



# Corporate Presentation

December 2024



# Disclaimer and FLS

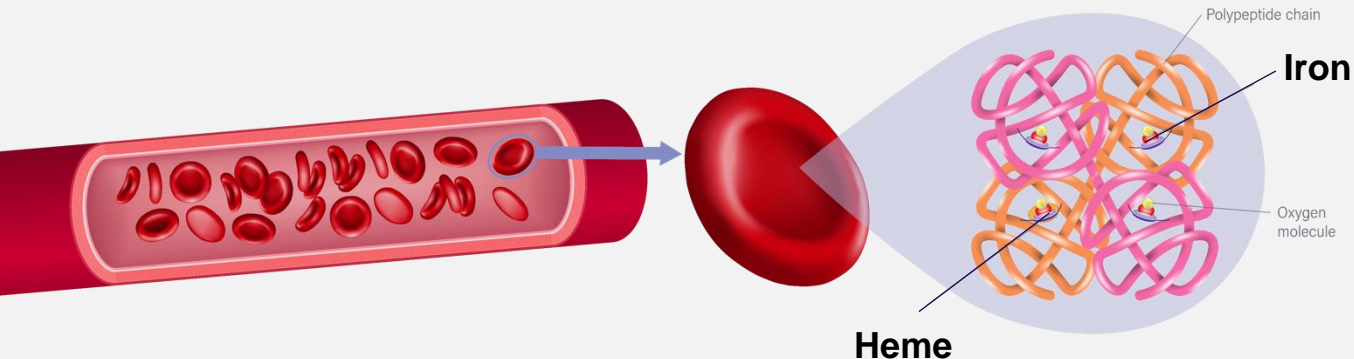
This presentation contains “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995, including, but not limited to, express or implied statements regarding Disc’s expectations with respect to its AURORA Phase 2 and BEACON Phase 2 clinical trials of bitopertin and the results thereof, its Phase 1b/2 clinical trial of DISC-0974 in patients with MF and NDD-CKD patients with anemia, its initial SAD data in its Phase 1 clinical trial of DISC-3405 in healthy volunteers; projected timelines for the initiation and completion of its clinical trials, anticipated timing of release of data, and other clinical activities; and Disc’s belief about operating expenses and that it will have capital to fund Disc well into 2027. The use of words such as, but not limited to, “believe,” “expect,” “estimate,” “project,” “intend,” “future,” “potential,” “continue,” “may,” “might,” “plan,” “will,” “should,” “seek,” “anticipate,” or “could” or the negative of these terms and other similar words or expressions that are intended to identify forward-looking statements. Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are based on Disc’s current beliefs, expectations and assumptions regarding the future of Disc’s business, future plans and strategies, clinical results and other future conditions. New risks and uncertainties may emerge from time to time, and it is not possible to predict all risks and uncertainties. No representations or warranties (expressed or implied) are made about the accuracy of any such forward-looking statements.

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**Bitopertin, DISC-0974, and DISC-3405 are investigational agents and are not approved for use as therapies in any jurisdiction worldwide**

# Targeting Fundamental Pathways of Red Blood Cell Biology using Validated Mechanisms



Iron and heme metabolism are critical pathways in hematology with genetically-validated targets

Key points of intervention across a wide range of diseases

## Spectrum of Hematologic Diseases Addressable by Disc Portfolio

Severe Rare (000s)

Moderate Prevalence (100K+)

Widely Prevalent (MMs)

**Diamond-Blackfan Anemia**

**Erythropoietic Porphyrias**

Beta-Thalassemia

**Anemia of Myelofibrosis**

**Myelodysplastic Syndromes**

Sickle Cell Disease

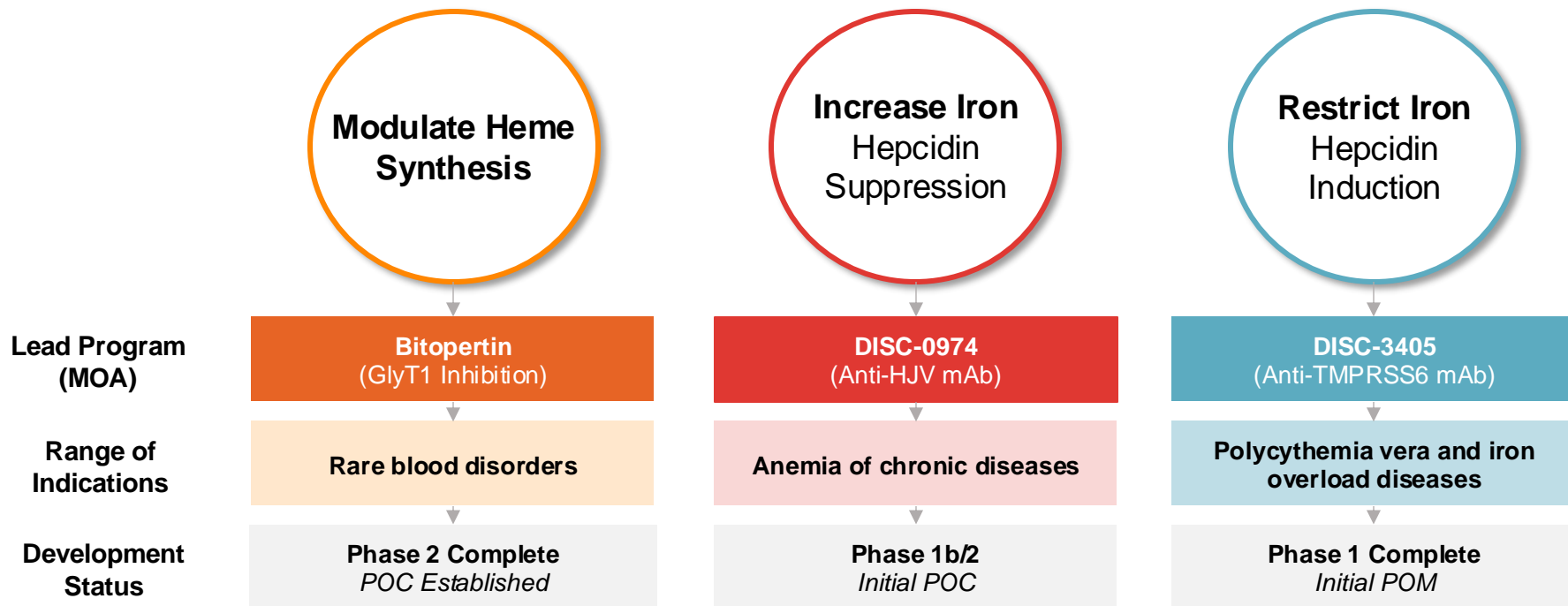
Polycythemia Vera

Hereditary Hemochromatosis

IBD Anemia

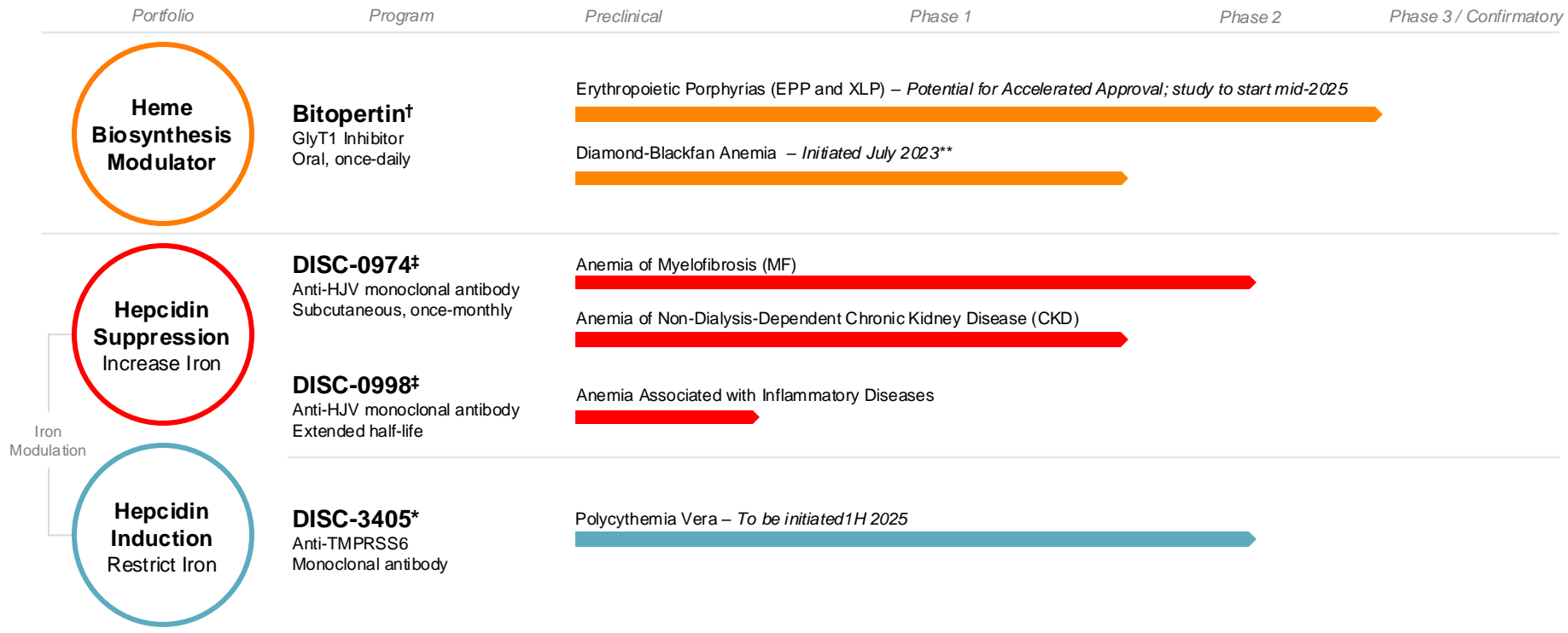
**CKD Anemia**

# By Targeting Heme and Iron, Disc's Portfolio Can Address a Wide Range of Hematologic Disorders





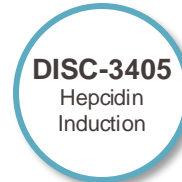
# Disc's Hematology-Focused Pipeline

Multiple programs in development with pipeline-in-a-product potential





# Projected Upcoming Milestones and Events

Multiple additional data catalysts anticipated in the next 18 months

Program	Indication	H1 2025	H2 2025	2026
 <p><b>Bitopertin</b> Heme Synthesis Modulator</p>	<b>Erythropoietic Porphyrias (EPP and XLP)</b>	<ul style="list-style-type: none"> <li>Feedback from Type C Meeting with FDA</li> <li>APOLLO Study Initiation</li> </ul>	<i>Guidance on NDA timing to be provided in Q1 2025</i>	
	<b>Diamond-Blackfan Anemia (DBA)</b>	<ul style="list-style-type: none"> <li>IIT ongoing →</li> </ul>		
 <p><b>DISC-0974</b> Hepcidin Suppression</p>	<b>Anemia of Myelofibrosis (MF)</b>		<ul style="list-style-type: none"> <li>Initial Phase 2 Data</li> </ul>	<ul style="list-style-type: none"> <li>Final Phase 2 Data</li> </ul>
	<b>Anemia of Chronic Kidney Disease (CKD)</b>		<ul style="list-style-type: none"> <li>Phase 1b Multiple-Dose Data</li> </ul>	<ul style="list-style-type: none"> <li>Phase 2a Initiation</li> <li>Initial Phase 2a Data</li> </ul>
 <p><b>DISC-3405</b> Hepcidin Induction</p>	<b>Polycythemia Vera</b>	<ul style="list-style-type: none"> <li>Phase 2a Study Initiation</li> </ul>		<ul style="list-style-type: none"> <li>Phase 2a Data</li> </ul>

*Supported by a strong cash position with runway well into 2027*

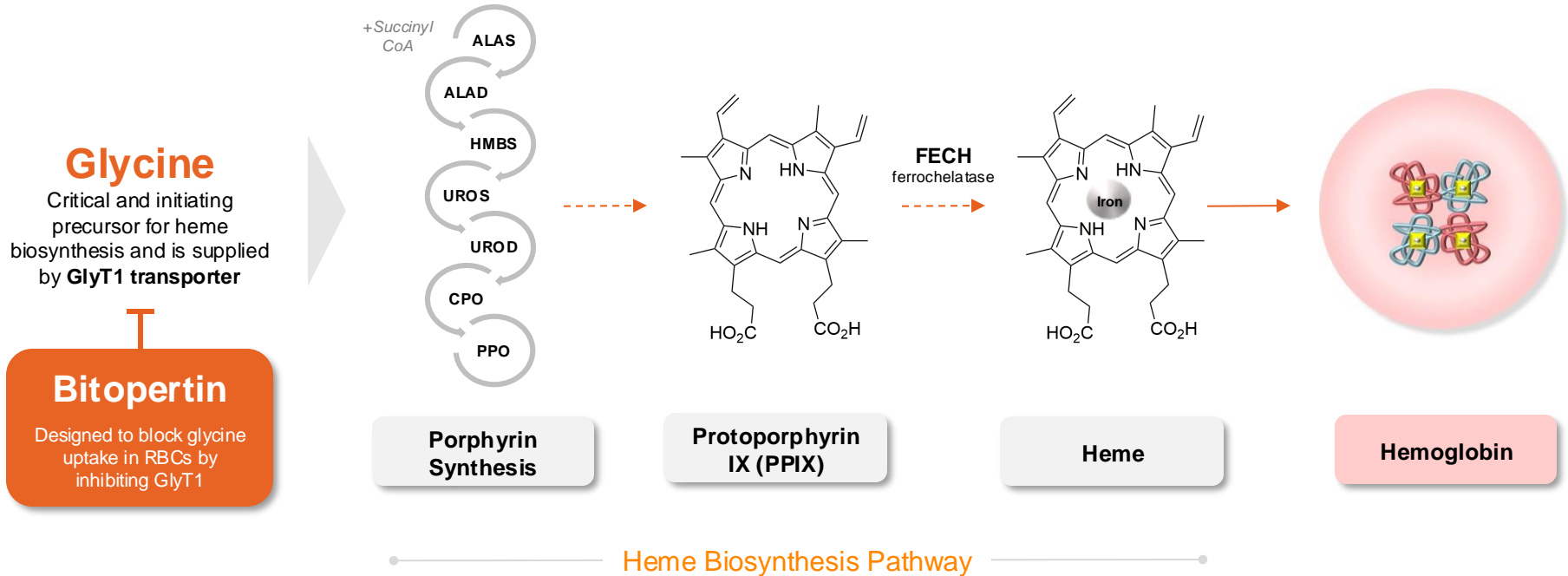


**Bitopertin**  
**GlyT1 Inhibitor**  
Heme Biosynthesis  
Modulation



# Bitopertin: Investigational Oral, Selective GlyT1 Inhibitor

In multiple clinical trials by Roche, bitopertin was observed to modulate heme biosynthesis by blocking uptake of glycine in erythrocytes



# Erythropoietic Protoporphyrria (EPP)

Rare, debilitating and lifelong condition characterized by extreme pain and damage to skin caused by light

Genetic condition caused by defective heme biosynthesis – deficient enzyme ferrochelatase

- Lifelong and presents in early childhood
- Caused by accumulation of toxic metabolite PPIX
- XLP, mechanistically similar disease, also PPIX-related

Debilitating and potentially life-threatening

- Skin: severe, disabling pain attacks (days), edema, burning
- Hepatobiliary disease: gallstones, liver dysfunction or failure
- Psychosocial well-being (fear, anxiety) and development

No cure or disease-modifying treatment

- Avoid sun / light, protective clothing, window tinting, Zn/Ti Oxide
- One FDA-approved agent, afamelanotide, a surgically-implanted tanning agent

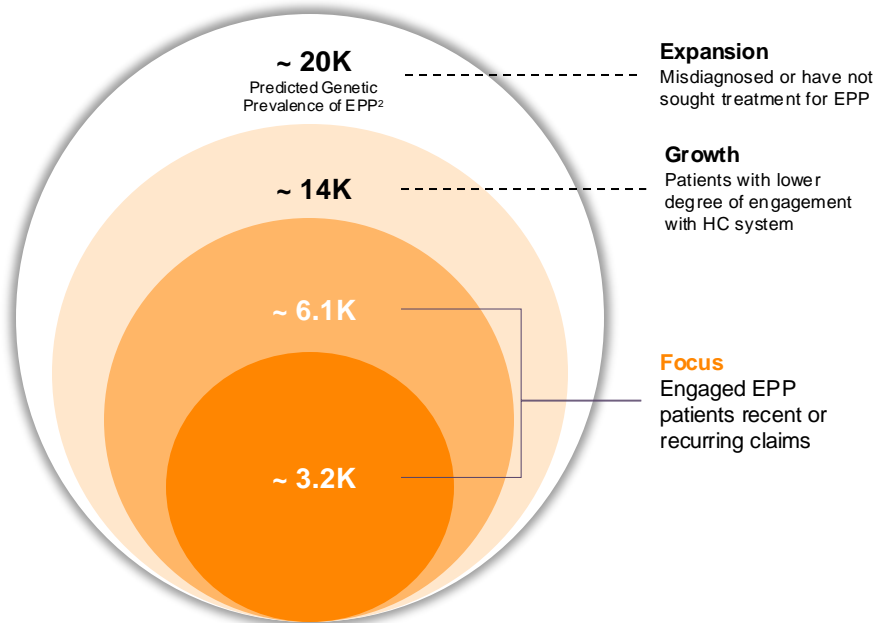


Image sources: Daily Mail Australia (2019); FDA Scientific Workshop on EPP (2016);  
Buonuomo et al. (2014) Arch Dis Child

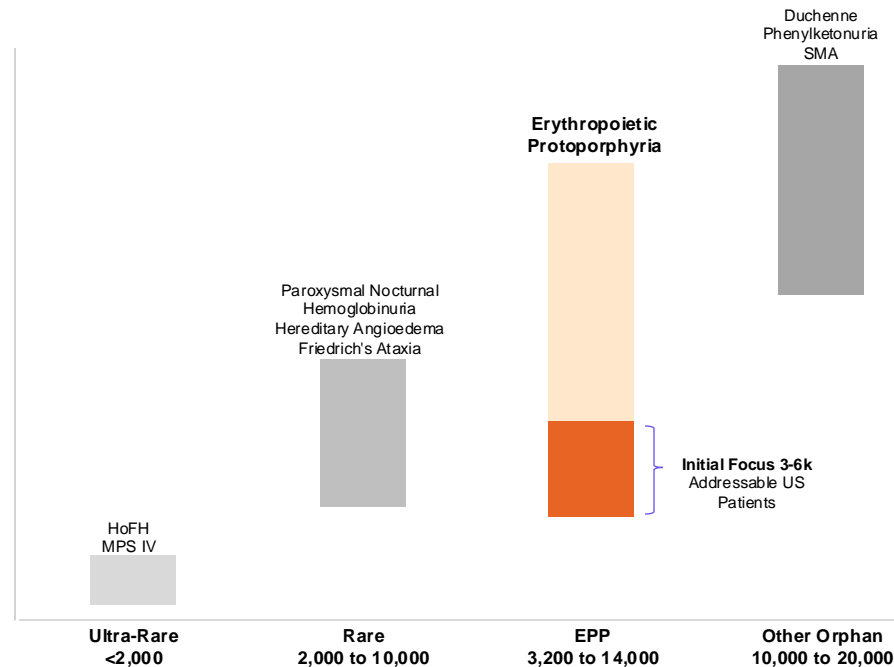
# EPP Prevalence: Est. 3-6K addressable patients in the US

