UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d)

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

Date of Report (Date of earliest event reported): March 12, 2024

Morphic Holding, Inc.

(Exact Name of Registrant as Specified in its Charter)

Delaware (State or other jurisdiction of incorporation or organization) 001-38940 (Commission File Number) 47-3878772 (I.R.S. Employer Identification No.)

35 Gatehouse Drive, A2 Waltham, Massachusetts (Address of principal executive offices)

02451 (Zip Code)

Registrant's telephone number, including area code: (781) 996-0955

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)
- $\begin{tabular}{ll} \Box & Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b)) \\ \hline \end{tabular}$
- $\begin{tabular}{ll} \Box & Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c)) \\ \hline \end{tabular}$

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered	
Common Stock, \$0.0001 par value per share	MORF	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 \square

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. \Box

Item 7.01 Regulation FD Disclosure.

On March 12, 2024, the Company updated its corporate presentation. A copy of the updated corporate presentation is attached hereto as Exhibit 99.1 and is incorporated herein by reference.

The information in this Current Report on Form 8-K including Exhibit 99.1 to this report, shall not be deemed to be "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liabilities of that section or Sections 11 and 12(a)(2) of the Securities Act of 1933, as amended (the "Securities Act"). The information contained in this Current Report on Form 8-K and in the accompanying Exhibit 99.1 shall not be incorporated by reference into any other filing under the Exchange Act or under the Securities Act, except as shall be expressly set forth by specific reference in such filing.

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

MORPHIC HOLDING, INC.

Date: March 12, 2024

/s/ Marc Schegerin

Marc Schegerin, M.D.
Chief Financial Officer and Chief Operating Officer



Forward-Looking Statements

This presentation contains "forward-looking" statements within the meaning of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995, including, but not limited to statements regarding the timing and success of Morphic's ongoing clinical trials and related data, updates and results from Morphic's clinical trials and the potential therapeutic benefits of MORF-057.

Certain data in this presentation are based on cross-study comparisons and are not based on any head-to-head clinical trials. Cross-study comparisons are inherently limited and may suggest misleading similarities and differences. The values shown in the cross-study comparisons are directional and may not be directly comparable.

Statements including words such as "believe," "plan," "continue," "expect," "will," "develop," "signal," "potential," or "ongoing" and statements in the future tense are forward-looking statements. These forward-looking statements involve risks and uncertainties, as well as assumptions, which, if they do not fully materialize or prove incorrect, could cause our results to differ materially from those expressed or implied by such forward-looking statements.

Forward-looking statements are subject to risks and uncertainties that may cause Morphic's actual activities or results to differ significantly from those expressed in or implied by any forward-looking statement, including risks and uncertainties related to the forward-looking statements in this presentation and other risks set forth in our filings with the Securities and Exchange Commission (SEC), including the Annual Report on Form 10-K for the fiscal year ended December 31, 2023 filed with the SEC on Fobruary 22, 2024, and the Quarterly Report on Form 10-Q for the fiscal quarter ended September 30, 2023 filed with the SEC on November 3, 2023. These forward-looking statements speak only as of the date hereof and Morphic specifically disclaims any obligation to update these forward-looking statements or reasons why actual results might differ, whether as a result of new information, future events or otherwise, except as required by law.

Note regarding trademarks: all third-party trademarks, including names, logos and brands, referenced by in this presentation are the property of their respective owners. All references to third-party trademarks are for identification purposes only and shall be considered nominative fair use under trademark law.



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Unique Receptors: Unique Therapeutic Potential

What are integrins?

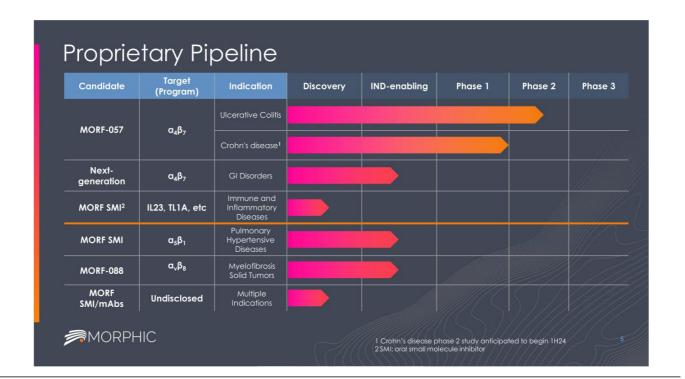
- Only receptor to signal bidirectionally, giving them central biologic roles in complex diseases: autoimmune, fibrotic, cardio-metabolic and oncologic
- Expensive, complex biologics have shown clinically meaningful efficacy by targeting integrins



