others: Keros’ limited operating history and historical losses; Keros’ ability to raise additional funding to complete the development and any commercialization of its product candidates; Keros’ dependence on the success of its lead product candidates, KER-050 and KER-047; that Keros may be delayed in initiating, enrolling or completing any clinical trials; competition from third parties that are developing products for similar uses; Keros’ ability to obtain, maintain and protect its intellectual property; Keros’ dependence on third parties in connection with manufacturing, clinical trials and pre-clinical studies; Keros’ ability to enter into new collaborations; and risks relating to the impact on our business of the COVID-19 pandemic or similar public health crises.

These and other risks are described more fully in Keros’ filings with the Securities and Exchange Commission (“SEC”), including the “Risk Factors” section of the Company’s Quarterly Report on Form 10-Q, filed with the SEC on May 5, 2022, and its other documents subsequently filed with or furnished to the SEC. All forward-looking statements contained in this press release speak only as of the date on which they were made. Except to the extent required by law, Keros undertakes no obligation to update such statements to reflect events that occur or circumstances that exist after the date on which they were made.

Investor Contact:

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KEROS THERAPEUTICS

KER-050 Update

June 2022

Disclaimer

Statements contained in this presentation regarding matters that are not historical facts are “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995, as amended. Words such as "anticipates," "believes," "expects," "intends," “plans,” “potential,” "projects," “would” and "future" or similar expressions are intended to identify forward-looking statements. Examples of these forward-looking statements include statements concerning: Keros’ expectations regarding its growth, strategy, progress and the design, objectives and timing of its preclinical studies and clinical trials for KER-050, KER-047 and KER-012; the potential impact of COVID-19 on Keros’ ongoing and planned preclinical studies, clinical trials, business and operations; and the potential of Keros’ proprietary discovery approach. Because such statements are subject to risks and uncertainties, actual results may differ materially from those expressed or implied by such forward-looking statements. These risks and uncertainties include, among others: Keros’ limited operating history and historical losses; Keros’ ability to raise additional funding to complete the development and any commercialization of its product candidates; Keros’ dependence on the success of its lead product candidates, KER-050 and KER-047; that Keros may be delayed in initiating, enrolling or completing any clinical trials; competition from third parties that are developing products for similar uses; Keros’ ability to obtain, maintain and protect its intellectual property; Keros’ dependence on third parties in connection with manufacturing, clinical trials and pre-clinical studies; and risks relating to the impact on our business of the COVID-19 pandemic or similar public health crises.

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Certain information contained in this presentation relates to or is based on studies, publications, surveys and other data obtained from third-party sources and the Company’s own internal estimates and research. While we believe these third-party sources to be reliable as of the date of this presentation, it has not independently verified, and makes no representation as to the adequacy, fairness, accuracy or completeness of, any information obtained from third -party sources. Finally, while we believe our own internal research is reliable, such research has not been verified by any independent source.

The trademarks included in this presentation are the property of the owners thereof and are used for reference purposes only.

Keros is Developing Differentiated Clinical Assets in Hematological, Pulmonary, and Musculoskeletal Disorders

Program	Asset	Phase of Development	Status	Next Milestones*
Hematology	KER-050 (therapeutic protein)	Myelodysplastic syndromes (Preclinical → Phase 1 → Phase 2)	Phase 2 clinical trial ongoing	Additional data from the Phase 2 clinical trial: End of 2022
		Myelofibrosis (Preclinical → Phase 1 → Phase 2)	Phase 2 clinical trial ongoing	Initial data: End of 2022
	KER-047 (small molecule)	Iron deficiency anemia (Preclinical → Phase 1 → Phase 2)	Completed Phase 1 clinical trial	Initiate Phase 2 clinical trial: Q3 2022 Initial data: End of 2022
		Iron-refractory iron deficiency anemia (Preclinical → Phase 1 → Phase 2)		Initiate Phase 2 clinical trial: H1 2022 Initial data: End of 2022
Pulmonary	KER-012 (therapeutic protein)	Pulmonary arterial hypertension (Preclinical → Phase 1)	Phase 1 clinical trial in healthy volunteers ongoing	Additional data from Part 2 of the Phase 1 clinical trial: H2 2022
Musculoskeletal		Bone disorders (Preclinical → Phase 1)		
Preclinical Pipeline		Musculoskeletal and hematology (Preclinical)		

*Anticipated clinical milestones are subject to the impact of COVID-19 on our business.