Based on analysis of ICD-10 codes in claims data

## Prevalence of EPP Patients in the U.S.

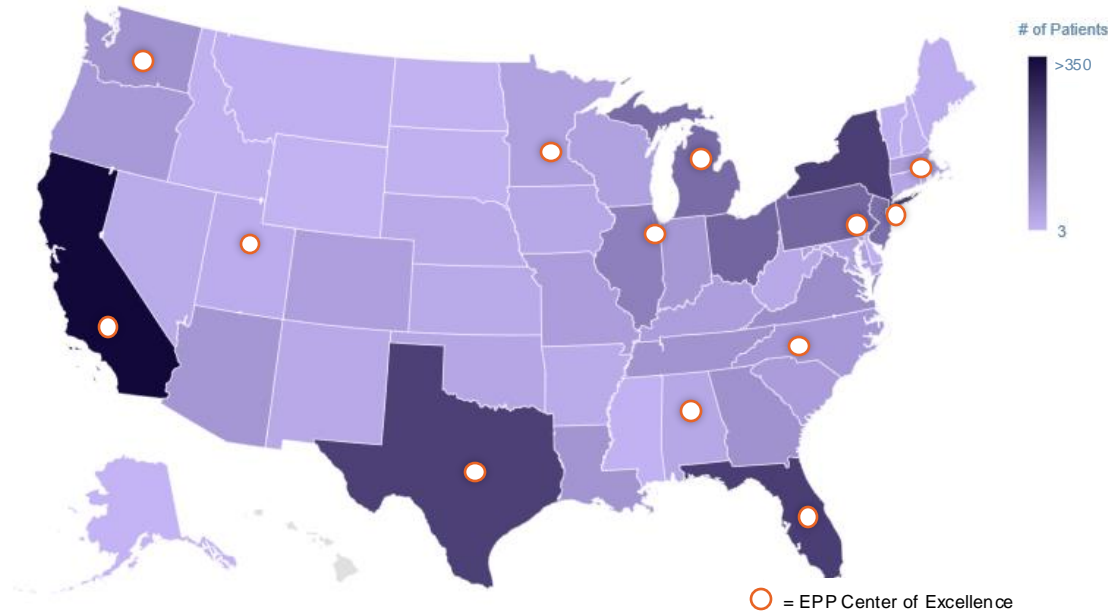


## US EPP Prevalence Comparable to Major Rare Diseases



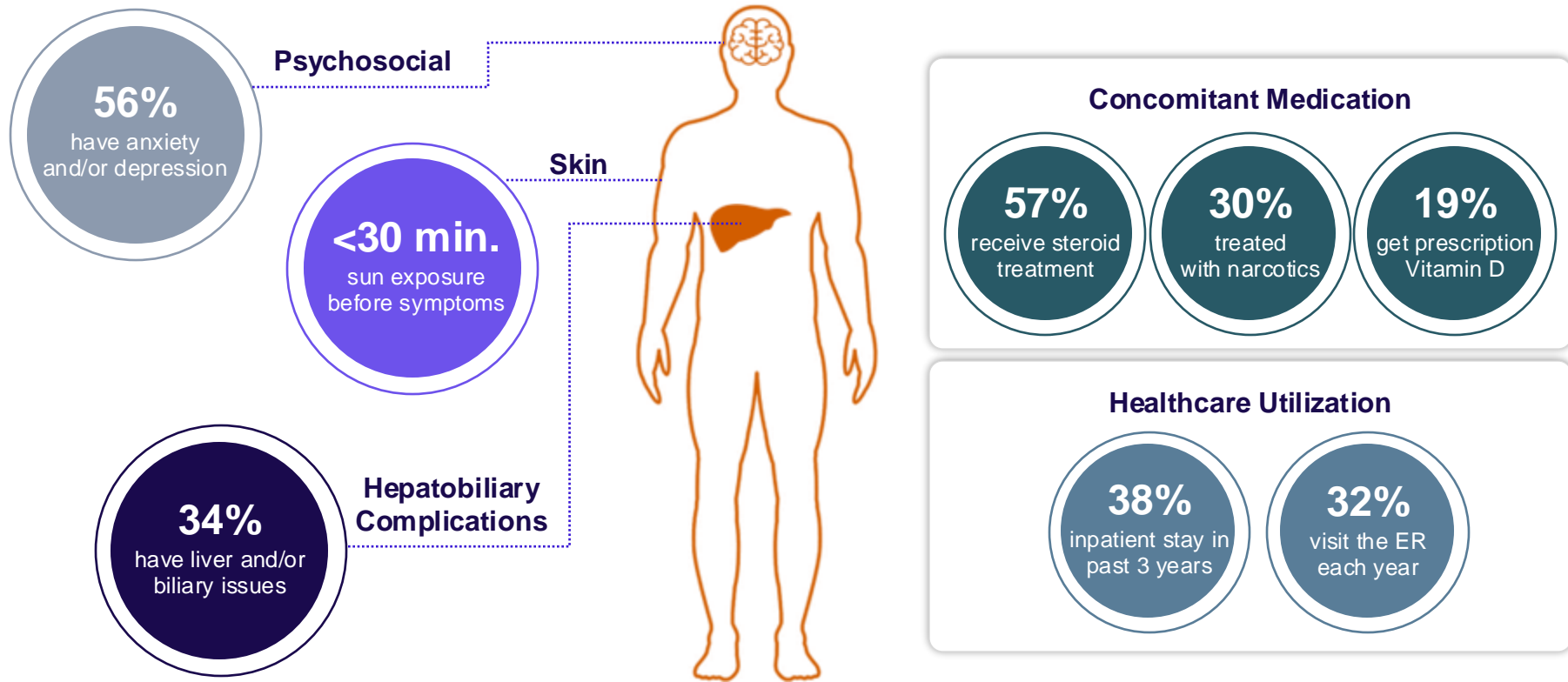
# EPP patients are identifiable and can be addressed through a highly efficient operating model

## Distribution of EPP Patients



*Concentration of patients in key accounts enables a targeted and efficient field force*

# Real world data confirm EPP has a significant impact on patients' lives across multiple domains



# PPIX is a Driver of Disease in EPP / XLP Patients

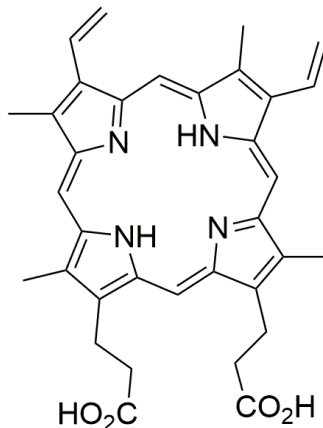
Toxic and photo-active metabolite accumulates in RBCs and is transported to skin and other organs, causing damage

## Skin

- Porphyrin ring absorbs light and **emits energy and heat**
- Oxidative damage to endothelial capillaries and surrounding tissue, perivascular edema, complement activation
- Pain, burning sensation, swelling, inflammation, chronic skin lesions

## Psychosocial

- Issues with focus and concentration
- Lack of sleep, physical and social isolation
- Significant lifestyle modification, fear and anxiety



Protoporphyrin IX

## Hepatobiliary

- PPIX accumulation in bile canaliculae, causing oxidative damage
- Cholelithiasis requiring surgery or impaired liver function (~25%) and end-stage liver disease requiring transplant (2-5%)
- Clinical and biochemical surveillance

## Other Complications

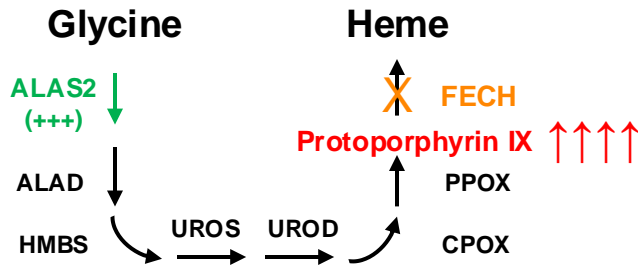
- Nutritional deficiency resulting in osteoporosis and propensity for fractures, chronic alterations to skin (e.g. fragile), mild anemia

# Bitopertin: Potential Disease-Modifying Treatment

Designed to reduce disease-causing PPIX by limiting uptake of glycine into developing erythrocytes

## EPP and XLP Patients

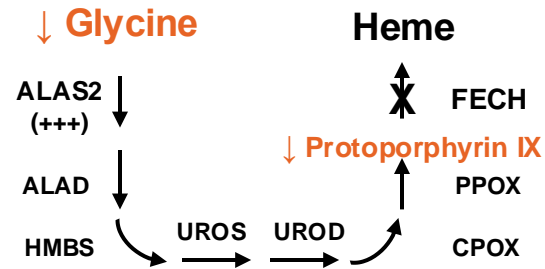
High PPIX Levels



Mutations result in reservoir of pathologically high levels of PPIX

## Bitopertin Treatment

Designed to Reduce PPIX Levels



Potential first disease-modifying treatment for EPP and XLP

# EPP Development Program

## BEACON, AURORA, and HELIOS Studies

### BEACON

- > **EPP and XLP**; N = 26 (22 adults, 4 adolescents)
- > **Australia**
- > **Open-label, randomized, 24-week study**

### AURORA

- > **EPP**; N = 75 adults
- > **United States**
- > **Double-blind, randomized, placebo-controlled, 17-week study**

### HELIOS

- > **EPP and XLP**; adults and adolescents
- > **US and Australia**
- > **Open-label extension study** (>80% rollover from BEACON and AURORA)

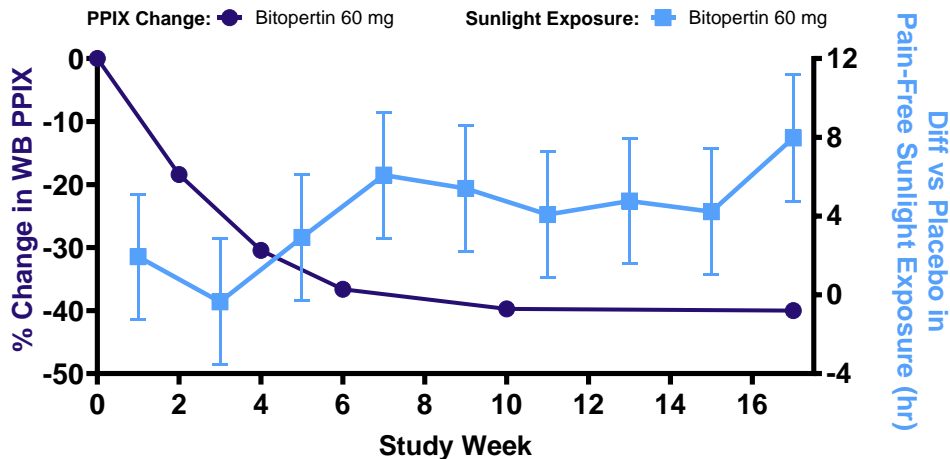
**Trial endpoints:** Changes in blood PPIX levels, time in daylight without pain, light tolerance, time to prodromal symptom (TTPS), QOL, safety / tolerability

**Data availability:** Received positive feedback from EOP2 meeting with the FDA opening up a potential pathway to accelerated approval; Update on FDA Type C meeting on confirmatory trial design to be provided in Q1 2025; APOLLO study to begin by mid-2025

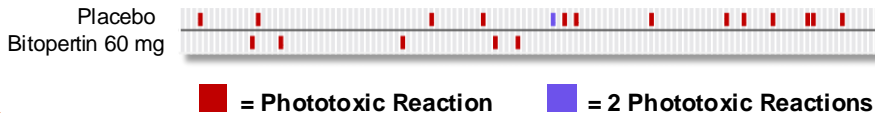


# Summary of AURORA Results

## Bitopertin 60 mg



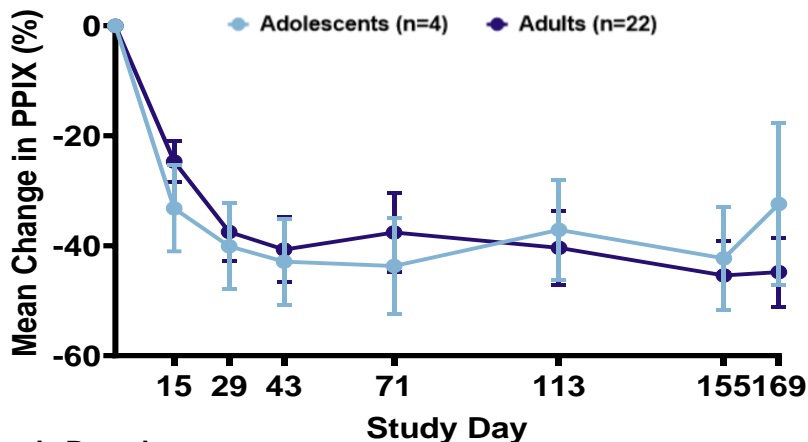
### Phototoxic Reactions



- ⊗ **Significant reductions in PPIX**  
40% reduction vs baseline
- ⊗ **Time-dependent, improvements in pain-free time in sunlight vs placebo**  
2x more light time vs baseline
- ⊗ **Significant 75% reduction in rate of phototoxic reactions vs placebo**  
Phototoxic reaction-free in last 60 days
- ⊗ **Significant improvement in PGIC vs placebo**  
86% reported EPP was 'much better'
- ⊗ **Clear association between PPIX reduction and clinical endpoints**

# Summary of BEACON Results

Consistent with AURORA data, with similar results in adults and adolescents



## Phototoxic Reactions



Compared to 16 reactions in the 4-week baseline period (92% reduction)

## Tertiles of PPIX Change



Light Tolerance Measure (Mean ± SD)	Tertile 3 (-43% to 25%)	Tertile 2 (-53% to -43%)	Tertile 1 (-98% to -53%)
Cumulative total time in sunlight without pain (hr)	145.6 ± 99.5	190.5 ± 111.6	262.1 ± 160.6
Average time in sunlight without pain (hr)	0.86 ± 0.6	1.1 ± 0.7	1.6 ± 1.0
Change from baseline in time to prodrome (min)	85.3 ± 78.8	96.0 ± 109.0	165.5 ± 128.8

Significant reductions in PPIX, improvements in pain-free time in sunlight, reductions in rate of phototoxic reactions, and improvement in QoL with clear association between PPIX reduction and clinical endpoints

# Key Takeaways from Positive End of Phase 2 Meeting

- Alignment with the FDA on all proposed study parameters
- FDA acknowledged that EPP is a serious and potentially life-threatening disease with significant unmet medical need
- FDA agreed that average monthly time in sunlight without pain at the end of a 6-month treatment period can be used as a primary endpoint
- PPIX reduction may be sufficient as a surrogate endpoint supportive of accelerated approval
- Proceeding to APOLLO, a 6-month study with a 60 mg dose of bitopertin in EPP and XLP patients ages 12+, by mid-2025

# Diamond Blackfan Anemia

## Genetic condition caused by defective erythropoiesis

- Mutations in ribosomal protein genes (classically RPS19)
- Heme/globin imbalance: excess heme accumulation leading to toxicity as globin synthesis is delayed

## Characterized by severe anemia that presents in infancy

- Anemia, fatigue, delayed growth, cardiac or renal defects, risk of malignancy
- Patients may also have distinct physical features / congenital abnormalities (i.e., cleft palate, thumb and upper limb abnormalities, short stature, microcephaly)

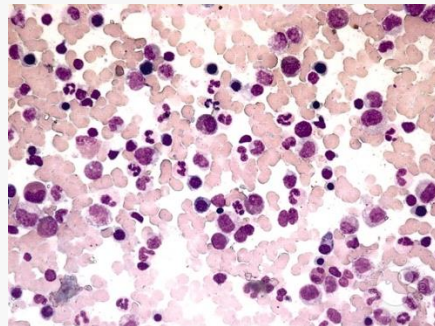
## No approved treatments for DBA

- Patients receive steroids and blood transfusions to manage their condition
- Median life expectancy is 38 years, with 25% mortality by age 50

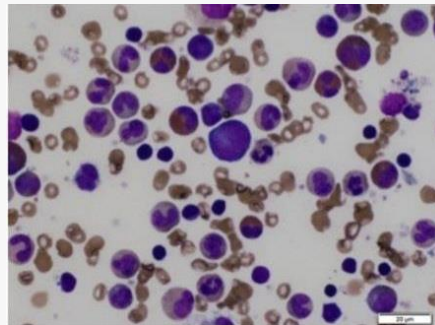
## Rare disease with an incidence rate of 5-7 per 1 million live births

- Estimated worldwide prevalence of 5,000

**Normal**

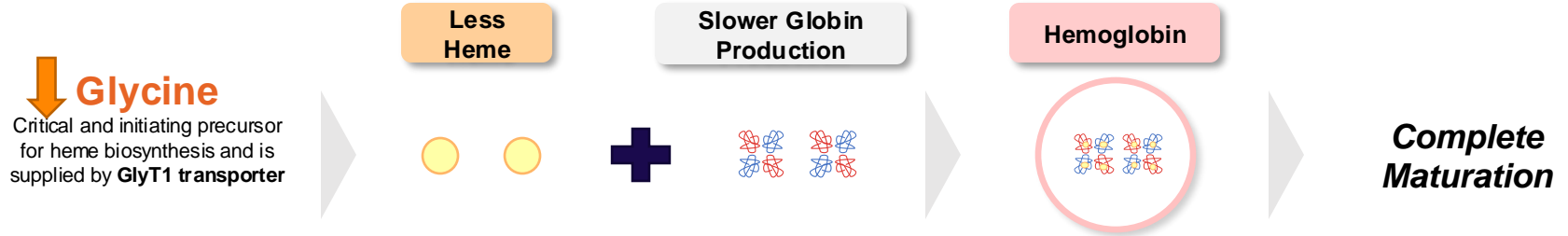


**DBA**

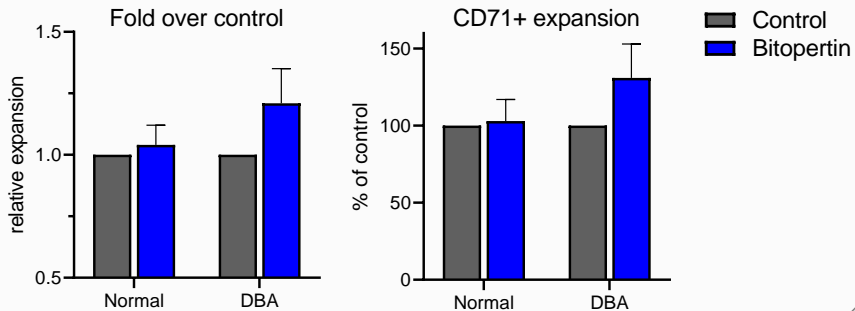


# Bitopertin in Diamond Blackfan Anemia

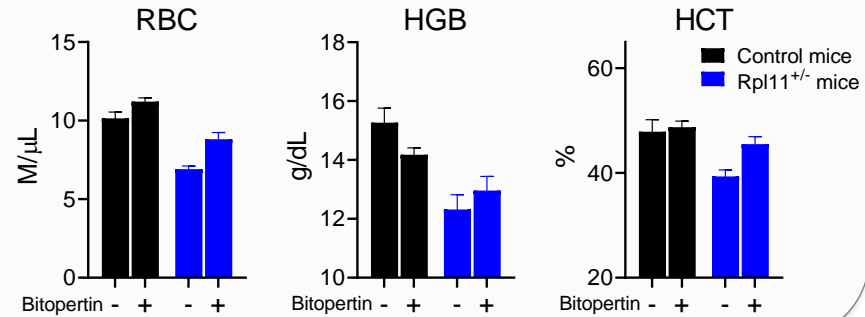
By slowing the influx of glycine, bitopertin lowers heme production, reducing the amount of excess heme and preventing cell death



