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## A Phase 1b Study of DISC-0974, an Anti-Hemojuvelin Antibody, in Patients with Myelofibrosis and Anemia

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# Hepcidin is a Key Driver of Myelofibrosis-Related Anemia

## Anemia of MF

### ➤ Etiology of Anemia

- High hepcidin from inflammation
- Inflammatory cytokine expression
- Ineffective erythropoiesis
- JAK inhibitors may worsen anemia

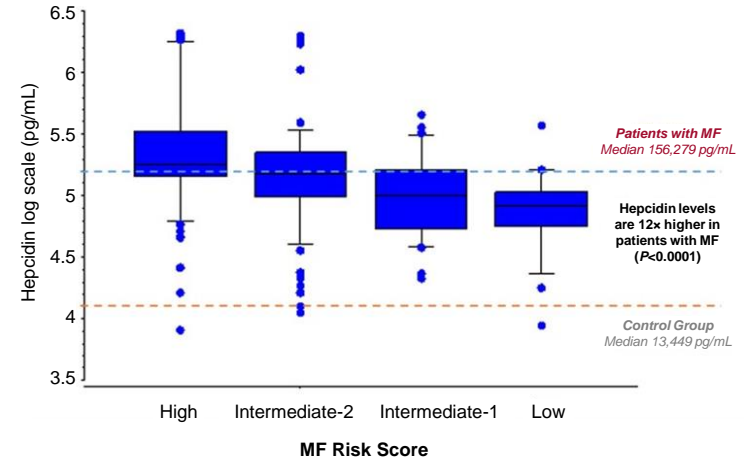
### ➤ Estimated # of Patients

- 25,000 patients (US)
- ~87% have anemia

### ➤ Unmet Medical Needs

- Anemia may limit optimal JAK inhibitor treatment
- No approved therapy specifically for anemia treatment
- Agents targeting TGF- $\beta$ -BMP-SMAD pathway under investigation

**Hepcidin Levels are Elevated in MF**  
~12x higher than control and associated with severity of anemia and transfusion burden



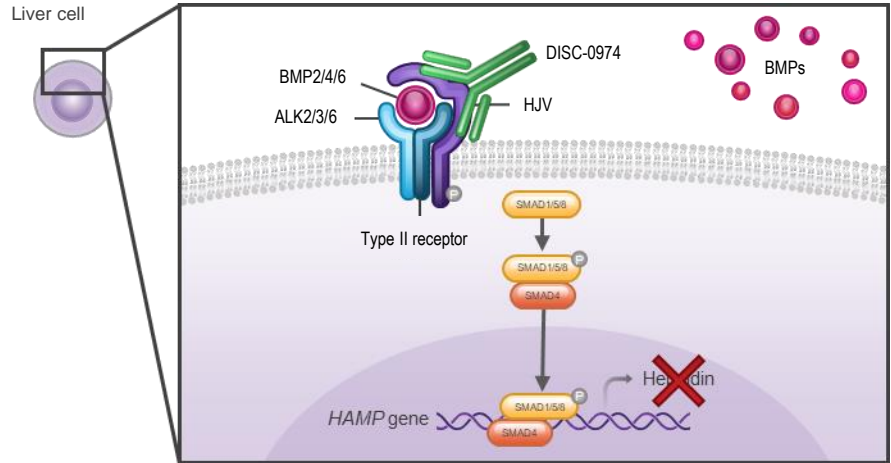
Source: Pardanani et al, Am J Hematol, 2013



# DISC-0974 Targets Hemojuvelin (HJV) to Suppress Hepcidin

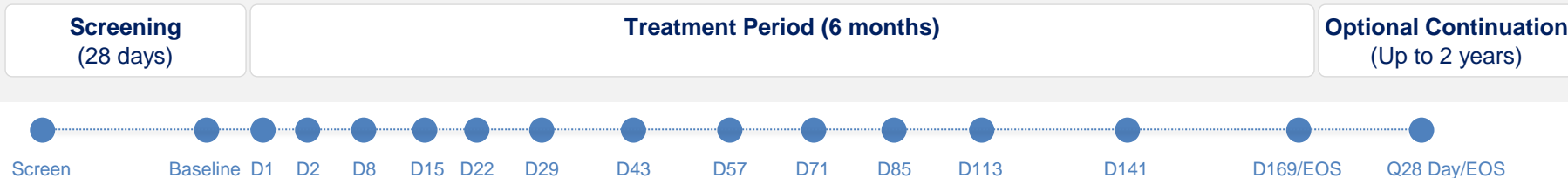
Inhibiting HJV Prevents Hepcidin Expression and Increases Iron