KER-050

KER-050 is an investigational modified ActRIIA ligand trap designed to inhibit a subset of TGF-β superfamily ligands, including activin A, activin B, GDF8, and GDF11

In preclinical studies, treatment with a mouse research form of KER-050 (RKER-050) has been shown to increase both erythropoiesis and thrombopoiesis:

- Induced red blood cell (RBC) production by promoting multiple stages of erythroid differentiation
- Increased platelet production by increasing megakaryocyte progenitors as well as promoting terminal maturation

27th Annual Congress of the European Hematology Association

KER-050 Presentations:

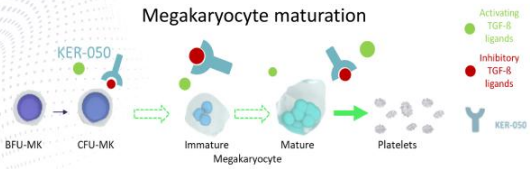
Preclinical

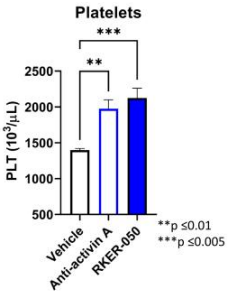
- "RKER-050, a novel inhibitor of TGF-β superfamily signaling, induced platelet production in healthy mouse megakaryocytes"

Clinical

- "A Phase 2, open-label, ascending dose study of KER-050 for the treatment of anemia in patients with very low, low, or intermediate risk myelodysplastic syndromes"

Treatment with RKER-050 Increased Platelet Production in Mice Potentially by Blocking Inhibitory TGF-β Ligands such as Activin A while Permitting BMP Signaling

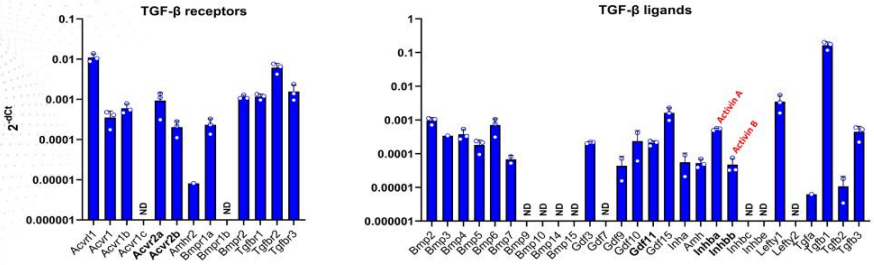




- Inhibitory TGF-β ligands, including activin A, drive SMAD 2/3 quiescence signaling and prevent megakaryocyte maturation
- Activating TGF-β ligands, including the bone morphogenetic proteins (BMPs), increase SMAD 1/5/9 signaling and promote thrombopoiesis

- Both anti-activin A and RKER-050 significantly increased platelet numbers in mice, suggesting:
  - activin A inhibition may be a partial driver for the observed effects of RKER-050 on platelets; and
  - RKER-050 is potentially acting by blocking SMAD 2/3-driven hematopoietic quiescence signaling

Megakaryocyte Precursor Cells Express Activins, GDFs, BMPs and TGF-β Ligands and their Cognate Receptors



- qPCR was performed on RNA from bone marrow-derived megakaryocyte precursor cells isolated from untreated mice to assess TGF-β ligands and receptors gene expression
- Murine bone marrow megakaryocyte precursors express activins, GDFs, BMPs and TGF-β ligands and their cognate receptors, supporting the role of TGF-β superfamily signaling in differentiation of megakaryocytes
  - KER-050 is designed to bind activin A, activin B and GDF11 expressed by megakaryocytes
  - By comparison, luspatercept reportedly binds activin B, GDF8 and GDF11, but does not bind activin A expressed by megakaryocytes (Sako et. al. J Biol Chem. 2010; 285(27): 21037–21048)