Primary human marrow in erythroid differentiation cultures treated with 10 ng/ml bitopertin for 7 days



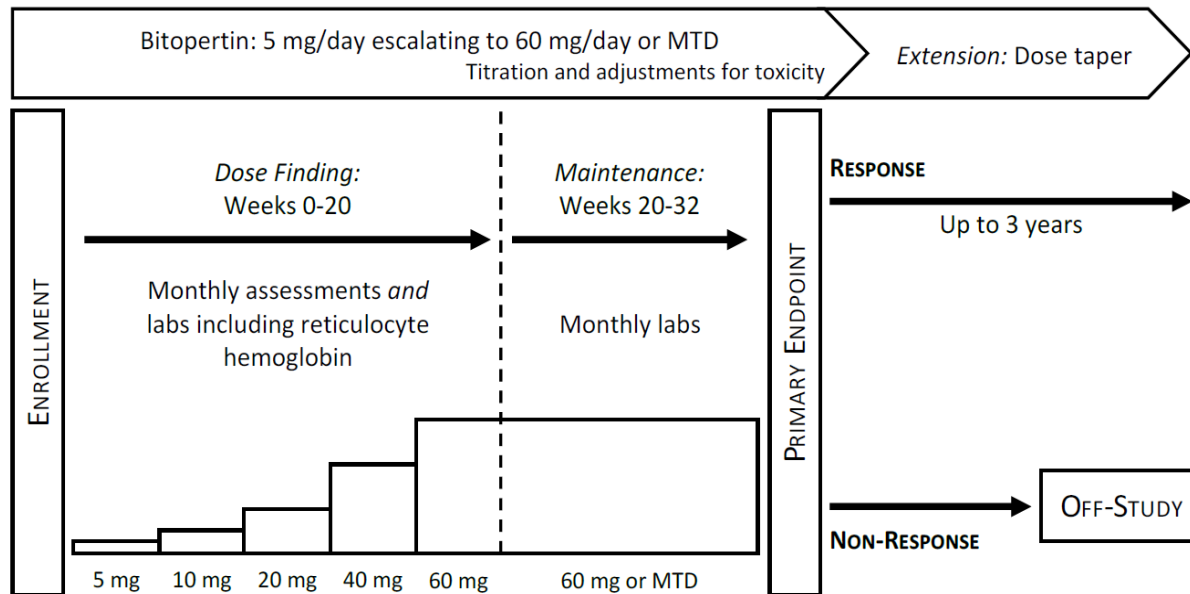
Rpl11 haploinsufficient mice were treated with 100 ppm bitopertin in chow (20 mg/kg/d) for 8 weeks



# Diamond Blackfan Anemia Phase 2 Clinical Trial

*IIT conducted by the NIH under CRADA with Disc*

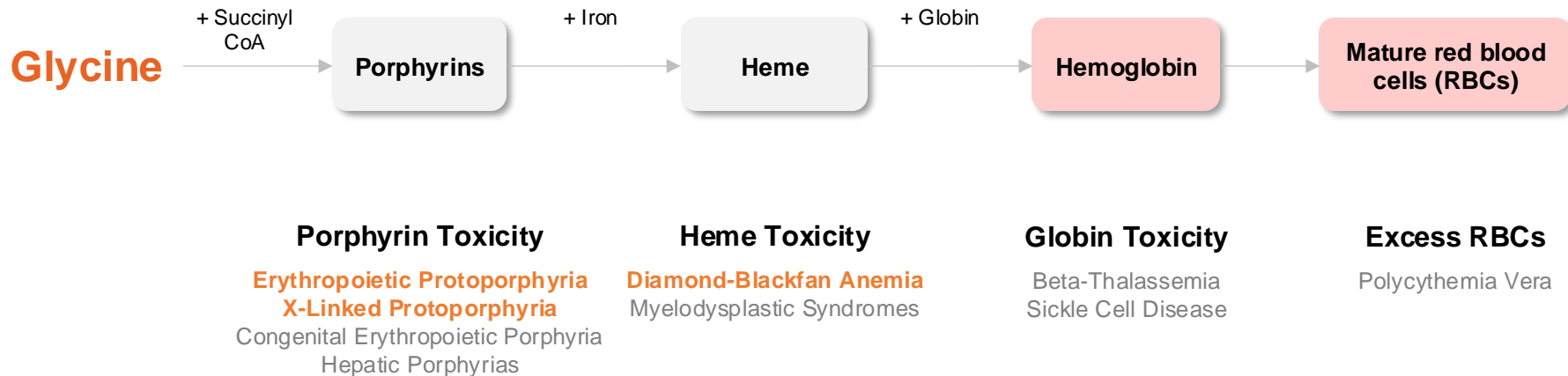
- Single-arm, dose-escalation study with extension
- N=15-25 patients with steroid-refractory and/or relapsed disease, or steroid intolerant
- Response defined as >50% reduction in RBC transfusions over 8-week period or an increase in pre-transfusion hemoglobin of >1.5 g/dL



*14 patients have been enrolled; bitopertin has been well-tolerated with safety consistent with prior studies; efficacy evaluation is ongoing*

# Multiple Additional Potential Applications of Bitopertin

Inhibiting heme synthesis with bitopertin has potential to address a wide range of hematologic diseases





# Hepcidin Modulation

Iron Homeostasis



# Iron is Fundamental to RBC Biology

Hepcidin is a regulatory hormone that plays a central role in iron metabolism and homeostasis

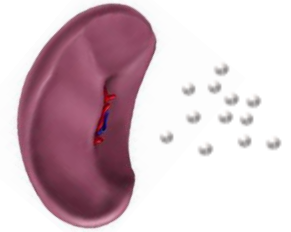
Induced by Inflammation

## Hepcidin

Gatekeeper Function: Blocks iron absorption and recycling



**GI Tract**  
Iron Intake



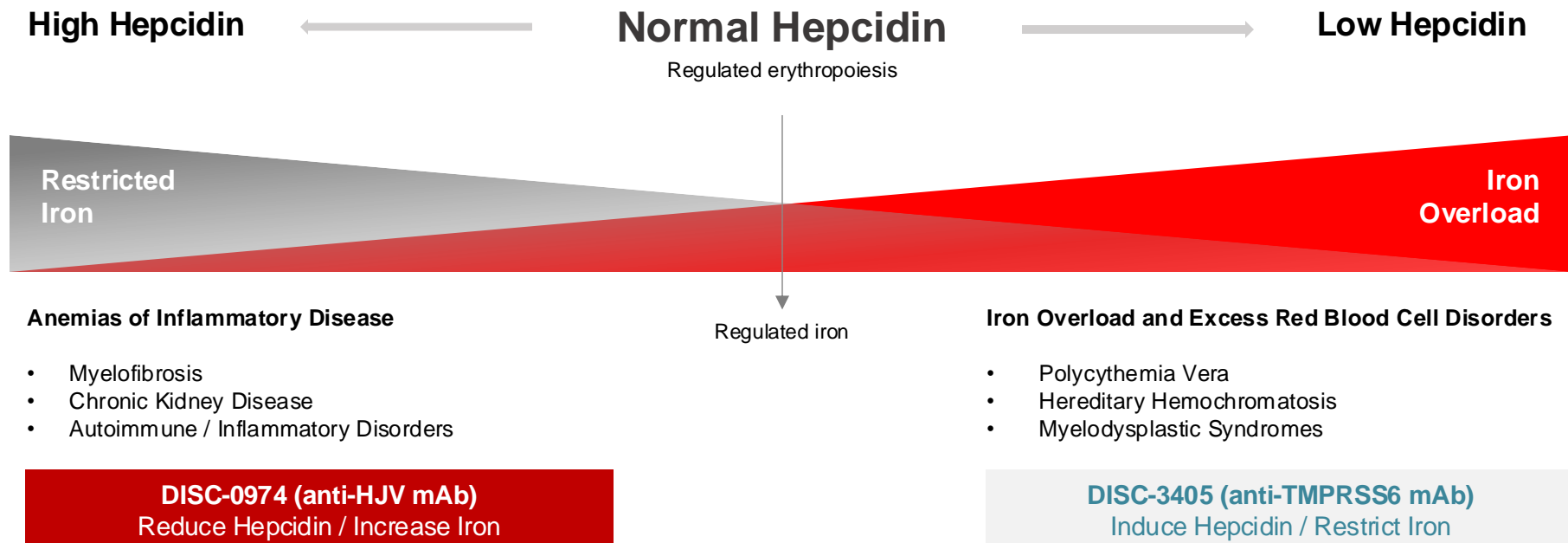
**Spleen**  
Iron Storage



**RBC Production in  
Bone Marrow**

# Hepcidin is a Therapeutic Target for Diseases

Dysregulated hepcidin drives a wide range of hematologic diseases

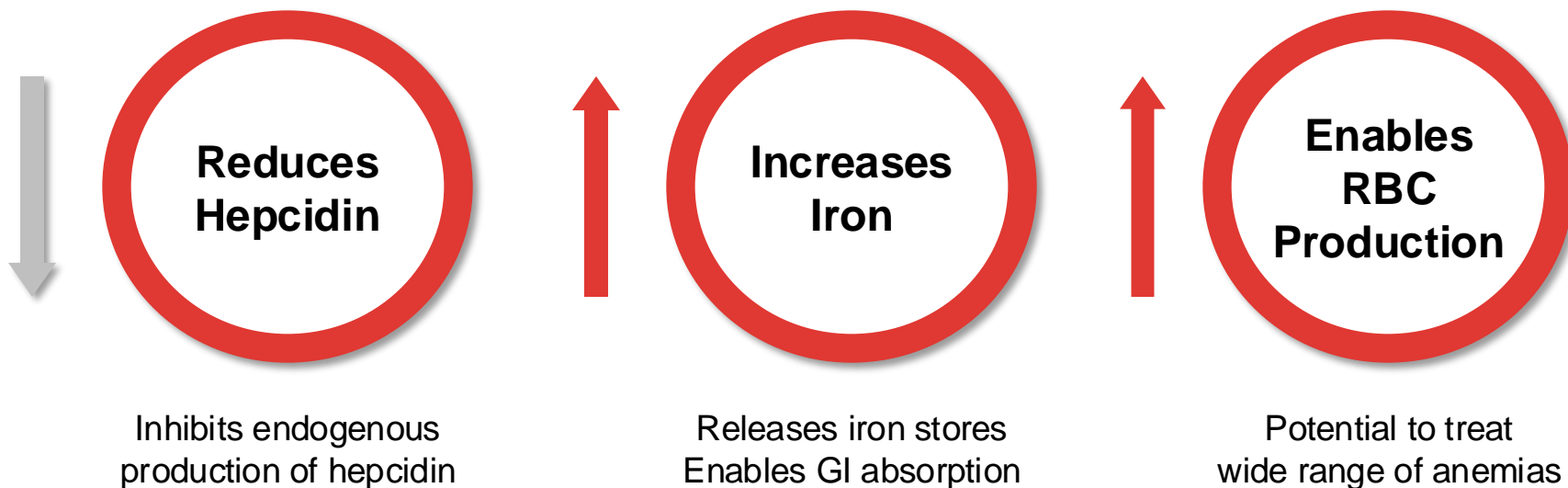




**DISC-0974**  
Anti-HJV mAb  
Hepcidin Suppression

# DISC-0974: Novel Anti-HJV mAb to Suppress Hepcidin

Designed to enhance iron availability to address a wide range of hematologic disorders



# Significant Opportunity in Anemia of Inflammation

Numerous chronic diseases associated with anemia from high hepcidin

Anemia Types	US Prev.	Est. % Anemic
<b>Myelofibrosis (MF)</b>	16-18.5K	87%
<b>Chronic Kidney Disease (CKD)</b>	37 MM	17-50%
Inflammatory Bowel Disease	1.6 MM	25-35%
Anemia of Cancer	17 MM	35-80%
Systemic Lupus Erythematosus	210K	50%

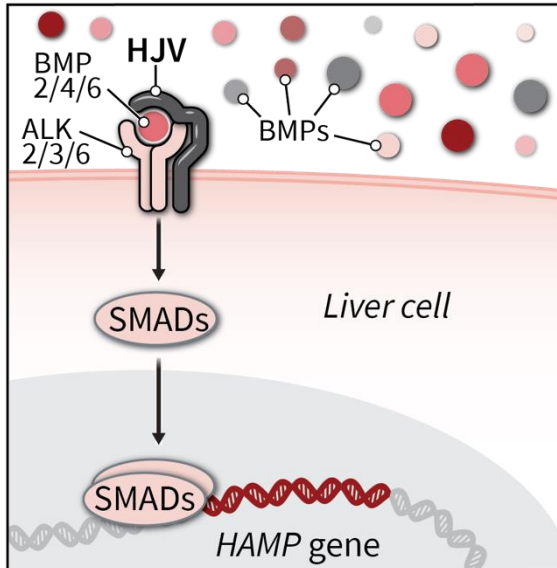
- **Anemia of inflammation** is the 2<sup>nd</sup> most common form of anemia
- **Estimated 40% of all anemias** are driven by or have an inflammatory component
- **Hepcidin is up-regulated** and correlates with anemia, driven by inflammation

**Bold** = ongoing Disc trial

Sources: Weiss (2019); Maccio (2014); Tefferi (2012); Lupus Foundation; Stauffer (2014); Filmann (2014); Koutroubakis (2015); Crohn's and Colitis Foundation

# Targeting Hemojuvelin (HJV) to Suppress Hepcidin

Critical and specific target for hepcidin expression



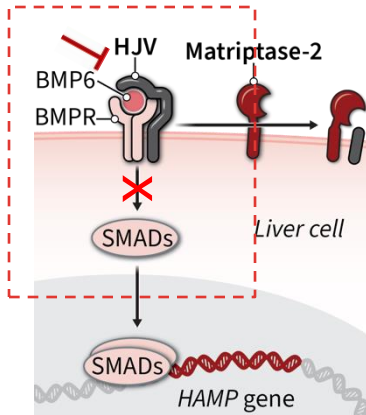
Inhibiting Hemojuvelin (HJV) Prevents Hepcidin Expression and Increases Iron

- **Genetic validation** in patients with Juvenile Hemochromatosis (lower hepcidin and elevated iron levels)
  - Loss-of-function mutations in HJV are phenotypically indistinguishable from mutations in *HAMP* (hepcidin) gene
- **Functionally specific** to hepcidin / iron
- **Tissue specific** expression primarily in the liver

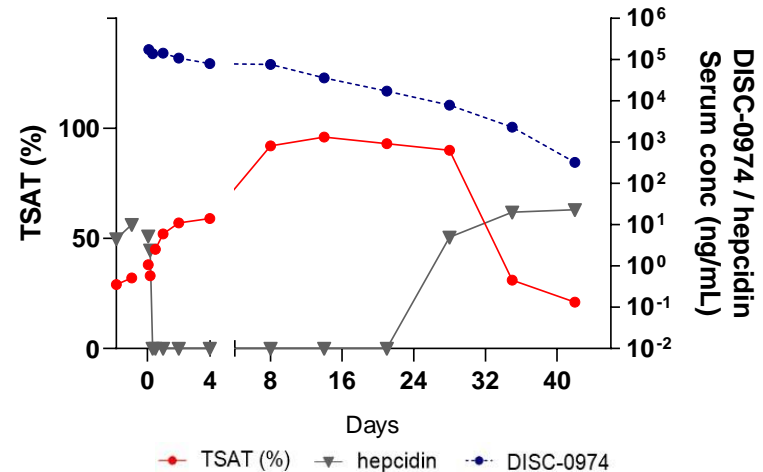
# DISC-0974 Mechanism of Action

Designed to reduce hepcidin and increase serum iron levels

DISC-0974 mAb binds to and prevents signaling through hemojuvelin (HJV) co-receptor



Potent and rapid effects on hepcidin and iron with single 5 mg / kg dose (NHP)

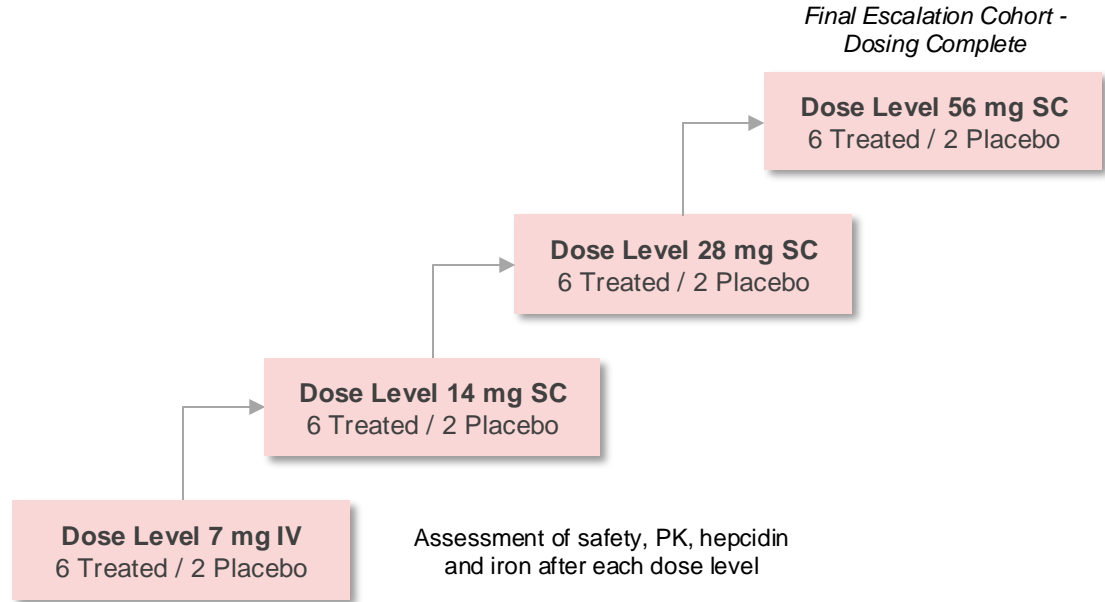


# Phase 1 SAD Trial in Healthy Volunteers

Established proof-of-mechanism based on hepcidin and iron parameters

## Trial Design

- Single-ascending dose in  $\geq 32$  healthy volunteers
- Key outcome measures:
  - Safety and PK
  - Hepcidin level, serum iron level, % TSAT
- Dose escalation until TSAT > 40% for at least 2 weeks
- Dose levels: 7 mg dose (IV); 14, 28 and 56 mg doses (SC)