- **DISC-0974** is a first-in-class monoclonal antibody that binds to HJV and blocks BMP signaling
  - ↓ Hepcidin production
  - ↑ Iron absorption
  - ↑ Mobilization of stored iron into circulation
  - ↑ Hgb levels



# DISC-0974 Phase 1b Study Overview

Enrollment Data as of October 17, 2024



	14 mg	28 mg	50 mg	75 mg	100 mg	Overall
<b>Treated, N</b>	1	7	12	9	6	35
<b>Completed study, N (%)</b>	1 (100)	6 (86)	12 (100)	8 (89)	5 (83)	32 (91)
<b>Subjects with early withdrawal (N)*</b>	0	1	0	0	1	2
<b>Participating in continuation, N (%)</b>	0	2 (29)	10 (83)	8 (89)	4 (67)	24 (69)

\*Reason for early withdrawal: Physician decision due to inadequate response (n=2)

## Study Endpoints

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



# DISC-0974 Key Criteria

## Eligibility Criteria

- Age  $\geq 18$  years, with primary, post-essential thrombocythemia, or post-polycythemia vera MF
- Intermediate-2 or high-risk disease
- Hemoglobin  $< 10$  g/dL on  $\geq 3$  assessments over 84 days or TD
- Washout prior to screening for androgens, EPO, cladribine, immunomodulators, and IFN $\alpha$  is required
- Concomitant stable JAK inhibitor or hydroxyurea use is allowed
- Participants with anemia due to infection, bleeding, or iron or vitamin B12 deficiency are excluded

Group	Major Response	Minor Response	Overall	Any
<b>nTD (Hgb <math>&lt; 10</math> and 0 units transfused)*</b>	Mean Hgb $\uparrow 1.5$ g/dL $\geq 12$ weeks	Mean Hgb $\uparrow 1$ g/dL $\geq 12$ weeks	Major + Minor	Any Hgb increase $\geq 1.5$ g/dL during treatment
<b>TD Low (1-2 units transfused)*</b>	Transfusion independence $\geq 16$ -week (rolling window) and Hgb $\geq 7$ g/dL	$\geq 50\%$ reduction in transfusions from baseline over rolling 12-week window	Major + Minor	-
<b>TD High (3-12 units transfused)*</b>	Transfusion independence $\geq 12$ weeks (rolling window) and Hgb $\geq 7$ g/dL	$\geq 50\%$ reduction in transfusions from baseline over rolling 12-week window	Major + Minor	-

Criteria adapted from Tefferi et al, Blood, 2024; \*during 84 days prior to screening.