KER-050 Overview

- In a Phase 1 clinical trial of KER-050, treatment led to rapid, sustained and dose-dependent increases in RBCs and platelets
  - Inhibition of activin A in the bone resulted in increases in bone specific alkaline phosphatase (BSAP), a marker of osteoblast activity, which is supportive of change in the bone marrow microenvironment
- We believe that data from our preclinical studies and our Phase 1 clinical trial support that treatment with KER-050 has the potential to address ineffective hematopoiesis in diseases like myelodysplastic syndromes and myelofibrosis

Myelodysplastic Syndromes (MDS)

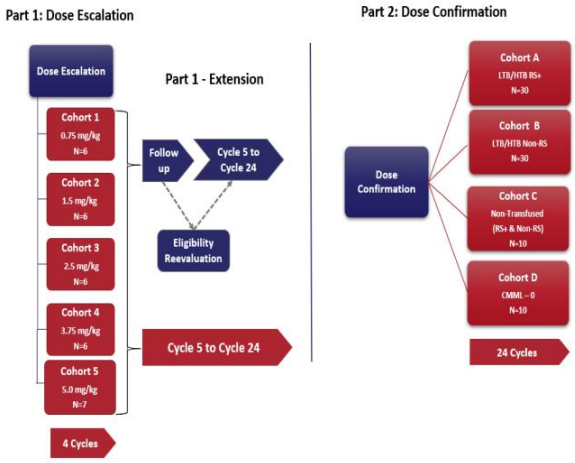
- MDS are a heterogeneous group of myeloid neoplasms characterized by clonal proliferation of hematopoietic stem cells, recurrent genetic abnormalities, myelodysplasia and ineffective hematopoiesis
  - Abnormalities in the bone marrow microenvironment, including altered hematopoietic–stromal interactions, results in ineffective hematopoiesis
  - This results in peripheral blood cytopenias with approximately 90% of lower risk MDS (LR-MDS) patients experiencing anemia
  - Patients have a high risk of evolution to acute myeloid leukemia (AML)
  - Patients are also at high risk of morbidity and mortality, including increased risk of infection, hemorrhage, iron overload due to transfusions and cardiovascular disease
- Treatment options for LR-MDS patients include erythroid stimulating agents (ESA), erythroid maturation agent (EMA), RBC transfusions and iron chelation therapy
  - However, the benefit of RBC agents is limited in certain patients including patients with high transfusion burden

KER050-MD-201

A Phase 2 Clinical Trial Of KER-050 For The Treatment Of Anemia In Patients With Very Low, Low Or Intermediate Risk Myelodysplastic Syndromes (MDS)

Phase 2 Clinical Trial of KER-050 in MDS

- Phase 2, multicenter, open-label clinical trial in very low-, low- and intermediate-risk MDS patients (LR-MDS)
- KER-050 administered once every four weeks (Q4W)
- Trial objectives:
  - Part 1
    - Evaluate safety, tolerability and pharmacokinetics
    - Evaluate pharmacodynamic effects and efficacy of KER-050
  - Part 2
    - To confirm the safety, tolerability and efficacy of the dose(s) selected from Part 1
- Eligible patients in Part 1 and Part 2 may remain on treatment up to 24 cycles (2 years)
- The data included in this presentation represent available data from a data cut-off date of April 3, 2022



Phase 2 Clinical Trial of KER-050 in MDS

Key Eligibility Criteria:

- MDS with very low-, low-, or intermediate-risk disease, as classified by the International Prognostic Scoring System-Revised, including both patients that did not have ring sideroblasts (non-RS) and patients that have ring sideroblasts (RS+)
- ESA naïve and experienced patients are eligible
- No prior treatment with azacitidine, decitabine, lenalidomide, luspatercept or sotatercept
- Anemia, categorized in one of the following three groups:
  - Non-transfused (NT): hemoglobin (Hgb) ≤10 g/dL
  - Low transfusion burden (LTB): 1-3 units of RBC/8 weeks for Hgb ≤9 g/dL
  - High transfusion burden (HTB): ≥4 units of RBC/8 weeks for Hgb ≤9 g/dL