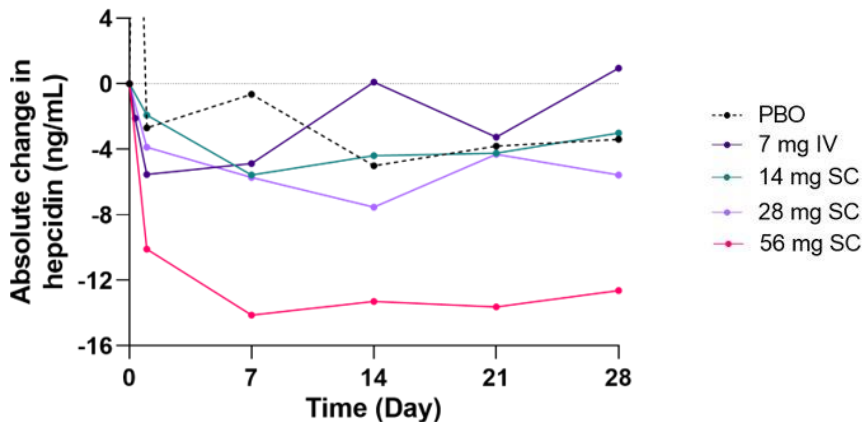


# DISC-0974 Phase 1 SAD Data

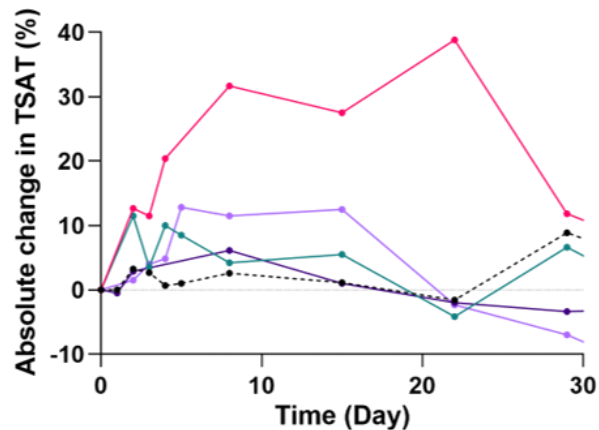
Dosing of DISC-0974 demonstrated a reduction of hepcidin and iron mobilization



DISC-0974 Reduced Hepcidin Production

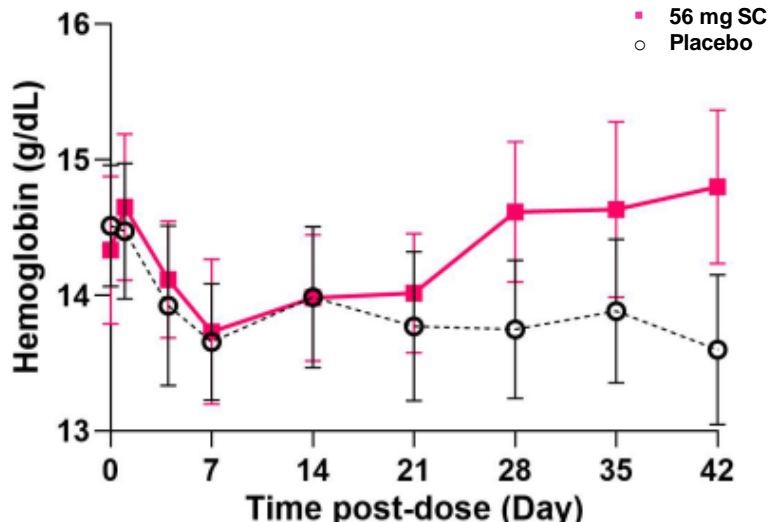
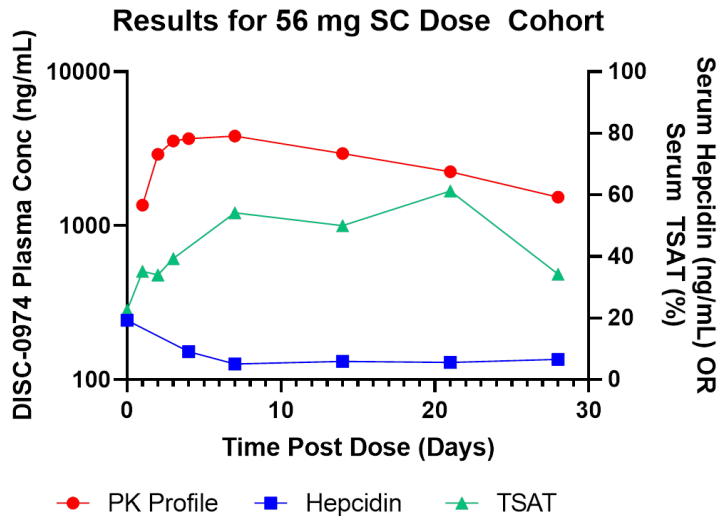


DISC-0974 Increased TSAT



# DISC-0974 Phase 1 SAD Data (cont.)

Top dose (56 mg) pharmacodynamic activity improved key clinical parameters (> 1g/dL Hgb)



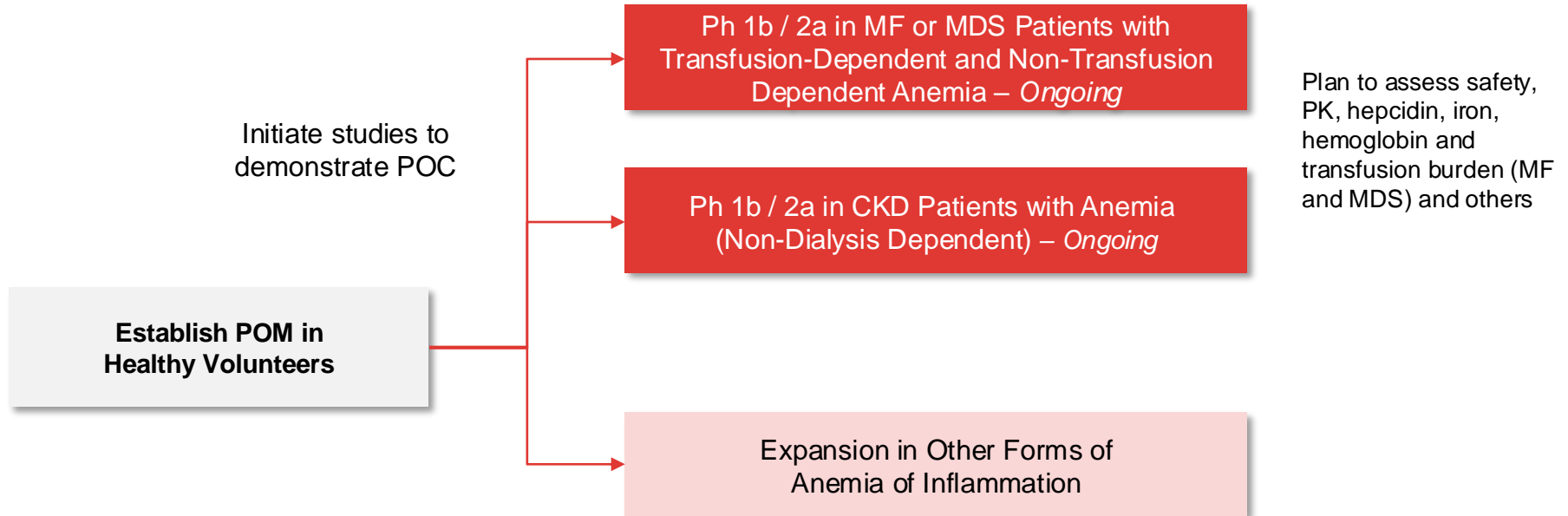
# DISC-0974 Phase 1 SAD Safety

Safety profile was consistent with selective target biology and preclinical studies; no serious or AEs > Grade 1

	Total n=42	Pooled Placebo n=10	7 mg IV n=8	14 mg SC n=6	28 mg SC n=6	28 mg IV n=6	56 mg SC n=6
Diarrhea	1 (2.4)	1 (10.0)	0	0	0	0	0
Dizziness	2 (4.8)	0	0	0	0	1 (16.7)	1 (16.7)
Dyspepsia	1 (2.4)	0	0	0	0	0	1 (16.7)
Eye pruritis	1 (2.4)	0	0	0	1 (16.7)	0	0
Peripheral swelling	1 (2.4)	0	0	0	0	1 (16.7)	0
Headache	1 (2.4)	0	0	0	1 (16.7)	0	0
Myalgia	1 (2.4)	0	0	0	0	0	1 (16.7)
Nasal congestion	1 (2.4)	0	0	0	0	0	1 (16.7)
Pain in extremity	1 (2.4)	1 (10.0)	0	0	0	0	0
Seasonal allergy	1 (2.4)	0	0	0	1 (16.7)	0	0
Vessel puncture site bruise	1 (2.4)	1 (10.0)	0	0	0	0	0
Vomiting	1 (2.4)	1 (10.0)	0	0	0	0	0

# DISC-0974 Development Strategy

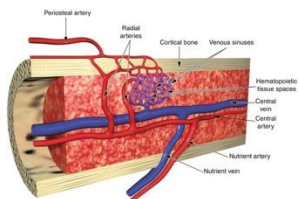
Aim to demonstrate POC in anemia of MF and CKD



# Hepcidin is a Key Driver of Myelofibrosis (MF) Anemia

Anemia is severe and prevalent in MF and can limit treatment

## Anemia of MF



### > Est. # Patients

- 25,000 patients (US)
- ~87% are anemic; severe and require transfusion

### > Etiology of Anemia

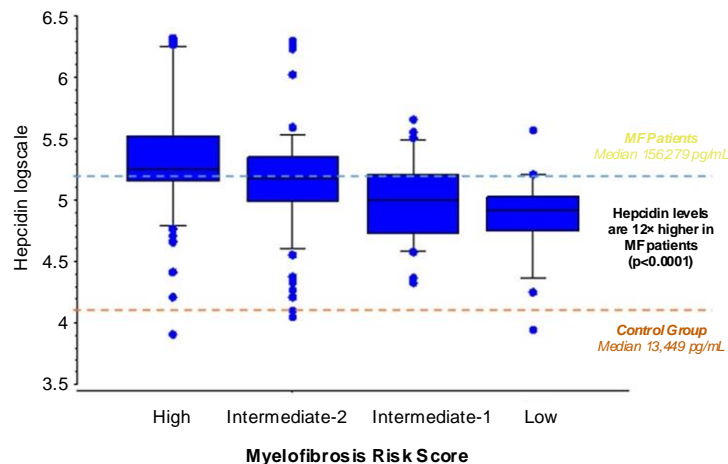
- High hepcidin from inflammation
- JAK inhibitors worsen anemia; loss of marrow function

### > Unmet Medical Needs

- Severe and difficult to treat; high transfusion burden
- No approved or effective anemia therapy
- Anemia limits optimal JAK inhibitor treatment

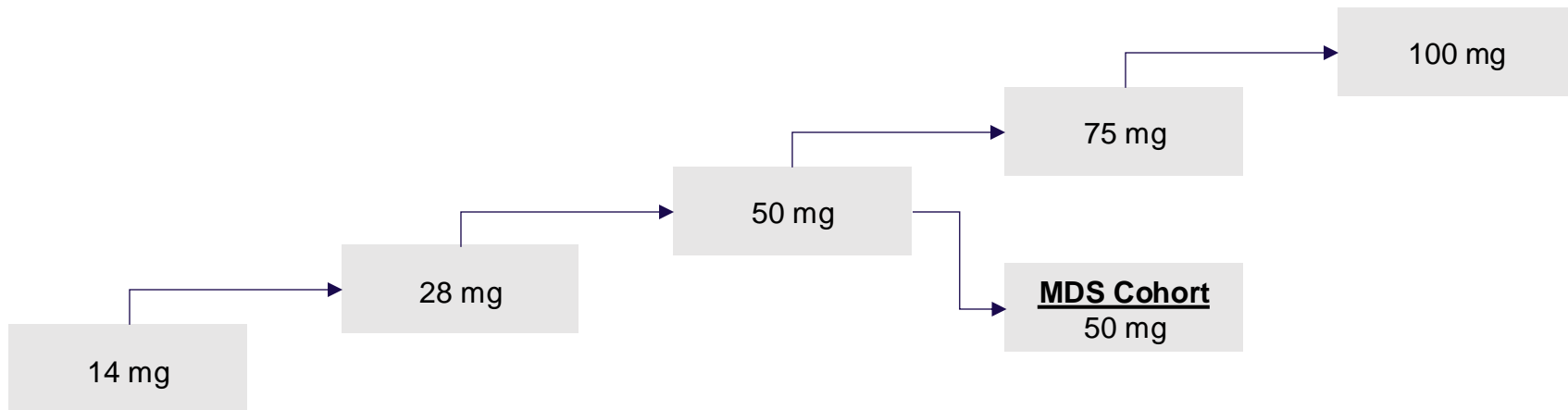
## Hepcidin Levels are Elevated in MF

~ 12x higher than control and associated with severity of anemia and transfusion burden



# DISC-0974 Phase 1b Anemia of MF Study Overview

Subcutaneous dosing once monthly for 6 months

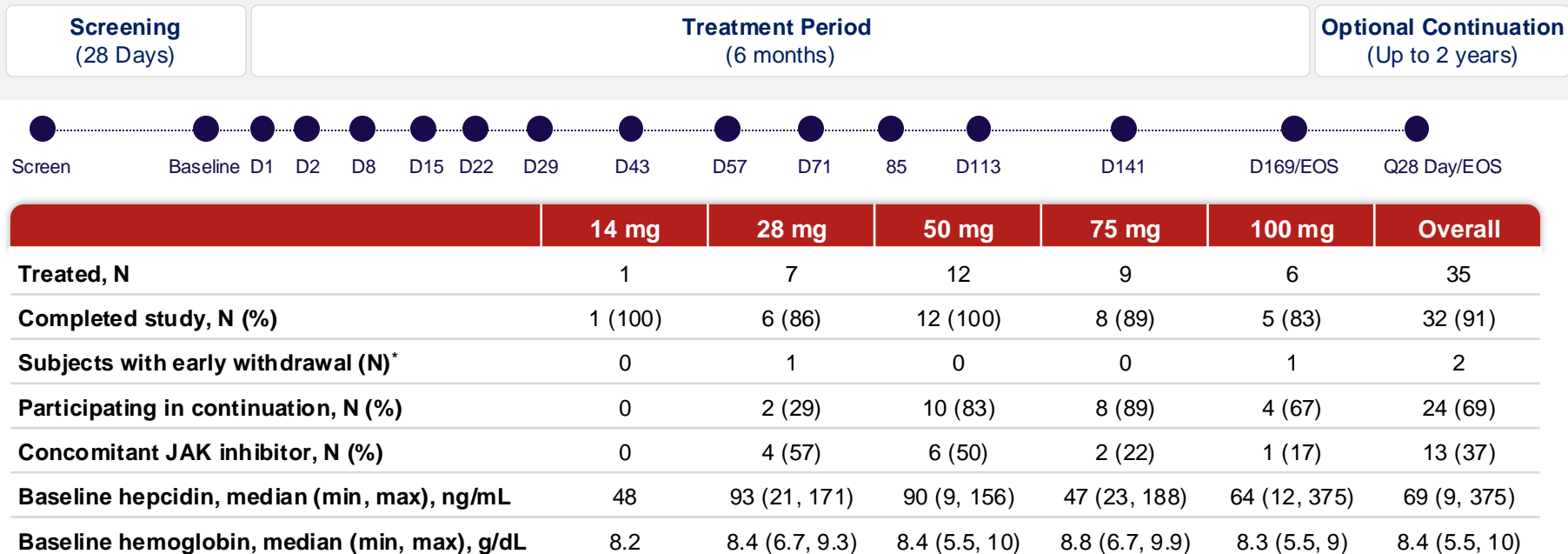


**Key Endpoints/Measures:** Iron, hepcidin, and other hematologic parameters, safety/tolerability

**Data Availability:** Final data presented at ASH 2024; Phase 2 study initiated

# DISC-0974 Anemia of MF Phase 1b

Study overview – enrollment data as of October 17, 2024



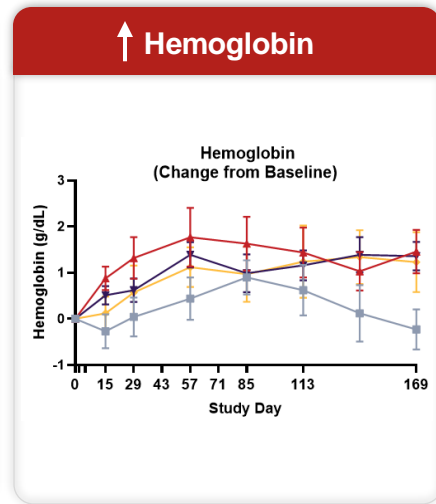
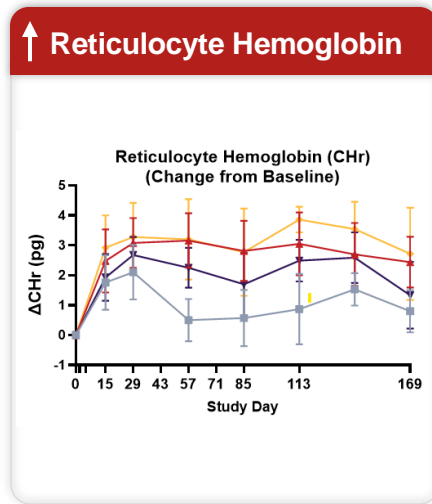
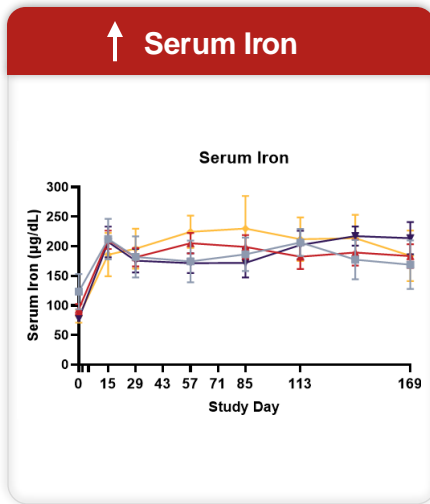
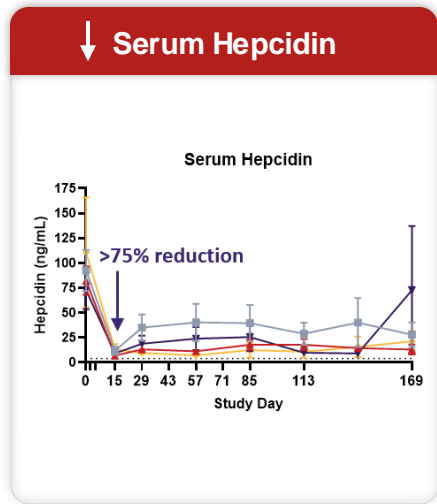
## Study Endpoints

**Primary:** Safety and tolerability; **Secondary:** Hematologic response, pharmacodynamic markers of mechanism engagement

# DISC-0974 Anemia of MF Phase 1b Results

## Pharmacodynamics

- DISC-0974 demonstrated consistent decreases in hepcidin and increases in serum iron across patients
- Iron mobilization translated to increased reticulocyte hemoglobin and hemoglobin from baseline