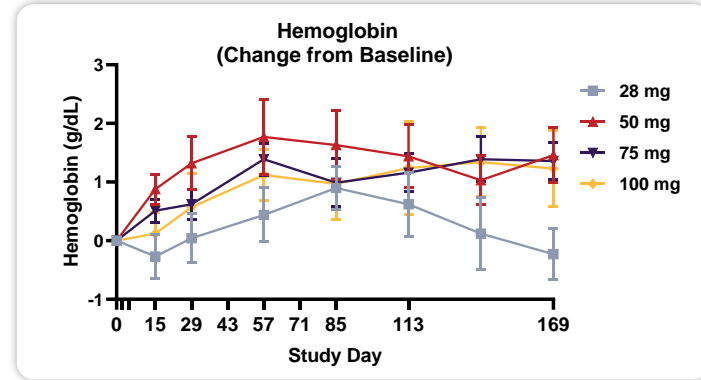
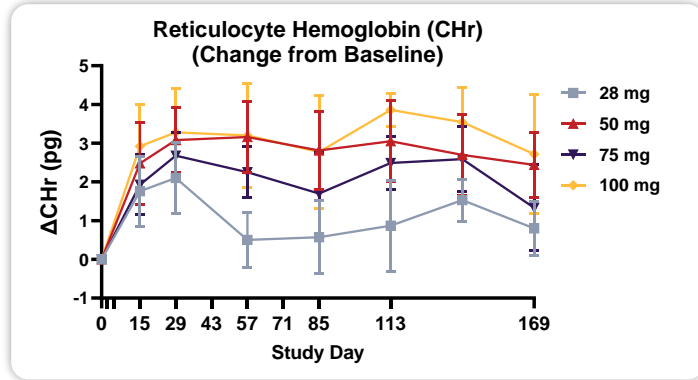
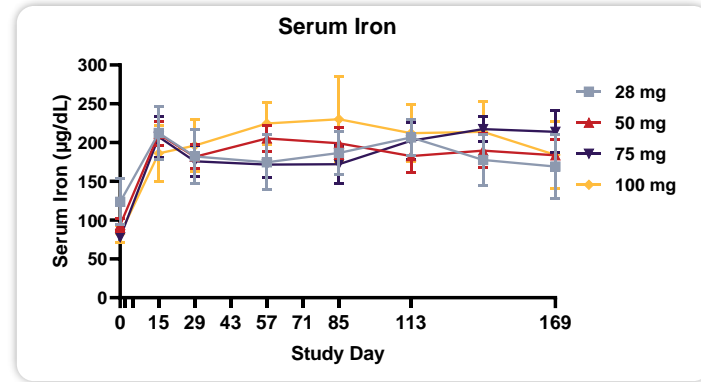
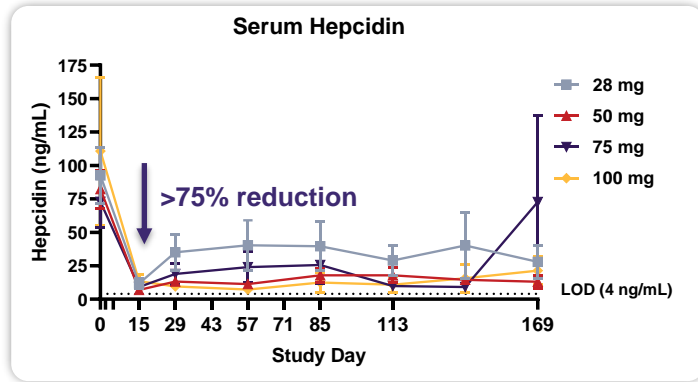
# Baseline and Demographics

	Overall (n=35)
Age, median (range), years	71 (31, 89)
Male, n (%)	23 (65.7)
Race, n (%)	
White	28 (80)
Black or African American	4 (11.4)
Asian	1 (2.9)
American Indian or Alaska Native	1 (2.9)
Other	1 (2.9)
DIPSS risk level, n (%)	
Intermediate-2	29 (82.9)
High	6 (17.1)
JAK 2 mutation present	23 (65.7)
Concomitant medication, n (%)	
JAK inhibitor	13 (37.1)
Hydroxyurea	4 (11.4)
Transfusion requirement*, n (%)	
nTD (Hgb <10 g/dL and 0 units transfused)	23 (65.7)
TD low (1-2 units transfused)	5 (14.3)
TD high (3-12 units transfused)	7 (20.0)
Baseline hepcidin, median (range), ng/mL	68.9 (8.7, 374.7)
Baseline hemoglobin, median (range), g/dL	8.4 (5.5, 10.0)



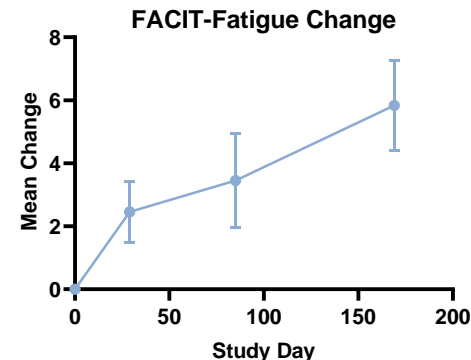
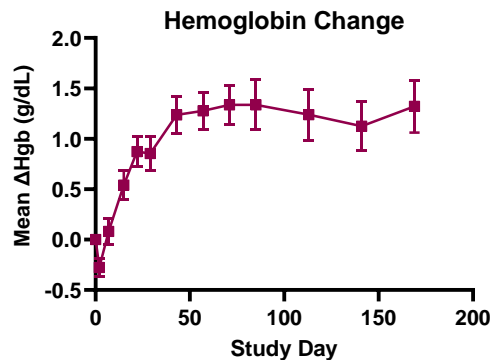
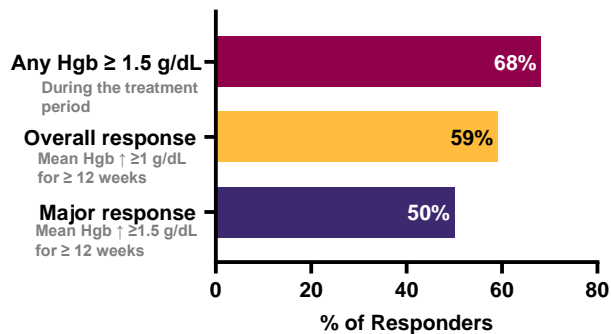
# DISC-0974 Pharmacodynamics