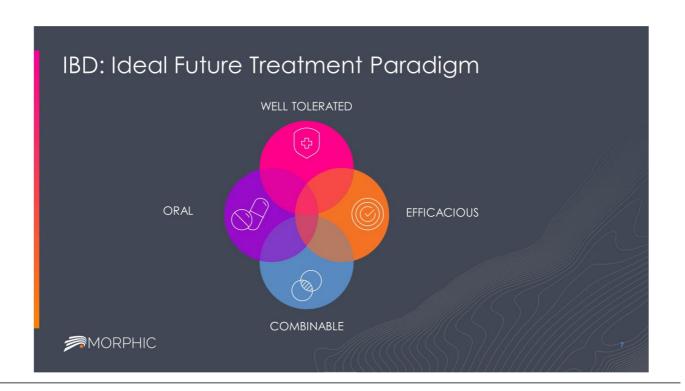


MInT Platform: Morphic's Solution to the Oral Integrin Challenge

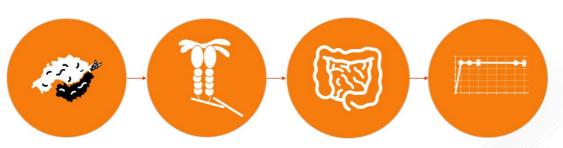








First-In-Class Oral Integrin Drug for IBD



MORF-057

Highly selective orally available small molecule inhibitor of $\alpha_4\beta_7$ well validated mechanism for the treatment of IBD through approved monoclonal antibody vedolizumab



Chrohn's and Colitis Foundation of America

Mechanism

Occluding $a_4\beta_7$ blocks intestinal homing of lymphocytes, which in turn reduces pathologic inflammation in IBD

Indications

Inflammatory bowel disease with initial focus on ulcerative colitis

Approximately 1.6 million Americans currently have irritable bowel disease

Clinical Data

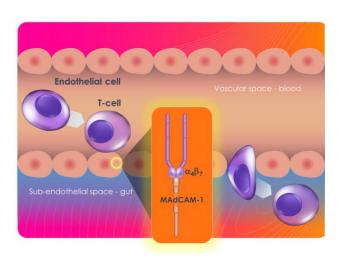
Clinically meaningful and consistent activity data across multiple validated efficacy measures in Phase 2a study

Well tolerated to date across multiple clinical trials

Phase 2b ongoing in UC, Crohn's disease to begin 1H24

$\alpha_4\beta_7$ Inhibition is a Proven Mechanism to Treat IBD

- Approved antibody Entyvio® (vedolizumab)
- Vedolizumab, an anti-a_4 β_7 antibody, inhibits T-cell trafficking via well validated mechanism to treat UC and Crohn's disease
- Since approval, over 265,000 patients have received vedolizumab¹
- Vedolizumab generated \$5.2B sales in FY2022²

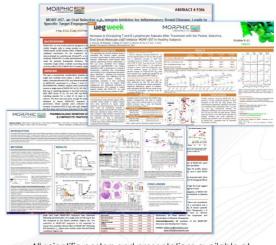




²Global Data NTYVIO® is a registered trademark of Millennium Pharmaceuticals, Inc.

MORF-057 has Consistently Delivered on Expectations for an Oral $\alpha_4\beta_7$ Inhibitor in IBD





Please click on links in row headings above for underlying data

All scientific posters and presentations available at https://investor.morphictx.com





MORF-057 Phase 2a: EMERALD-1Study in Moderate to Severe UC



Phase 2a open-label single-arm study of MORF-057 (100mg BID) in patients with moderately to severely active ulcerative colitis (n=35 main cohort)

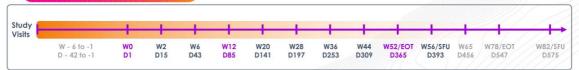
Phase 2a

- Primary endpoint: Change in RHI measured at 12 weeks
- Secondary endpoints: mMCS change from baseline, safety

- RHI remission
 MCS remission
 MCS response
 Multiple PK/PD parameters
 Relevant biomarkers

Open-Label Treatment Period MORF-057 (100mg B.I.D. P.O.) for 52 weeks Primary endpoint at week 12 Long-Term Extension Direct rollover to extension MORF-057 (100mg B.I.D. P.O.) for 26 weeks

Safety Follow-Up Period Safety Follow-up Visit to occur 4 weeks after last dose of study drug





Data from the 52-week readout of the EMERALD-1 phase 2a study of MORF-057 in ulcerative collits, including the 40-week maintenance phase of the main cohort and from the 12-week induction phase of the exploratory cohort of four patients of secondary pron-responders to vedolizumeh, have been collected and analyzed. No safety signals have been identified in either cohort. Morphic believes the 52-week readout, including safety, clinical efficacy and pharmacokinetic/pharmacodynamic measures, are substantially consistent with data trends from the 12-week induction phase and the 44-week readout that we reported in October 2023 for EMERALD-1. The Company is preparing a manuscript for submission and intends to publish the EMERALD-1 data set in an appropriate medical journal or forum as soon as practicable, pending review and acceptance of these data.