Select Efficacy Endpoints:

- IWG 2006 Hematological improvement-erythroid (HI-E)
  - Hemoglobin increase of ≥1.5 g/dL for 8 weeks (in NT and LTB patients)
  - Reduction of ≥4 RBC units transfused over 8 weeks compared to baseline (in HTB patients)
- Transfusion independence (TI) for at least 8 weeks in patients who require ≥ 2 RBC units transfused at baseline

Demographics and Baseline Characteristics from Part 1 Dose Escalation

	KER-050 Dose Level (mg/kg)					
	0.75 (N=6)	1.5 (N=6)	2.5 (N=6)	3.75 (N=6)	5 (N=7)	All (N=31)
Age, Mean (range)	75.5	68.3	72	73.3	76.7	73.3 (55-88)
Female, n (%)	5	1	4	2	0	12 (38.7%)
RS positive	3	3	3	4	4	17 (54.8%)
Transfusion Burden						
Non-Transfused (NT), 0 units	3	0	1	1	0	5 (16.1%)
Low Transfusion Burden (LTB), <4 units	2	0	1	2	3	8 (25.8%)
High Transfusion Burden (HTB), ≥4 units	1	6	4	3	4	18 (58.1%)
WHO MDS Classification, n (%)						
MDS-MLD	3	3	3	1	3	13 (41.9%)
MDS-RS-MLD	2	2	3	4	3	14 (45.2%)
MDS-RS-SLD	0	1	0	0	0	1 (3.2%)
MDS with isolated del(5q)	1	0	0	0	0	1 (3.2%)
N/A	0	0	0	1	1	2 (6.5%)
Prior ESA Therapy, n (%)	0	0	2	1	0	3 (9.7%)
Iron chelator, n (%)	0	2	2	2	1	7 (22.6%)
Efficacy Evaluable Patients*, n(%)	6	4	6	6	5	27 (87.1%)
Efficacy Evaluable HTB Patients, n (%)**	1	4	4	3	4	16/18 (88.9%)

*Patients with at least 8 weeks of post-treatment hemoglobin and transfusion assessments were defined as efficacy evaluable.
** Percentage was based on all HTB patients.

KER-050 was Generally Well-Tolerated at all Doses Tested in Part 1

n (%)	KER-050 Dose Level (mg/kg)					
	0.75 (N=6)	1.5 (N=6)	2.5 (N=6)	3.75 (N=6)	5 (N=7)	All (N=31)
TEAE	6 (100)	6 (100)	6 (100)	5 (83.3)	6 (85.7)	29 (93.5)
Related TEAE	1 (16.7)	0	1 (16.7)	1 (16.7)	2 (28.6)	5 (16.1)
Grade ≥3	1 (16.7)	1 (16.7)	3 (50.0)	2 (33.3)	5 (71.4)	12 (38.7)
SAE	1 (16.7)	2 (33.3)	1 (16.7)	2 (33.3)	4 (57.1)	10 (32.3)
TEAE requiring dose modification	0	0	0	1 (16.7)	1 (14.3)	2 (6.5)
Death	0	1 (16.7)	0	0	0	1 (3.2)

- No drug related serious adverse events or dose-limiting toxicities were reported
- 10 patients experienced treatment-emergent SAEs
- 4 patients discontinued study drug: 1 withdrew consent, 1 death (unrelated to study drug, per autopsy due to obesity-associated heart disease), 2 withdrew due to unrelated TEAE
- No patients developed high-risk MDS or progressed to AML