Reduction in hepcidin, mobilization of iron, increased reticulocyte hemoglobin, and improvement in hemoglobin



# Hematologic Response: Non-Transfusion-Dependent Participants# (n=22)

68% of nTD 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

nTD participants: Baseline Hgb <10 with 0 units PRBC in the 84 days prior to screening.

## Response

## Mean $\pm$ SD (days)

Time to first Hgb increase for major response

36  $\pm$  18

Duration of major response during treatment period

150  $\pm$  27

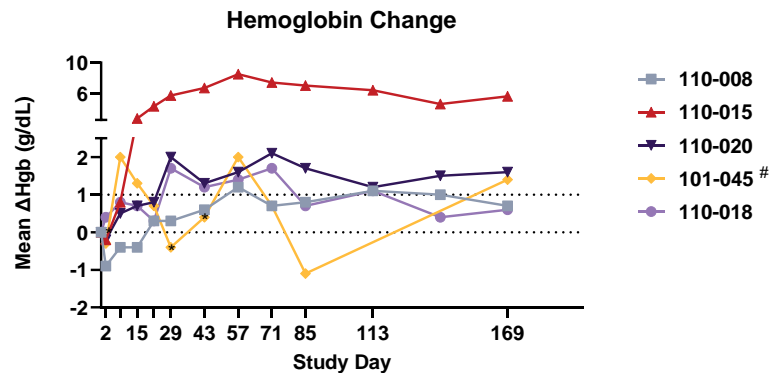
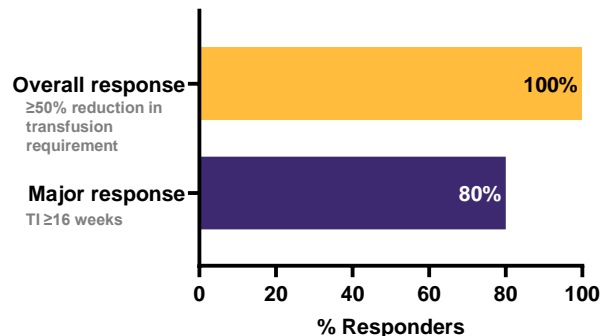
17 of 22 nTD participants have received continuation treatment with median response not reached. Follow-up ongoing (maximum 14.7 months)





# Hematologic Response: Transfusion-Dependent-Low Participants (n=5)

**100% of TD-low<sup>a</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

<sup>a</sup> Participants receiving 1-2 units PRBC in the 84 days prior to screening;  
<sup>\*</sup>Indicates transfusion; <sup>#</sup>Indicates patient receiving transfusion during treatment period.