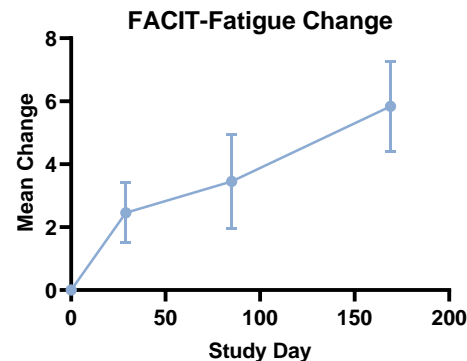
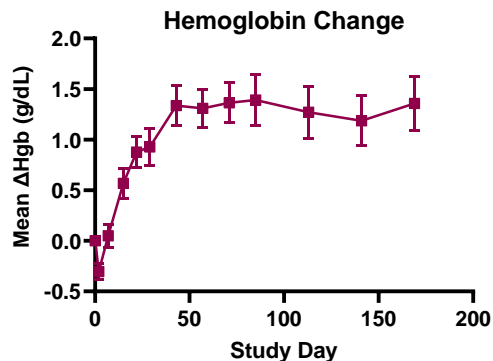
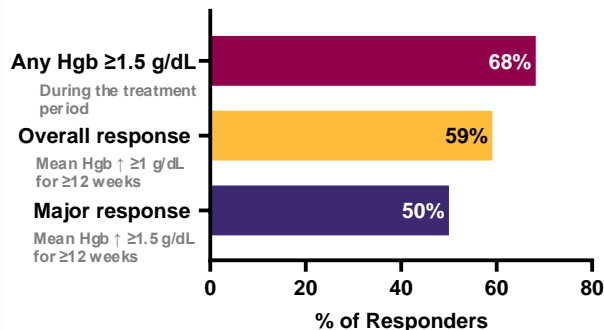




# DISC-0974 Anemia of MF Phase 1b Results

## Hematologic response: nTD participants\* (n=22)

68% of nTD<sup>1</sup> participants achieved a Hgb Increase of  $\geq 1.5$  g/dL during study period;  
50% achieved a sustained Hgb response for  $\geq 12$  weeks



67% of participants (n=9) receiving concomitant JAKi therapy achieved durable response

Response

Mean  $\pm$  SD (days)

Time to first Hgb increase for major response

36  $\pm$  18

Duration of response during treatment period

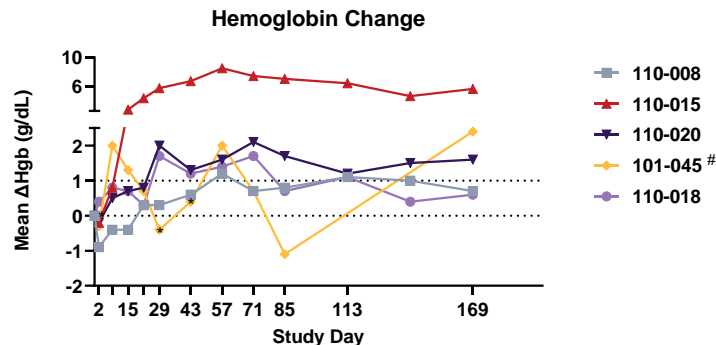
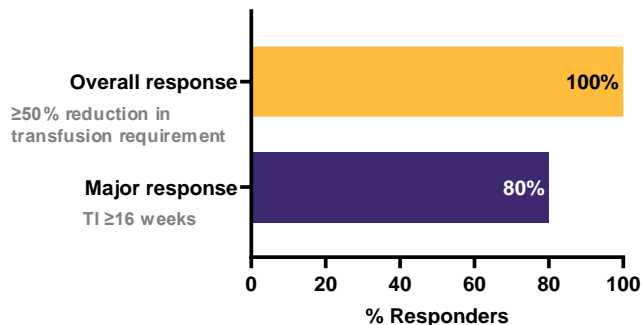
150  $\pm$  27

17 of 22 nTD participants have received continuation treatment with median response not reached. Follow-up ongoing (maximum 14.7 months).

# DISC-0974 Anemia of MF Phase 1b Results

## Hematologic response: TD Low participants (n=5)

100% of TD Low<sup>1</sup> participants achieved a  $\geq 50\%$  reduction in transfusion requirement;  
80% of participants achieved TI-16 weeks<sup>^</sup>



No TD Low participants were receiving concomitant JAKi therapy

\*Indicates transfusion; #Indicates patient receiving transfusion during treatment period.

### Response

TD Low duration of major response during treatment period

### Mean $\pm$ SD (days)

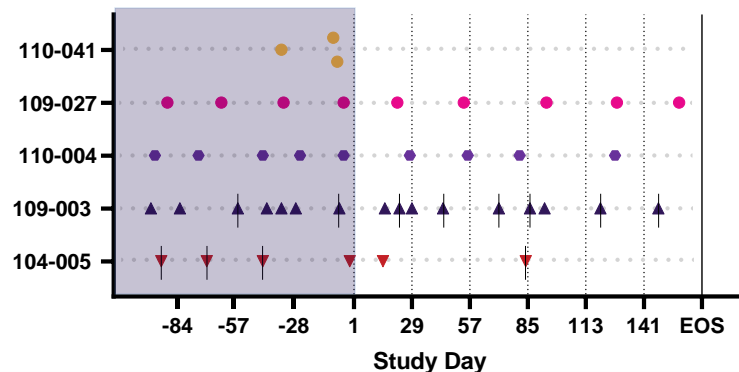
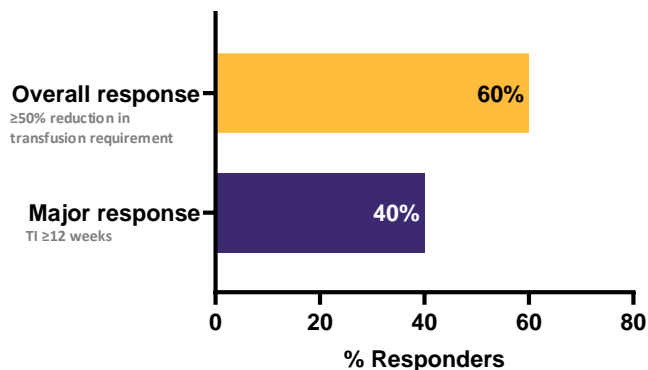
171  $\pm$  4

5 of 5 TD Low participants have received continuation treatment with median response not reached. Follow-up ongoing (maximum 16.6 months).

# DISC-0974 Anemia of MF Phase 1b Results

## Hematologic response: TD High participants (n=5)

60% of TD High<sup>1</sup> participants achieved a  $\geq 50\%$  reduction in transfusion requirement;  
40% of participants achieved TI-12 weeks<sup>^</sup>



50% of participants (n=4) receiving concomitant JAKi therapy achieved  $\geq 50\%$  transfusion reduction; 25% achieved TI-12

Response

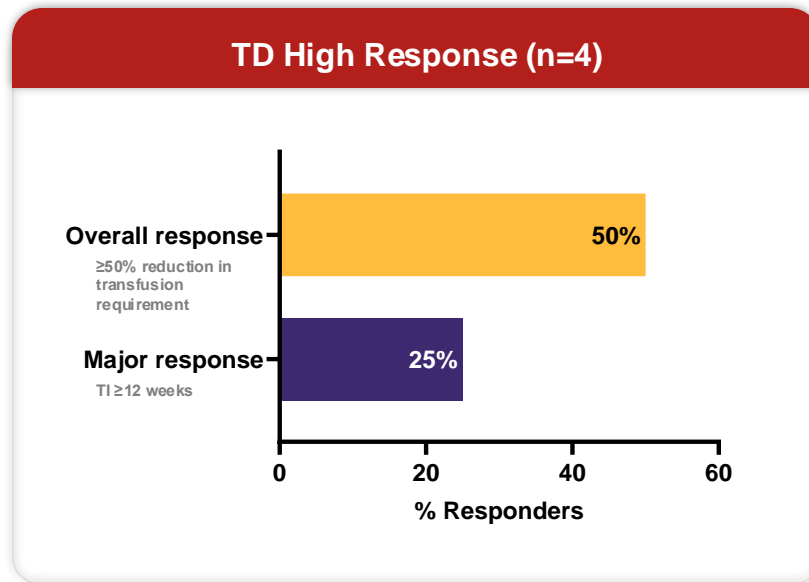
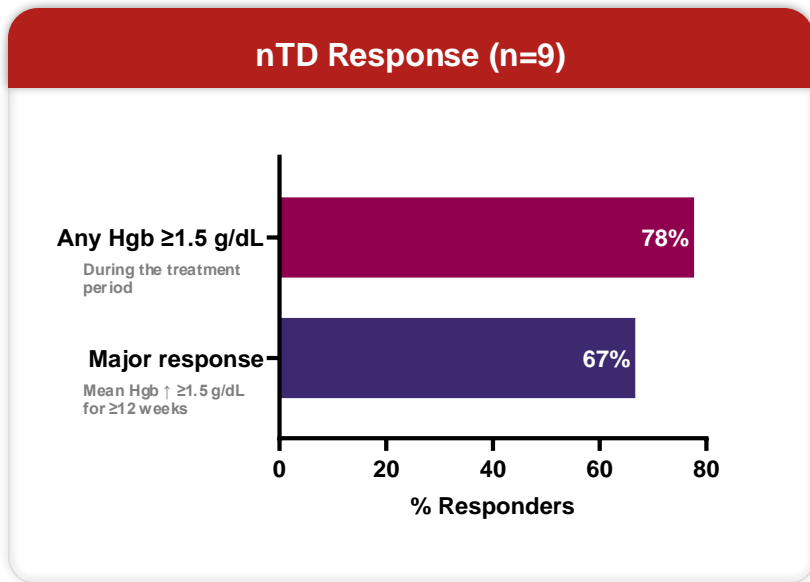
Mean  $\pm$  SD (days)

TD High duration of major response during treatment period

127  $\pm$  60

# DISC-0974 Anemia of MF Phase 1b Results

Hematologic response with concomitant JAKi therapy (n=13)



Overall, 54% of participants receiving concomitant JAKi therapy achieved a major hematologic response

# DISC-0974 Anemia of MF Phase 1b Results

## Safety

Preferred Term	28 mg (n=7)	50 mg (n=12)	75 mg (n=9)	100 mg (n=6)	Overall (n=35)
<b>Any TEAE</b>	6 (85.7)	12 (100)	8 (88.9)	6 (100)	32 (94.1)
<b>Related AE</b>	4 (57.1)	6 (50)	5 (55.6)	1 (16.7)	16 (47.1)
<b>SAE</b>	1 (14.3)	2 (16.7)	0	1 (16.7)	4 (11.8)
<b>Common TEAEs in ≥5 participants</b>					
Diarrhea	3 (42.9)	5 (41.7)	5 (55.6)	1 (16.7)	14 (41.2)
Nausea	2 (28.6)	2 (16.7)	2 (22.2)	2 (33.3)	8 (23.5)
Vomiting	1 (14.3)	2 (16.7)	0	3 (50.0)	6 (17.6)
Constipation	0	4 (33.3)	1 (11.1)	0	5 (14.7)
Fatigue	3 (42.9)	3 (25.0)	1 (11.1)	3 (50.0)	10 (29.4)
Lymphocyte count decreased	1 (14.3)	2 (16.7)	2 (22.2)	1 (16.7)	6 (17.6)
Dizziness	0	2 (16.7)	2 (22.2)	3 (50.0)	7 (20.6)
Headache	1 (14.3)	1 (8.3)	1 (11.1)	2 (33.3)	5 (14.7)
Dyspnea	0	1 (8.3)	2 (22.2)	2 (33.3)	5 (14.7)
Hyperhidrosis	1 (14.3)	1 (8.3)	1 (11.1)	2 (33.3)	5 (14.7)
Anemia	5 (71.4)	4 (33.3)	0	0	9 (26.5)
Hypertension	0	3 (25.0)	3 (33.3)	0	6 (17.6)

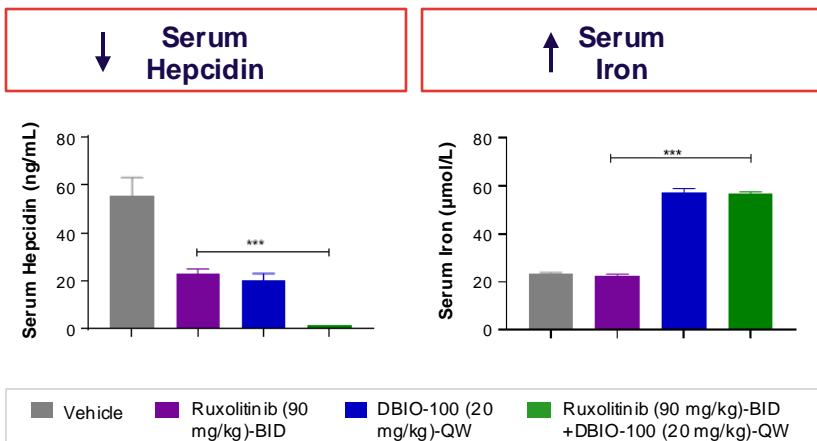
No TEAEs were reported at the 14 mg dose level. Related AEs occurring in ≥2 participants: diarrhea (n=6); SAEs: arthralgia, cellulitis related to cat scratch, cellulitis related to cat bite, and kidney infection; ≥Grade 3 AEs: anemia, lymphocyte count decreased, platelets decreased, cellulitis, kidney infection (same as SAE), muscular weakness, and headache.

# DISC-0974 Alleviated Ruxolitinib-Induced Anemia in Mice

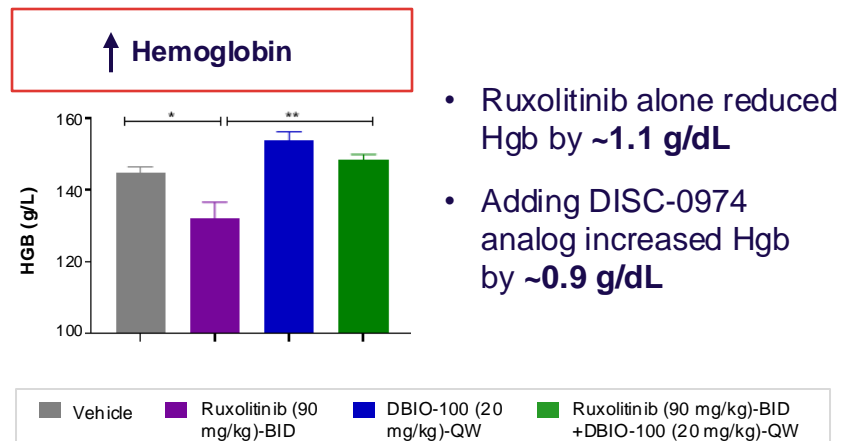
## Wild-type mouse model

- ⊗ Treating wild-type mice with ruxolitinib reduced hemoglobin and induced anemia
- ⊗ Adding a mouse analog of DISC-0974 reversed these effects, further decreasing hepcidin, increasing serum iron, and increasing hemoglobin

### Target Engagement



### Hematologic Improvement

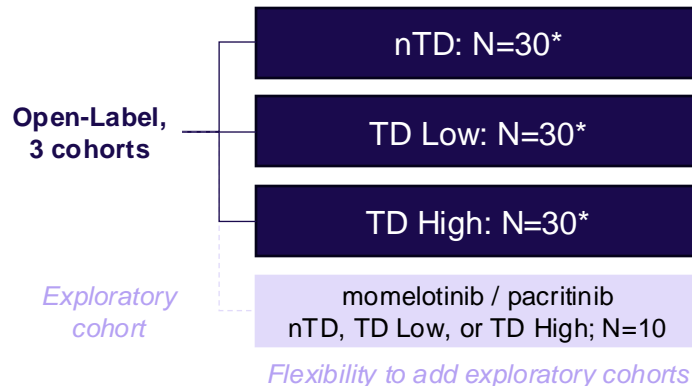


# Phase 2 MF Anemia Study Overview

## Study Population

- N= ~90 (30 per cohort)
  - 12 patients carried over from Phase 1b\*
- Adult patients with MF and anemia
  - Hgb <10 g/dL on  $\geq 3$  assessments over 12 weeks, or
  - 1 or more PRBC units transfused in 12 weeks
- Severity: DIPSS INT-1/High
- +/- JAK inhibitor permitted

## Design



### Key endpoints:

- Anemia response defined by cohort (TI, transfusion burden reduction, Hgb change)
- Iron, hepcidin, hematologic parameters
- FACIT fatigue score

**Phase 2 Dosing:** 50 mg, SC, q28 days

# Summary of DISC-0974 in MF Anemia

**DISC-0974 demonstrated improved hemoglobin response and transfusion burden in MF**



## ➤ Next Steps

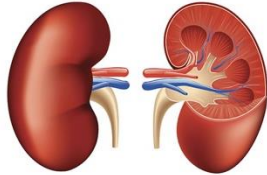
- Phase 2 study initiated
- Initial data readout expected H2 2025



# Hepcidin is a Key Driver of CKD Anemia

Pervasive issue that is currently highly under-treated

## Anemia of CKD



### > Est. # Patients

- 5 to 6 million anemic NDD-CKD patients in the US alone

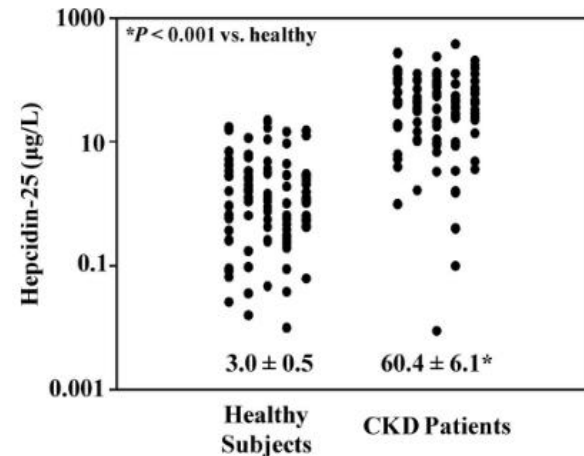
### > Etiology of Anemia

- High hepcidin from inflammation & poor renal clearance
- Compromised erythropoietin production

### > Unmet Medical Needs

- Majority patients untreated or under-treated
- ESAs restricted due to safety and black box
- Mean Hb 9.3 g/dL in patients initiating dialysis

**Hepcidin Levels Elevated in CKD Patients**  
~20x higher than healthy subjects and increases with disease severity

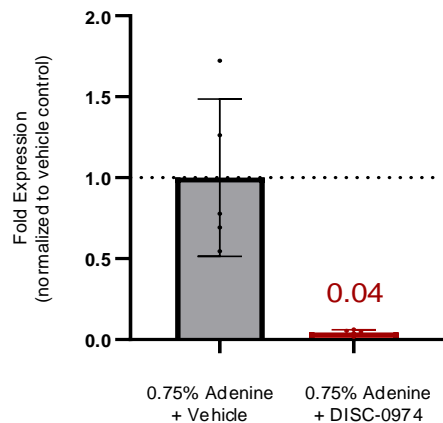


# DISC-0974 Improved Anemia in Model of CKD

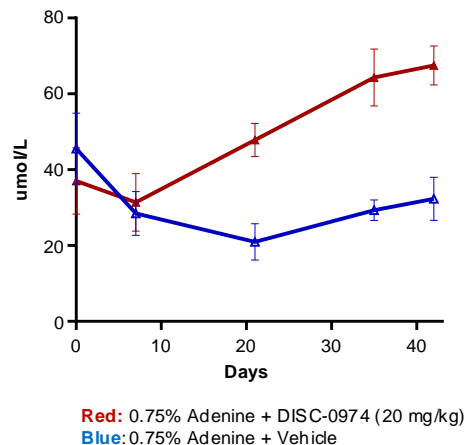
## Rat Model of Adenine Diet-Induced CKD