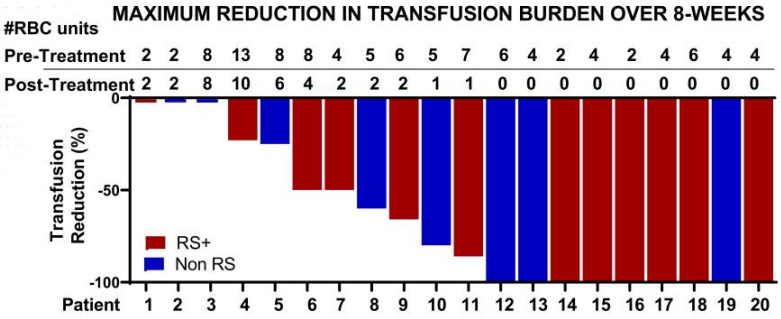
April 3, 2022 data cutoff

Efficacy Summary of 8-Week Endpoints Achieved in MDS Patients

Response Summary	Response Rate, n/m (%)	
	All evaluable patients	HTB evaluable patients
Overall Erythroid Response (HI-E or TI)	14/27 (51.8%)	11/16 (68.8%)
IWG 2006 HI-E	12/26 (46.2%)	11/16 (68.8%)
Transfusion independence (TI*)	9/20 (45%)	7/16 (43.8%)
RS+	6/12 (50%)	4/9 (44.4%)
Non-RS	3/8 (37.5%)	3/7 (42.9%)

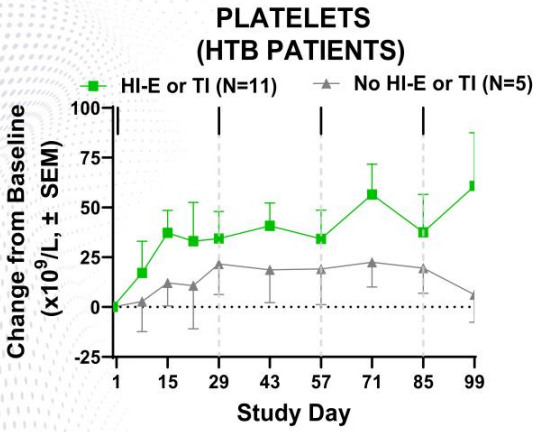
*Baseline Transfusion Requirement ≥2 RBC units
n = responders in each category; m = 8-week evaluable population as of data cutoff date

Treatment with KER-050 Resulted in HI-E and TI in Transfusion-Dependent Non-RS and RS+ MDS patients



- Improvements in transfusion burden were seen across LTB and HTB patients
- 7/16 HTB and 2/4 LTB patients achieved TI after KER-050 treatment

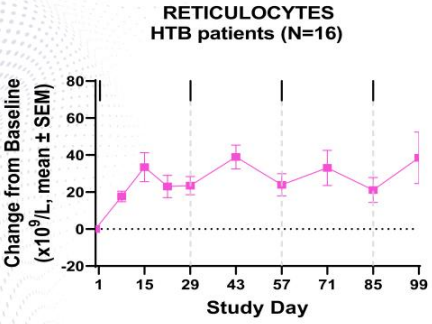
Sustained Increase in Platelets Observed in HTB Patients Achieving HI-E or TI with KER-050 Treatment

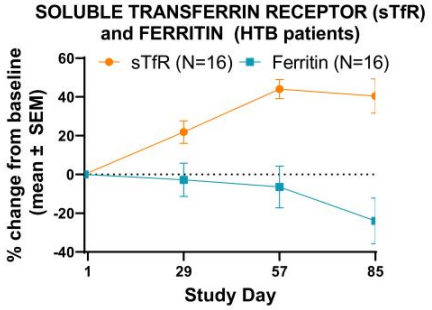


KER-050 upregulated thrombopoiesis

- Sustained increases in platelets observed in HTB patients achieving HI-E or TI endpoints
- No patients required dose reduction due to thrombocytosis
- Preclinical data demonstrate this effect could potentially be mediated by KER-050 inhibition of activin A

Observed Changes in Hematologic and Ferrokinetic Biomarkers Support Induction of Erythropoiesis with KER-050 Treatment in all HTB Patients





- Increases in reticulocytes and soluble transferrin receptor, a biomarker of erythropoiesis, were observed in HTB patients
- Serum ferritin was elevated in HTB patients, indicative of transfusion-related iron overload
  - Mean baseline ferritin was 1359.2 ng/mL
- Mean maximum reduction in ferritin was 29.1% following 3 months of treatment with KER-050