**Response**

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

TD low duration major of response during treatment period

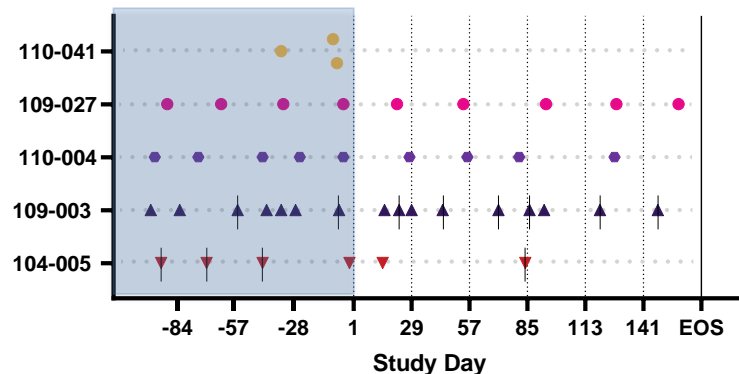
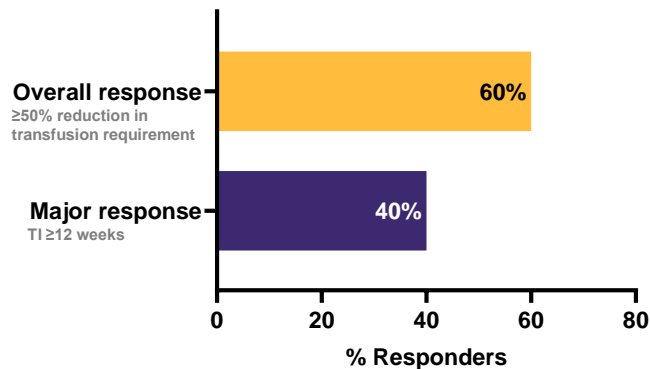
171  $\pm$  4

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



# Hematologic Response: Transfusion-Dependent-High Participants (n=5)<sup>#</sup>

60% of TD-high<sup>a</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

<sup>a</sup> Participants receiving 3-12 units PRBC in the 84 days prior to screening; <sup>#</sup>2 TD-high participants were considered not evaluable due incomplete data entry at time of data cut

Response

Mean  $\pm$  SD (days)

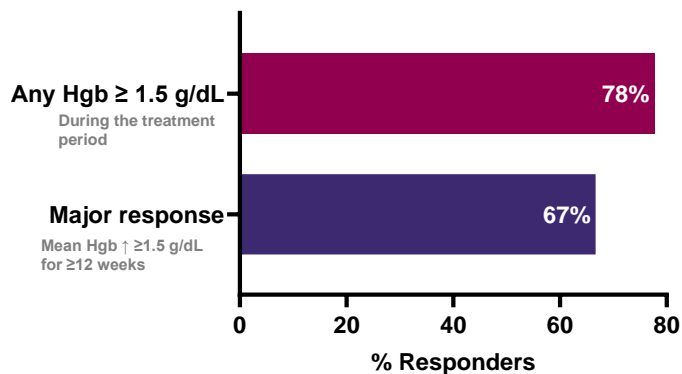
TD-high duration of major response during treatment period

127  $\pm$  60

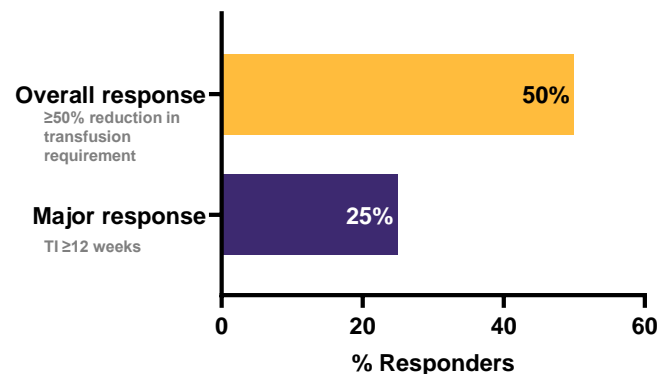


# Hematologic Response with Concomitant JAKi Therapy (n=13)

## nTD Response (n=9)



## TD-High Response (n=4)



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



# Summary of 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.



# Conclusions

- DISC-0974 was **safe and well tolerated** at all evaluated dose levels
- DISC-0974 resulted in **sustained ↓hepcidin and ↑serum iron** for several weeks after each dose
- Among participants treated at 28 mg to 100 mg:
  - ✓ 50% of nTD participants with durable mean Hgb increases of  $\geq 1.5$  g/dL
  - ✓ nTD participants have clinically meaningful improvement in FACIT-fatigue
  - ✓ 80% of TD-low participants achieved TI-16 weeks
  - ✓ 40% of TD-high participants achieved TI-12 weeks
  - ✓ 60% of TD-high participants achieved a 50% reduction in transfusions over a rolling 12-week window
  - ✓ 54% of participants (n=13) receiving concomitant JAKi therapy achieved durable hematologic responses
- **Phase 2 enrollment is ongoing with a 50 mg starting dose**
  - Study will include additional correlatives including cytokine levels and NGS testing