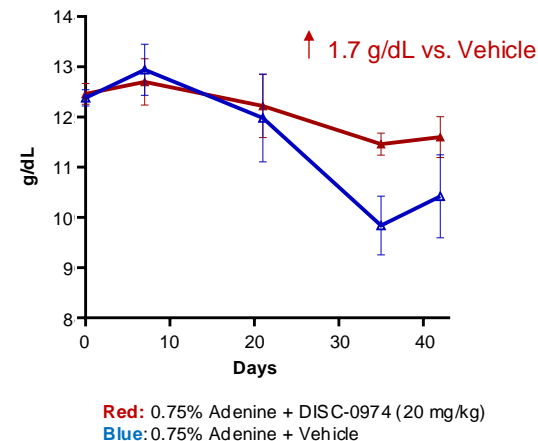
DISC-0974 Reduced  
Hepcidin Expression



DISC-0974 Increased  
Serum Iron



DISC-0974 Increased  
Hemoglobin Levels



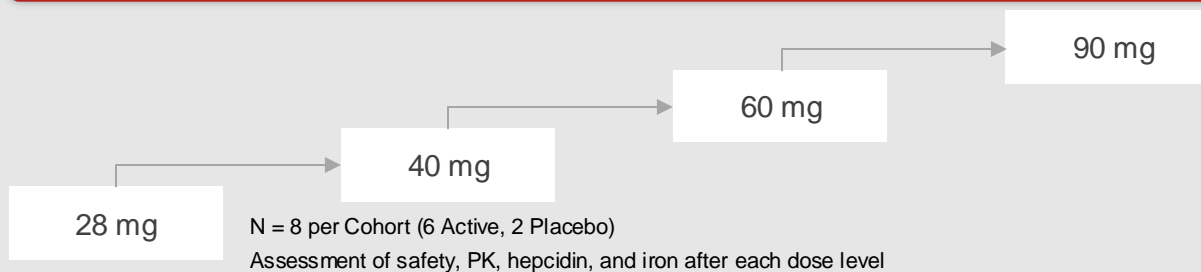
# DISC-0974 NDD-CKD Anemia Trial Overview

Data as of September 16, 2024

## Trial Population

- Stage II-V CKD; Adult
- Not receiving dialysis
- Hgb (g/dL) <10.5 (F), 11 (M)
- Exclude iron-deficient anemia by ferritin and TSAT

## Phase 1b | Single-Ascending Dose



**Key Endpoints/Measures:** Change in hemoglobin; iron, hepcidin, and other hematologic parameters, safety / tolerability

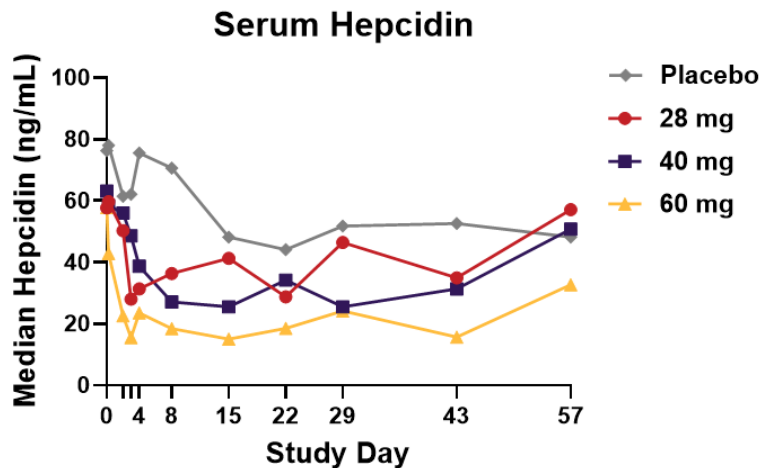
**Data availability:** Updated Phase 1b data presented in October 2024; Phase 1b multiple-dose data expected by end of 2025

	28 mg DISC-0974 (n=9)	40 mg DISC-0974 (n=6)	60 mg DISC-0974 (n=6)	Pooled Placebo (n=7)
<b>CKD Stage, n (%)</b>				
Stage 2	0	1 (16.7)	1 (16.7)	0
Stage 3	2 (22.2)	0	2 (33.3)	2 (28.6)
Stage 4	5 (55.6)	5 (83.3)	3 (50.0)	5 (71.4)
Stage 5	2 (22.2)	0	0	0
<b>Baseline hepcidin, median (range), ng/mL</b>	57.7 (24.0, 170.6)	63.2 (50.0, 109.6)	57.8 (29.2, 156.9)	76.3 (36.8, 122.3)
<b>Baseline hemoglobin, median (range), g/dL</b>	9.8 (8.6, 10.6)	10.6 (10.0, 11.2)	10.8 (10.1, 11.0)	9.6 (9.0, 10.9)

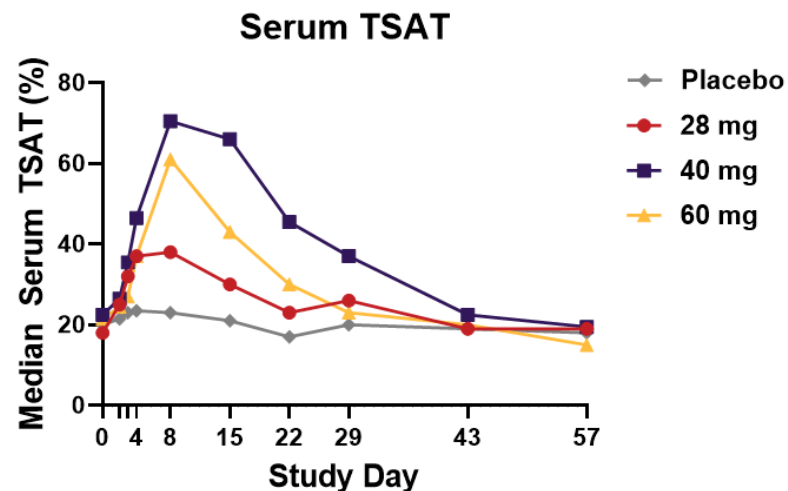
# ASN 2024 DISC-0974 Anemia of CKD Data: Hepcidin and Iron

⦿ Meaningful reduction in serum hepcidin with corresponding increase in serum TSAT

### Hepcidin Changes Over Time



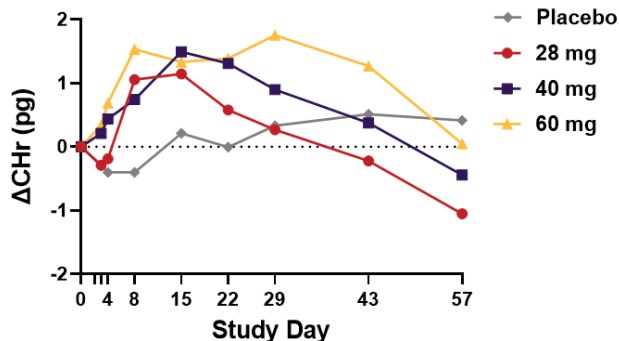
### Iron Changes Over Time



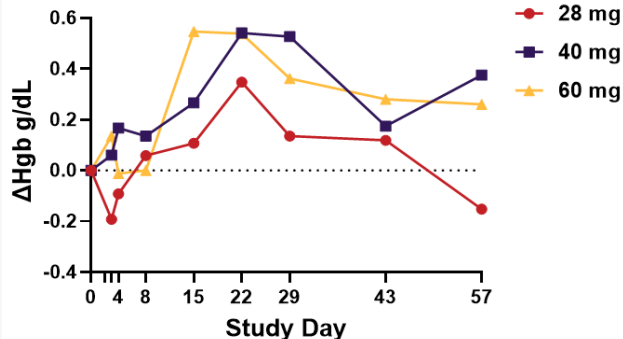
# ASN 2024 DISC-0974 Anemia of CKD Data: Hematologic Parameters

- ⊗ Early and sustained increase in mean reticulocyte hemoglobin across all dose groups
- ⊗ Increase in mean hemoglobin from baseline across dose groups, with maximal observed individual increases in hemoglobin up to +0.95 g/dL at 28 mg, +1.5 g/dL at 40 mg, and +1.8 g/dL at 60 mg

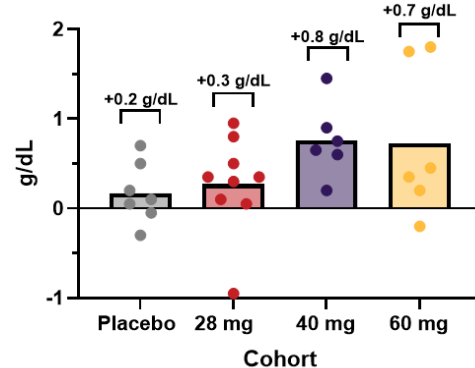
### Reticulocyte Hemoglobin Content (CHr)



### PBO-Corrected Hgb Change from Baseline



### Maximal Change in Hemoglobin



# ASN 2024 DISC-0974 Anemia of CKD Data: Safety

➤ Generally well tolerated at all evaluated dose levels

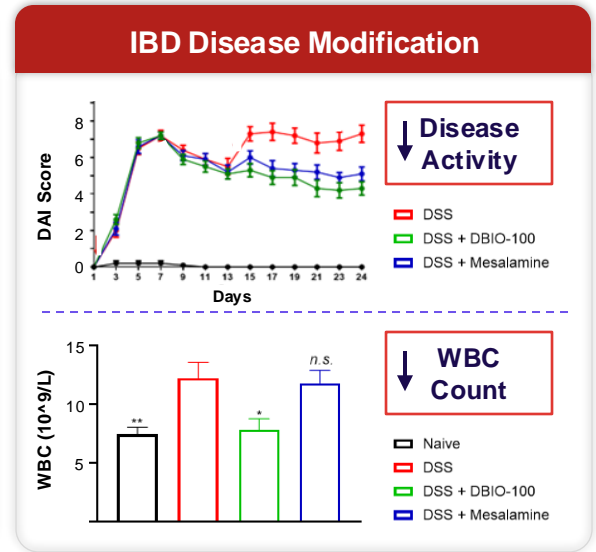
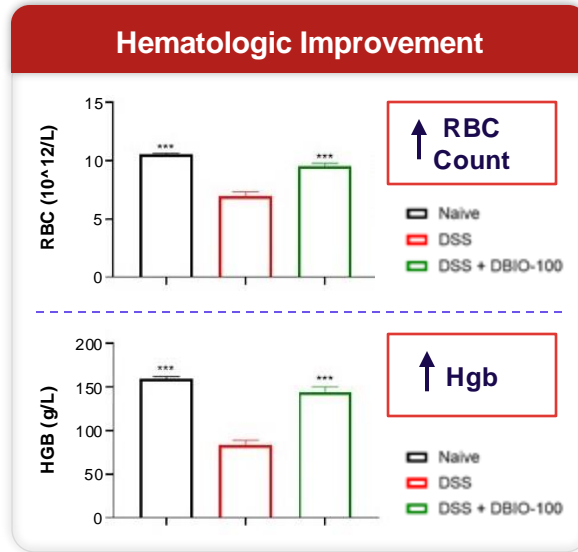
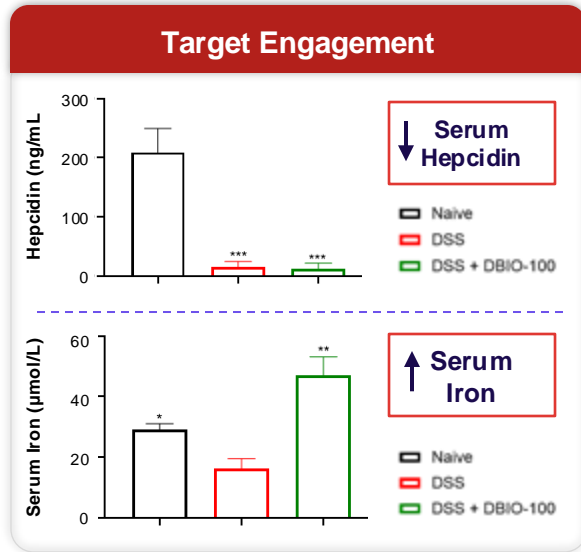
Adverse occurring in $\geq 2$ participants at any dose level	28 mg DISC-0974 (n=9)	40 mg DISC-0974 (n=6)	60 mg DISC-0974 (n=6)	Pooled Placebo (n=7)
<b>Metabolic Acidosis</b>	1 (11.1)	1 (16.7)	1 (16.7)	1 (14.3)
<b>Hyperkalemia</b>	0	1 (16.7)	2 (33.3)	0
<b>Anemia</b>	2 (22.2)	0	0	2 (28.6)
<b>Atrial fibrillation</b>	1 (11.1)	0	1 (16.7)	0
<b>Hypertension</b>	0	0	0	2 (28.6)

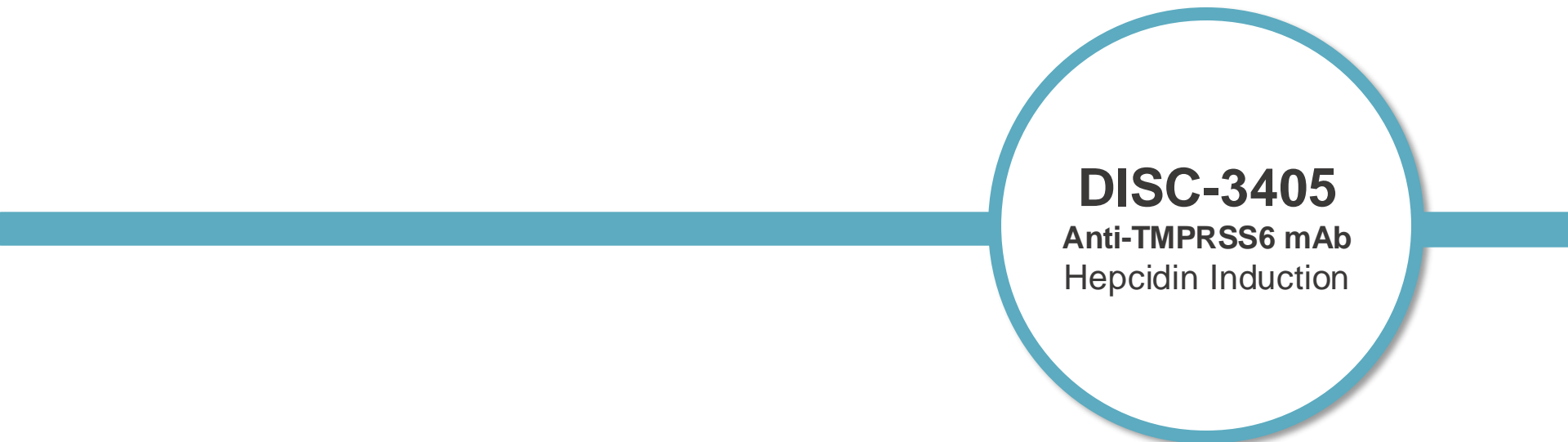

Related AEs: 1 participant with Grade 1 hyperkalemia treated at 60 mg; 1 participant with Grade 1 dizziness treated at 60 mg; 1 participant with Grade 2 Eosinophilia and Grade 2 Renal failure (Creatinine 1.2X baseline at day 29 with resolution by day 57).  $\geq$  Grade 3 AEs: 1 participant treated at 28 mg with Grade 4 ESRD (dialysis eligible prior to enrollment), Grade 4 anemia and Grade 3 fluid retention; 1 participant treated at 40 mg with Grade 3 hypervolemia. Serious adverse events: 3 participants including 1 participant treated at 28 mg with Grade 4 ESRD (same as “ $\geq$  Grade 3 AE” participant with ESRD); 1 participant treated at 28 mg with Grade 2 atrial fibrillation (medical history of atrial fibrillation); 1 participant treated at 60 mg with Grade 1 atrial fibrillation (medical history of atrial fibrillation).