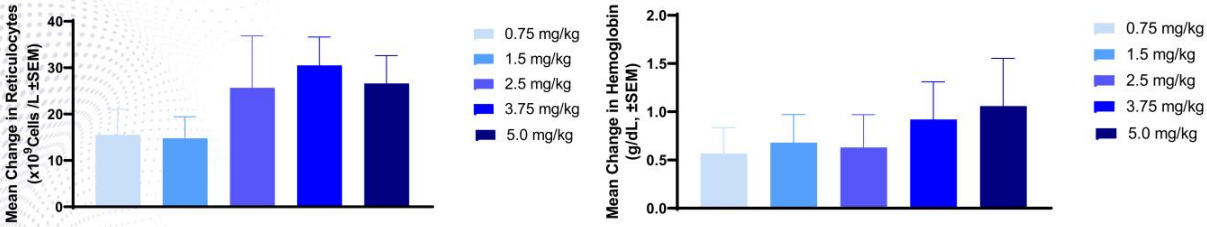
April 3, 2022 data cutoff

Summary

- LR-MDS patients enrolled in Part 1 of this Phase 2 clinical trial were primarily transfusion-dependent with multilineage dysplasia
  - 58% of patients were HTB patients with elevated serum ferritin
- KER-050 was generally well-tolerated as of data cut-off date at doses ranging from 0.75 to 5.0 mg/kg Q4W
- No drug related SAEs or dose-limiting toxicities were observed
- Observed PD effects in reticulocytes, soluble transferrin receptor and platelets support the proposed KER-050 mechanism of increasing hematopoiesis
- HI-E and transfusion independence have been observed in both RS+ and non-RS MDS patients treated with KER-050 across varying transfusion burdens, with 44% of HTB patients achieving TI during this 3-month treatment trial
  - Reductions in serum ferritin were also observed in HTB patients
- These preliminary data support the potential of KER-050 as a treatment for multilineage cytopenias in LR-MDS, including difficult-to-treat HTB patients

MD-201 Dose Confirmation has been Initiated

Markers of erythropoiesis during first 8 weeks of treatment



- Dose-related increases in reticulocytes and hemoglobin were observed in this primarily transfusion-dependent trial population
- Safety Review Committee recommended initiation of Part 2 dose confirmation of the Phase 2 clinical trial
  - Part 2 starting dose of 3.75 mg/kg Q4W with the option to up-titrate to 5 mg/kg Q4W
- Recommended Part 2 starting dose was based on:
  - Safety and tolerability data from patients treated with 0.75 to 5.0 mg/kg Q4W
  - Exposure response of hematological parameters, including reticulocytes and hemoglobin
  - Rates of HI-E and transfusion independence observed during 3-month treatment

April 3, 2022 data cutoff

Anticipated Key Milestones*

KER-050

• Announce additional data from Phase 2 trial in MDS	End 2022
• Announce initial data from Phase 2 trial in myelofibrosis	End 2022

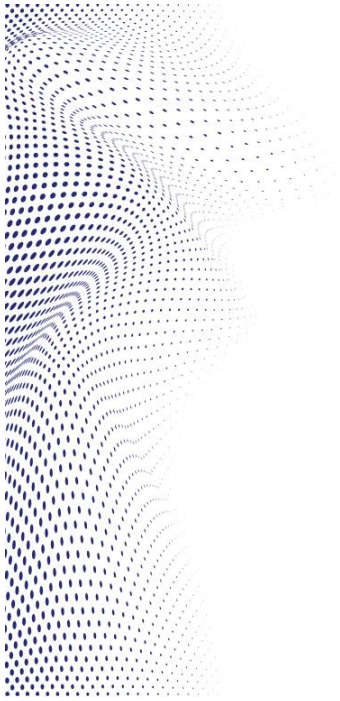
KER-047

• Initiate Phase 2 trial in IRIDA	H1 2022 (initial data end of 2022)
• Initiate Phase 2 trial in IDA	Q3 2022 (initial data end of 2022)

KER-012

• Announce additional data from Part 2 of Phase 1 trial	H2 2022

*Anticipated clinical milestones are subject to the impact of COVID-19 on our business.



Thank You