# DISC-0974 in Other Anemias of Inflammation

## Inflammatory bowel disease mouse model

- Mouse analog of DISC-0974 suppressed hepcidin, increased serum iron, and increased hemoglobin in anemic IBD mice
- Treatment also demonstrated disease-modifying and anti-inflammatory effects





**DISC-3405**  
Anti-TMPRSS6 mAb  
Hepcidin Induction



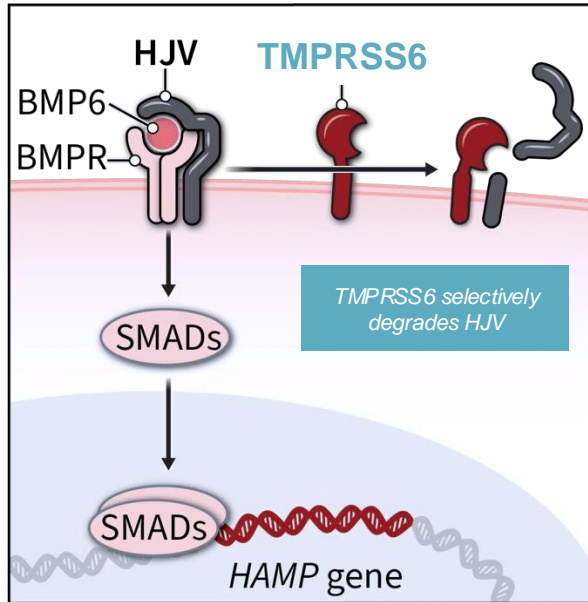
# Anti-TMPRSS6 mAb Induces Hepcidin

Designed to limit iron levels with potential to address a wide range of hematologic disorders



# Targeting TMPRSS6 to Increase Hepcidin

Potent, specific target controls endogenous hepcidin production



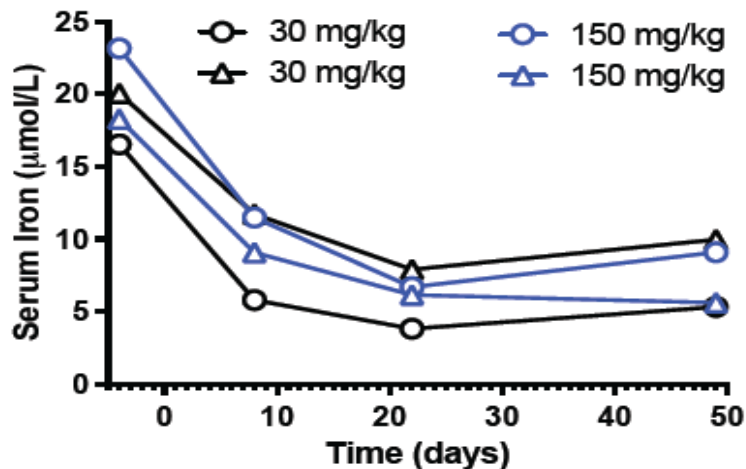
## Inhibiting TMPRSS6 with an Antibody Enables Hepcidin Production to Suppress Iron

- **Genetic validation** in patients with IRIDA (Iron-Refractory Iron Deficiency Anemia)
  - LOF TMPRSS6 mutation increases hepcidin and reduces iron availability
- **Functionally specific** to hepcidin / iron
- **Tissue specific** expression primarily in the liver

# DISC-3405 Effects in Non-Human Primates

Resulted in deep and sustained suppression of serum iron levels

Single dose of DISC-3405 resulted in ~ 70% suppression of serum iron lasting 3 weeks



- Potent PD effects observed across multiple preclinical studies consistent with Tmprss6 inhibition
  - Hpcidin: 3-4 fold induction
  - Serum iron: ~60-70% suppression
- DISC-3405 demonstrated excellent safety profile in non-clinical GLP safety studies

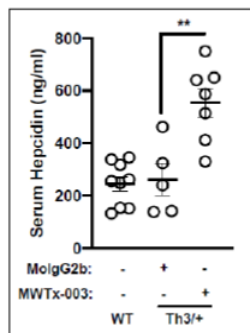
# DISC-3405 in Beta Thalassemia and Polycythemia Vera

## Significant effects on hallmarks of disease

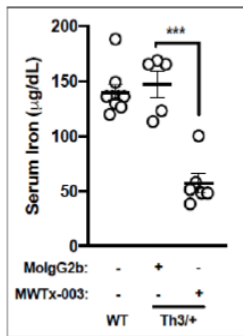
### Hbb<sup>Th3/+</sup> Model of Beta-Thalassemia

### Jak2<sup>V617F</sup> model of Polycythemia Vera

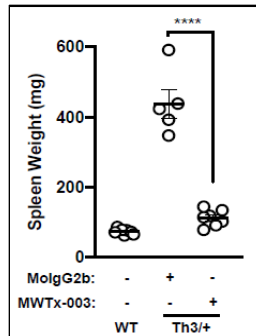
↑ Heparin Production



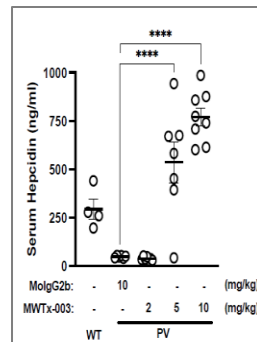
↓ Iron



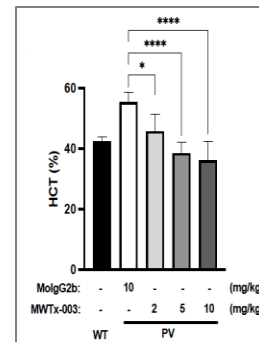
↓ Spleen Weight



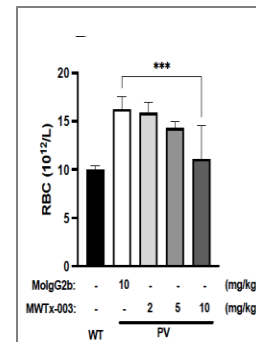
↑ Heparin Production



↓ Hematocrit



↓ RBC Production



# DISC-3405 Development Plans

Phase 1 in healthy volunteers ongoing; aim to advance program into POC studies with focus on polycythemia vera

**Phase 1 SAD/MAD in HV**  
Initiated October 2023

Demonstrate proof-of-mechanism  
(hepcidin, iron, hematologic parameters)

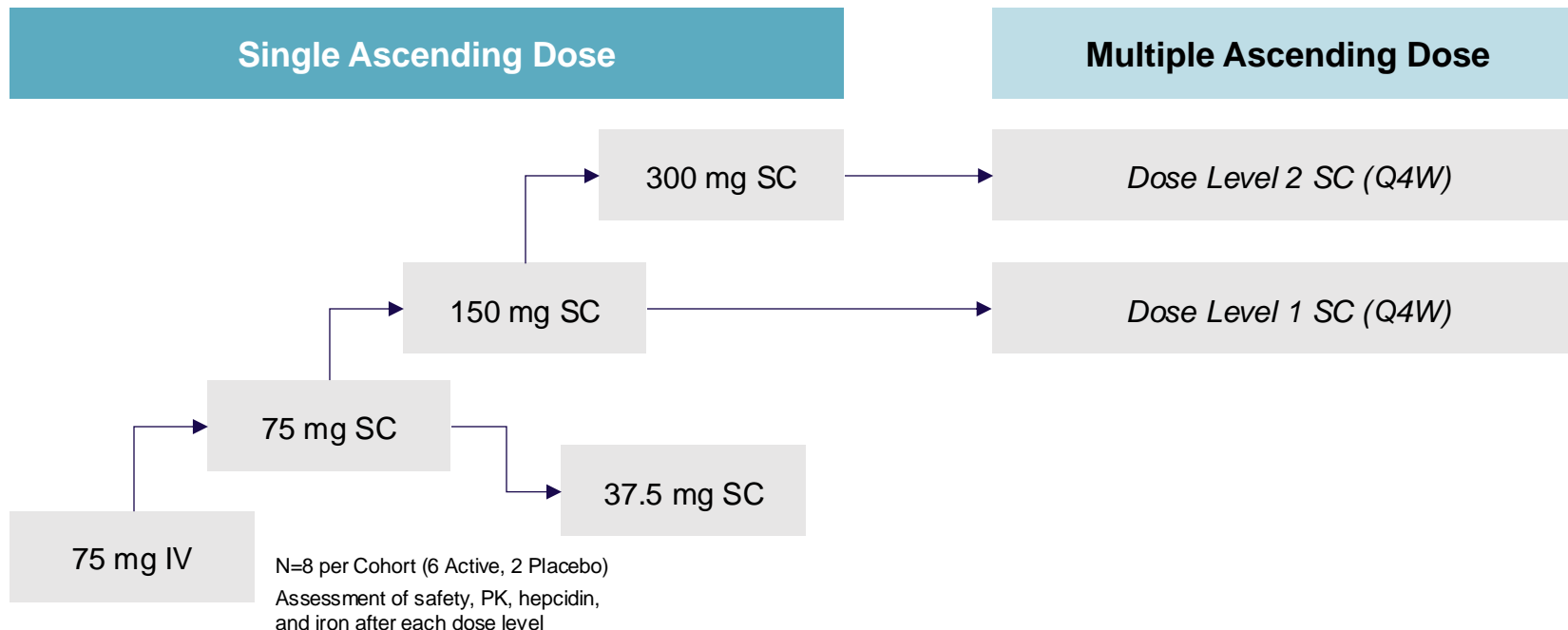
**Phase 2 Proof-of-Concept Study  
in Polycythemia Vera**

- Strong proof of therapeutic hypothesis; clarity on regulatory development path
- Assess safety, PK, hepcidin, iron, hematologic parameters; % Hct and requirement for phlebotomy

**Additional POC Studies in a Range of Indications**

- Hereditary Hemochromatosis
- Beta-Thalassemia
- Myelodysplastic Syndromes
- Sickle Cell Disease

# DISC-3405 Phase 1 Healthy Volunteers Study Overview



**Key Endpoints/Measures:** Iron, hepcidin, and other hematologic parameters, safety/tolerability

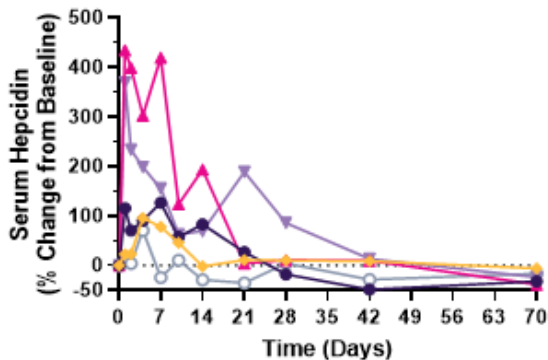
# DISC-3405 Phase 1 Healthy Volunteer Study: Baseline and Demographics

Characteristic	Placebo n=14	37.5 mg SC n=6	75 mg IV n=6	75 mg SC* n=12	150 mg SC* n=12	300 mg SC n=6
Age, years Median (range)	45 (39, 62)	53.5 (42, 64)	39.5 (23, 49)	52.5 (30, 61)	40 (25, 64)	36.5 (22, 38)
Gender, Female, n (%)	4 (28.6)	5 (83.3)	3 (50.0)	6 (50)	5 (41.7)	0 (0)
Hepcidin, ng/mL	15.0 (5.2, 50.1)	26.2 (6.1, 84.2)	19.4 (2.0, 36.6)	23.2 (4.4, 69.8)	12.8 (4.6, 27.6)	18.7 (8.6, 45.0)
Serum Iron, ug/dL	91.6 (41, 180)	88.7 (43, 127)	99.2 (74, 127)	92.9 (33, 154)	85.3 (43, 138)	106.2 (54, 135)
Hemoglobin, g/dL	14.5 (12.2, 16.0)	13.2 (10.7, 17.7)	13.8 (12.1, 15.6)	14.2 (12.7, 16.0)	14.3 (13.0, 17.7)	15.4 (14.4, 16.7)
Hematocrit, %	42.7 (38.3, 47.1)	39.7 (34.3, 50.2)	41.5 (37.1, 45.5)	41.7 (38.7, 45.0)	42.2 (39.4, 50.5)	45.2 (42.3, 48.2)
RBC, 10 <sup>12</sup> /L	4.8 (4.1, 5.8)	4.5 (4.0, 5.7)	4.6 (3.8, 5.2)	4.6 (4.2, 5.2)	4.7 (4.0, 5.8)	5.1 (4.8, 5.8)

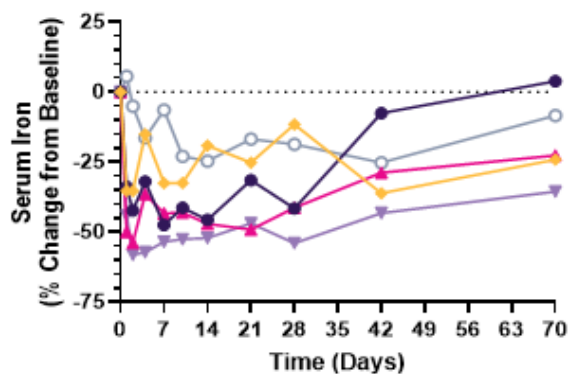
# Updated DISC-3405 HV Data: Hepcidin, Iron, and Ferritin

- DISC-3405 produced dose-related increases in serum hepcidin, with corresponding reductions in serum iron across all dose levels
- DISC-3405 resulted in deep reductions in serum iron (ranging from 50-80% from baseline) that were sustained and support a once-monthly SC dosing regimen

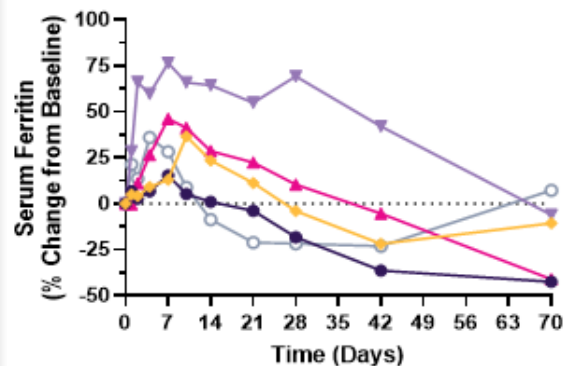
% Change from Baseline: Hepcidin



% Change from Baseline: Iron



% Change from Baseline: Ferritin

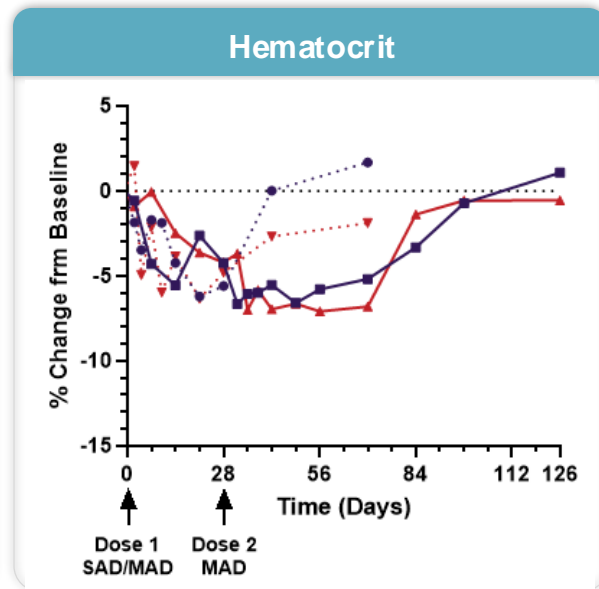
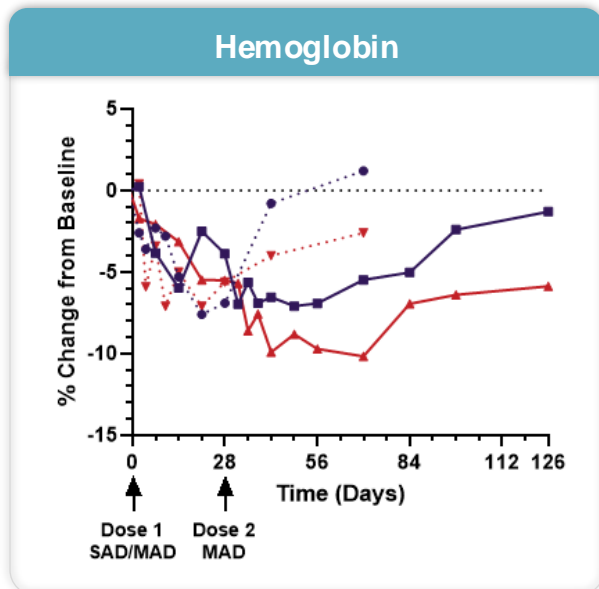
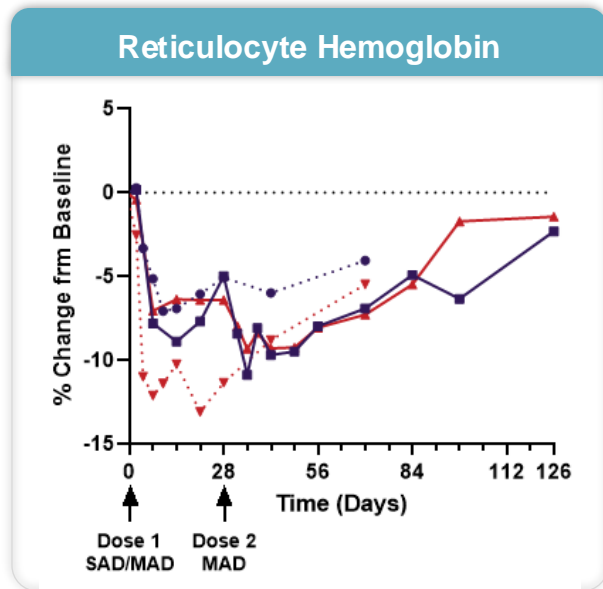


○ Placebo SC    ● 37.5 mg SC    ● 75 mg SC    ● 150 mg SC\*    ● 300 mg SC



# Updated DISC-3405 HV Data: Hematologic Response

- Single and repeat dosing of DISC-3405 demonstrated meaningful reductions in hematologic parameters (reticulocyte hemoglobin, hemoglobin, and hematocrit)



..... 75 SC, SAD    —■— 75 SC MAD    .....▼..... 150 SC SAD\*    —▲— 150 SC MAD

# Updated DISC-3405 HV Data: Safety

- Generally well tolerated at all evaluated dose levels; no serious AEs, > Grade 2 AEs, or AEs leading to study withdrawal were reported

Adverse Event	Placebo n=14	37.5 mg SC SAD n=6	75 mg IV SAD n=6	75 mg SC SAD n=6	150 mg SC SAD n=6	300 mg SC SAD n=6	75 mg SC MAD n=6	150 mg SC MAD n=6
Sore Throat	0	0	1	0	0	0	0	0
Nausea	0	1	0	1	0	0	1	0
Headache	1	1*	0	0	0	0	1	1
Cough	0	0	0	0	1	0	0	0
Rhinorrhea	0	0	0	0	1	0	0	0
Lightheadedness	0	0	0	1	0	0	0	0
Increased ALT	0	0	0	0	1*	0	0	0
Increased AST	0	0	0	0	1*	0	0	0
Fatigue	0	0	0	0	0	0	0	2

# DISC-3405 Phase 1 Healthy Volunteer Study Summary

- Dose-dependent increases in hepcidin and corresponding reductions in serum iron levels across all dose levels
- Deep and sustained reductions in serum iron (50-80% from baseline)
- Meaningful reductions in reticulocyte hemoglobin, hemoglobin, and hematocrit in both SAD and MAD cohorts
- Data set supportive of a once-monthly subcutaneous dosing regimen in polycythemia vera and iron-overload conditions
- DISC-3405 was well tolerated with no injection-site reactions

# Iron Restriction in Sickle Cell Disease

Potential for iron restriction through inhibition of Tmprss6 to benefit SCD by reducing HbS concentration

## Growing Body of Evidence for Iron Restriction for Disease Modification in Sickle Cell Disease

113.Hemoglobinopathies, Excluding Thalassemia-Basic and Translational Science

**Iron Restriction Improves Markers of Disease Severity in the Townes Mouse Model of Sickle Cell Anemia**

Nermi Parrow PhD<sup>1</sup>, Pierre-Christian Violet PhD<sup>\* 2</sup>,  
Nisha George PhD<sup>\* 3</sup>, Faris Ali<sup>\* 1</sup>, Shivam Bhanvadia<sup>\* 3</sup>,  
Mark Levine MD<sup>\* 2</sup>, Robert E Fleming MD<sup>4 5</sup>

LETTER TO BLOOD | MARCH 18, 2021

**Dietary iron restriction improves markers of disease severity in murine sickle cell anemia**

**PB2505: THERAPEUTIC PHEBOTOMY INSTANTLY AFFECTS BLOOD PARAMETERS AND VISCOSITY IN SICKLE CELL DISEASE PATIENTS**

**1112 Iron Deficiency in HbSC Disease Is Associated with Less Sickle Cell Disease-Related Complications – a Rationale for Repetitive Phlebotomy As Disease Modifying Therapy**

RED CELLS, IRON, AND ERYTHROPOIESIS | JANUARY 12, 2023

**Dietary iron restriction protects against vaso-occlusion and organ damage in murine sickle cell disease**

## DISC-3405 in a Townes Model

- 3 and 10 mg/kg IP weekly for 8 weeks
- Reduced HbS concentration
- Improved markers of inflammation
- Improved markers of hemolysis

# Disc Continues Strong Growth Trajectory Towards Becoming a Leading Hematology Company

## *Significant Accomplishments in 2024*

### **Bitopertin**

- Positive data across two Phase 2 studies
- Encouraging EOP2 Meeting with path to accelerated approval

### **DISC-0974**

- Updated positive data in anemia of MF
- Phase 2 initiation in anemia of MF
- Positive SAD data in anemia of CKD

### **DISC-3405**

- Positive healthy volunteer data
- Preclinical data in sickle cell disease

## *Important Catalysts in 2025*

- Guidance on Type C meeting with FDA
- Initiation of APOLLO study

- Initial Phase 2 data in anemia of MF
- Phase 1b multiple-dose in anemia of CKD
- Preclinical efforts on additional indications

- Polycythemia vera as first indication
- Preclinical efforts on additional indications

*Supported by a strong cash position with runway well into 2027*

**Thank You**



# EHA 2024

AURORA Data



# AURORA Study: Disposition and Baseline Characteristics

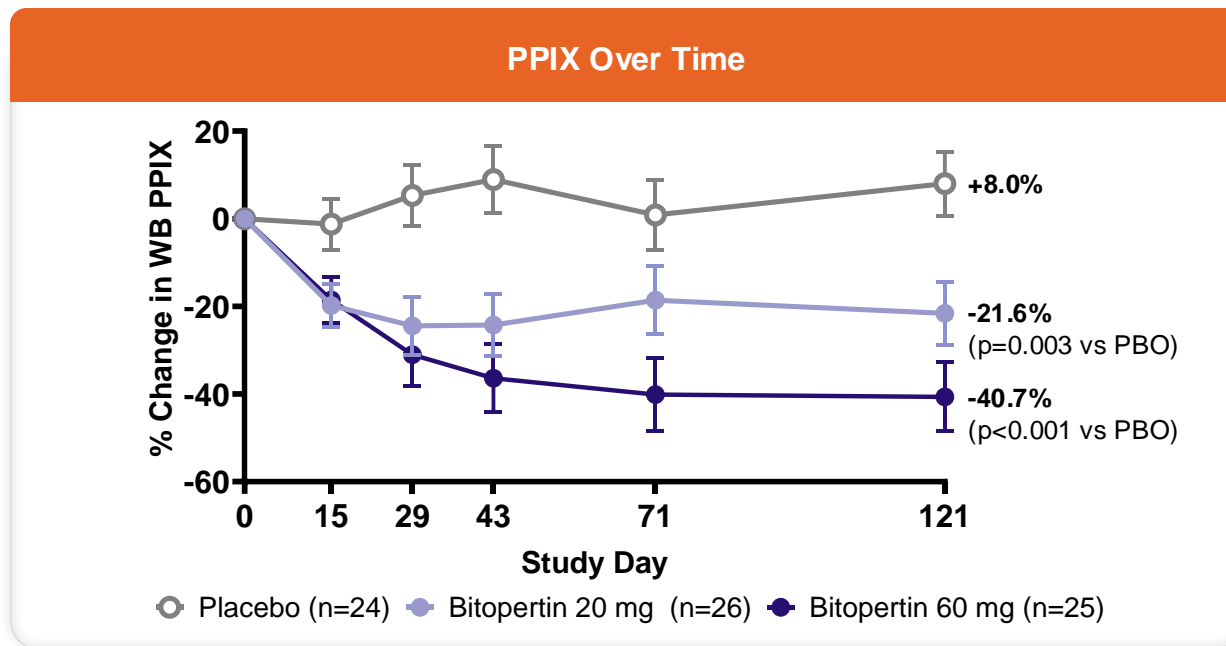
	Placebo (n=24)	Bitopertin 20 mg (n=26)	Bitopertin 60 mg (n=25)
<b>Randomized</b>	24	26	25
<b>Completed Study</b>	24	26	22
<b>Discontinued Prior to Day 121</b>	0	0	3
<b>Characteristic</b>			
<b>Mean Age, years</b>	42.3	45.0	47.8
<b>Female, n (%)</b>	12 (50%)	14 (54%)	12 (48%)
<b>White, n (%)</b>	24 (100%)	24 (92%)	24 (96%)
<b>Baseline PPIX, Mean ± SE (ng/mL)</b>	8,691 ± 903	8,155 ± 1,337	10,597 ± 983
<b>Daily Sunlight Exposure (hr), Mean (range)</b>	1.29 (0.18, 3.31)	1.17 (0.26, 4.03)	1.07 (0.04, 2.78)
<b>Time to Prodrome, n (%)</b>			
< 30 min	9 (38%)	9 (35%)	8 (32%)
≥ 30 min	15 (63%)	17 (65%)	17 (68%)



# AURORA Met Primary Endpoint

## Statistically significant reductions in whole-blood (WB) metal-free PPIX

- Bitopertin reduced PPIX levels consistent with BEACON, taking ~6-8 weeks to reach max reduction
- Significant reductions observed in both 20 mg and 60 mg doses

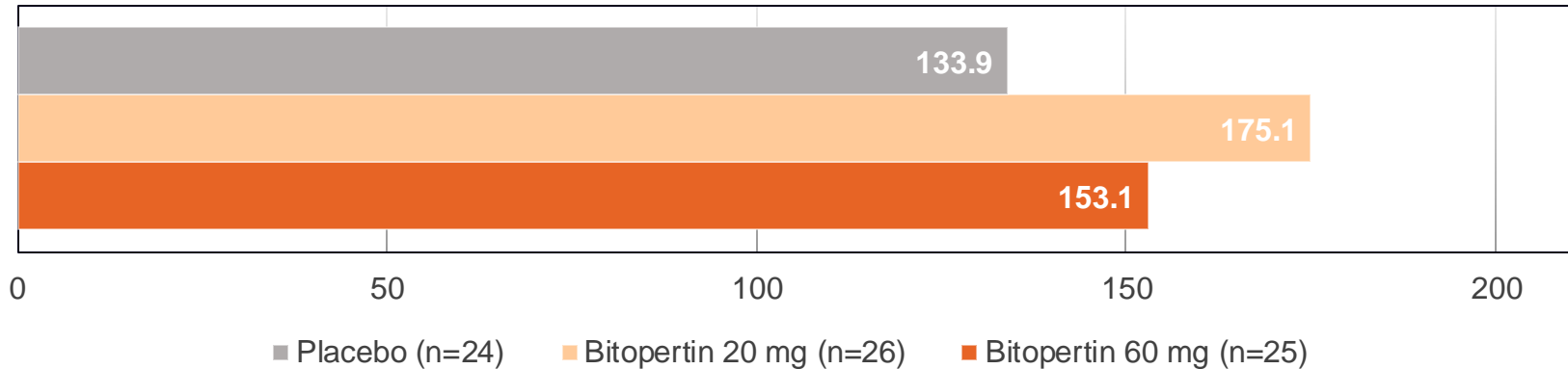


# Updated AURORA Data: Key Secondary Endpoint

## Cumulative time in light without pain

- ⊗ Bitopertin treatment effect similar to BEACON results
- ⊗ Did not meet statistical significance due to strong performance of placebo arm

Mean Cumulative 4-month Total Time in Light Without Pain (hr)

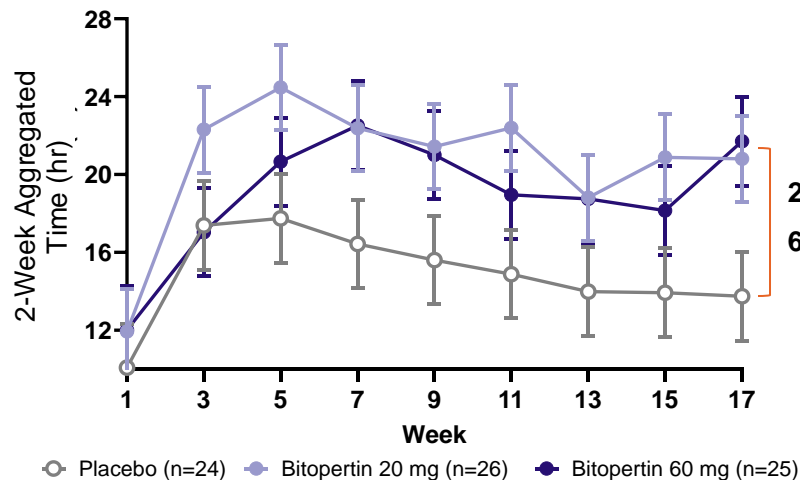


# Updated AURORA Data: Time in Light Without Pain

## Post-hoc longitudinal analysis adjusted for baseline

- Statistically significant improvements in daily time in light compared to placebo
- Meaningful changes in daily time in light relative to baseline

Sunlight Tolerance Over Time



20 mg:  $p=0.026$  vs PBO

60 mg:  $p=0.013$  vs PBO

### Change from Baseline

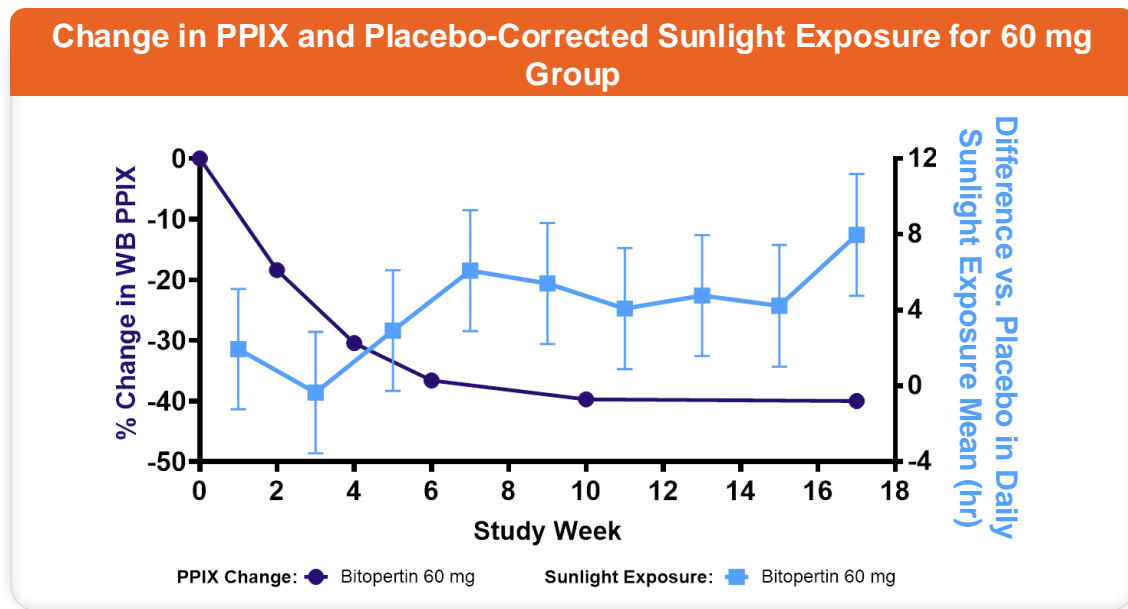
Bitopertin 60 mg (n=25) 2.0x

Bitopertin 20 mg (n=26) 1.9x

Placebo (n=24) 1.1x

# Updated AURORA Data: Light Tolerance

- Timing of PPIX reduction aligns with the time course of increases in sunlight tolerance



# Updated AURORA Data: Phototoxic Reactions with Pain

- Dose-dependent reduction in rate of phototoxic reactions with pain, reaching statistical significance in the 60 mg dose group
- Max pain score reduced with bitopertin

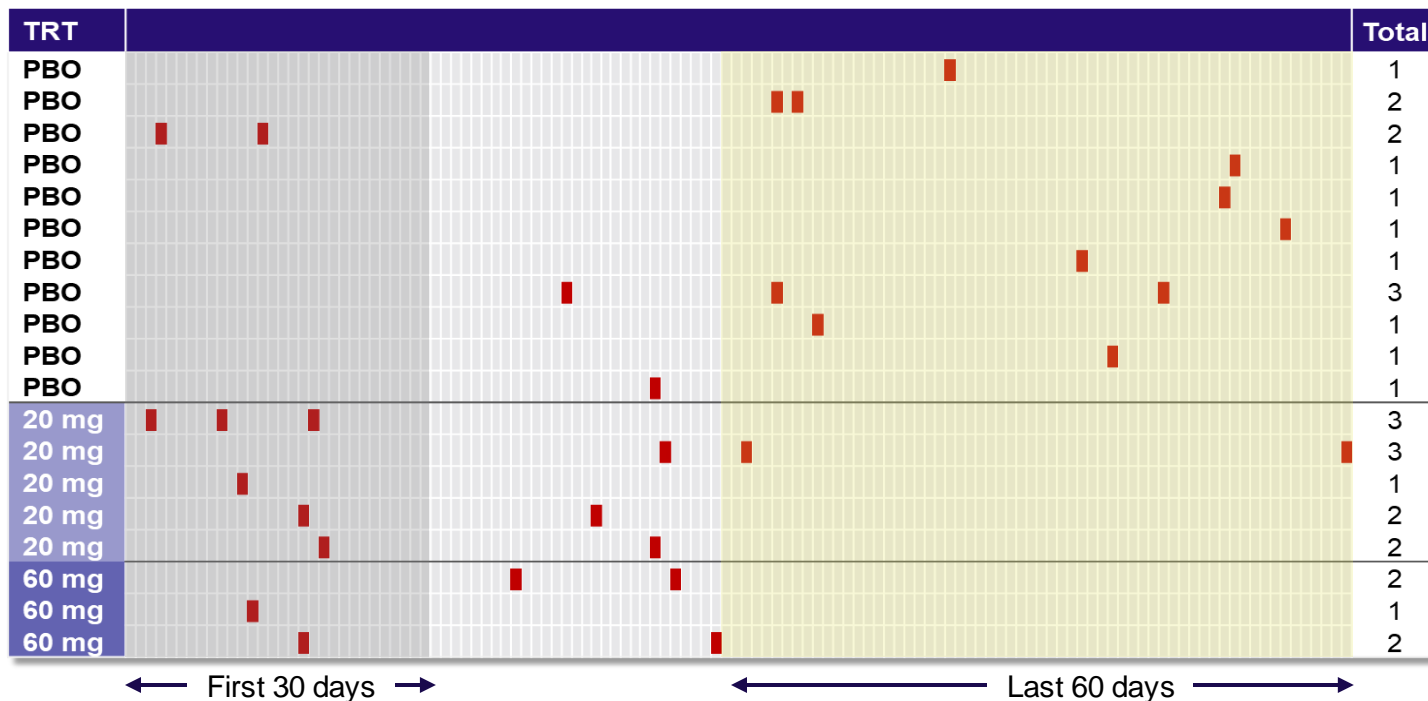
## Incidence Rate Ratio of New Phototoxic Reactions with Pain vs. Placebo



	Screening (2-4 weeks)		Double-Blind Period (17 weeks)		
	# of New Reactions	# of Participants	# of New Reactions	# of Participants	Median Max Pain Score
<b>Placebo</b> (n=24)	4	2 (8%)	15	11 (46%)	5.0
<b>Bitopertin 20 mg</b> (n=26)	11	8 (31%)	11	5 (19%)	4.0
<b>Bitopertin 60 mg</b> (n=25)	8	6 (24%)	5	3 (12%)	3.5

# Updated AURORA Data: Phototoxic Reactions with Pain

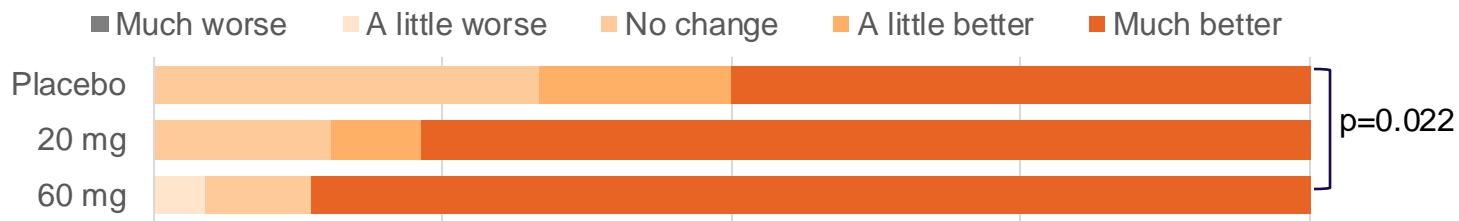
- Consistent with profile for PPIX reductions reaching a nadir, time course of phototoxic reactions showed greater bitopertin treatment effect during the last 60 days of study



# Updated AURORA Data: Patient-Reported Outcomes

- Dose-dependent improvements in Patient Global Impression of Change (PGIC), reaching statistical significance in the 60 mg dose group at end of study
- Improved PGIC responses are associated with greater reductions in PPIX

**PGIC:** “Since the start of the study, how would you rate the change in your EPP?”



% PPIX Change	PGIC Response				
	Much worse	A little worse	No change	A little better	Much better
N	0	1	14	6	48
Mean (SD)	-	43.8	6.7 (64.9)	-0.4 (15.2)	-25.9 (31.7)

# Updated AURORA Data: PPIX Change and Light Tolerance

- Greater PPIX reductions in bitopertin participants reporting no phototoxic reactions (-36.5%) vs phototoxic reactions (-4.0%)
- PPIX reductions associated with improvements in multiple measures of light tolerance

## Tertiles of PPIX Change



Light Tolerance Measure (Mean ± SD)	Tertile 3 (-7% to 190%)	Tertile 2 (-38% to -7%)	Tertile 1 (-88% to -38%)
Cumulative total time in sunlight without pain (hr)	117.5 ± 83.2	124.5 ± 68.3	161.1 ± 142.6
Average time in sunlight without pain (hr)	1.16 ± 0.83	1.20 ± 0.72	1.61 ± 1.32
Change from baseline in time to prodrome (min)	64.1 ± 123.8	109.4 ± 121.1	117.4 ± 148.6



# Safety and Tolerability

- No serious adverse events reported with bitopertin
- Stable hemoglobin levels
- Favorable safety profile consistent with prior studies enrolling >4000 participants

	Placebo (n=24)	Bitopertin 20 mg (n=26)	Bitopertin 60 mg (n=25)
<b>Participants with any TEAE, n (%)</b>	18 (75%)	20 (77%)	22 (88%)
<b>TEAEs leading to discontinuation, n (%)</b>	0	0	2 (8%)
<b>SAEs, n (%)</b>	1 (4%)	0	0
<b>Common TEAEs</b>			
Dizziness, n (%)	4 (17%)	4 (15%)	11 (44%)
Median Duration (days)	2.0	4.5	5.0
Nausea, n (%)	2 (8%)	1 (4%)	4 (16%)
Alanine aminotransferase increased, n (%)	3 (13%)	1 (4%)	2 (8%)

# Summary of EPP Bitopertin Data

## BEACON and AURORA Studies

### AURORA

- Significant reductions in PPIX  
40% vs placebo
- Time-dependent, 2x improvements  
in pain-free time in sunlight
- Significant 75% reduction in rate  
of phototoxic reactions vs placebo
- Significant improvement in PGIC  
vs placebo

◆-----◆  
**Targets underlying  
pathophysiology of EPP**  
-----◆

◆-----◆  
**Significant improvement  
in sunlight tolerance**  
-----◆

◆-----◆  
**Functional benefit by reducing  
debilitating phototoxic reactions**  
-----◆

◆-----◆  
**Significantly improved  
how patients feel**  
-----◆

### BEACON

- Significant reductions in PPIX  
>40% vs baseline
- Significant 3x increase in sunlight  
tolerance (time to prodrome)
- 92% reduction in number of  
phototoxic reactions vs baseline
- Nearly all (95%) participants reported  
improvements in PGIC