Baseline Patient Demographics: a Moderately-to-Severely Active UC population with High Disease Burden

Category		Patients, N=35
Age, mean ± SD	Years	39.2 ± 14.1
Sex, n (%)	Female	16 (45.7)
Geography, n (%)	Poland United States	28 (80.0) 7 (20.0)
Duration of disease, mean ± SD	Years	7.5 ± 8.0
Extent of disease, n (%)	Proctosigmoiditis L-sided colitis Pancolitis	12 (34.3) 10 (28.6) 10 (28.6)
RHI Score, mean ± SD	Points	22.7 ± 7.3
mMCS, mean ± SD	Points	6.7 ± 1.1
MES, n (%)	2 3	18 (51.4) 17 (48.6)
Corticosteroid use, n (%)	No Yes	26 (74.3) 9 (25.7)
Previous use of AT*, n (%)	Naïve Experienced	21 (60.0) 14 (40.0)

AT, advanced therapy; MES, Mayo endoscopic score; mMCS, modified Mayo Clinic score; RHI, Robarts histopathology index; SD, standard deviation

*The number of AT-experienced patients was updated from n=13/35 to n=14/35 during re-review of data for presentation at a medical conference. During this re-review, It was determined that one patient had received an investigational agent deemed to be an advanced therapy before the MORF-057-201 trial. This change does not impact any of the clinical efficacy data presented from the EMERALD-1 study.



Generally Well-Tolerated in EMERALD-1 No Safety Signal Observed

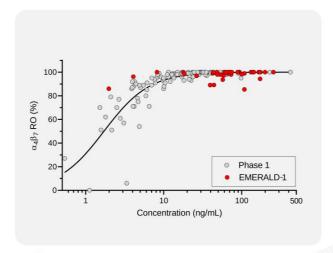
Adverse Event (AE) profile consistent with underlying disease state

Patients with at least one AE	12 (34.3%)
Patients with any serious AE	0
Patients with AE leading to death	0
Patients with any grade 3 AE	2 (5.7%)¹
Patients with treatment-related AE	2 (5.7%)
Common (>5%) AEs Exacerbation of UC Anemia	4 (11.4%) 3 (8.6%) ²



Both UC exacerbations, one led to early discontinuation
 All anemic at baseline and continued on study with iron supplements
 Safety data as of 4/25/23 induction presentation. As of 3/12/24, patients have been on EMERALD-1 study beyond the 52-week maintenance phase and no safety signals have been reported.

Patient a4β7 Receptor Occupancy (RO) Consistent with Healthy Volunteer RO



a4β7 selectivity over a4β1 consistent with Phase 1 results

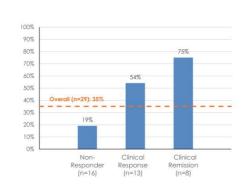
R	O at 12 week	(S
	α4β7	α4β1
Mean	>98%	BLQ
Median	>99%	BLQ

- a4β7 RO achieved early and sustained saturating levels
- a4β1 RO remained at low levels
- No lymphocytosis or changes to circulating naïve T-cells were observed
- a4\(\beta\)1 projected RO was below the limit of quantitation with mean trough value estimated to be <15\(\mathscr{9}\)

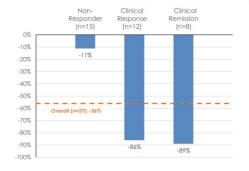


Fecal Calprotectin Decreases Correlated with Disease Improvement

Proportion of Patients with Fecal Cal < 250 mg/kg at Week 12 (Baseline > 250 mg/kg), n=29



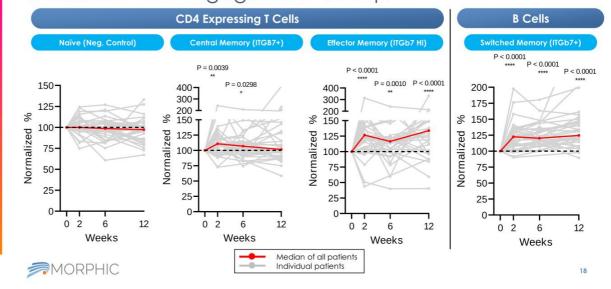
Percentage Reduction From Baseline in Fecal Cal at Week 12 (Baseline > 250 mg/kg & Week 12 data available), n=27°





n = Patients with baseline FC > 250 mg/kg. No inclusion/exclusion criteria for FC levels Patients experiencing clinical remission also included in clinical response a. Data unavailable for 2 patients at week 12

Substantial Lymphocyte Subset Changes Observed, Consistent With Engagement Of a4\$7





Primary Endpoint Met with Statistical Significance Consistent Effects Observed Among All Exploratory Measures

Overall **Endpoint @ Week 12** (N=35)-6.4 (11.18) p=0.0019 Change in RHI, Mean (SD) RHI remission, n (%) 8 (22.9%) Clinical response (mMCS)1, n (%) 16 (45.7%) Clinical remission (mMCS)², n (%) 9 (25.7%) Endoscopic Response/Improvement³, n (%) 9 (25.7%) Change from baseline to Week 12 in the -2.3 (2.14) Modified MCS, Mean (SD)

^{1.} Clinical response (mMCS): decrease from baseline in the mMCS ≥2 points and ≥30% from baseline, plus a decrease in rectal bleeding subscore ≥1 or an absolute rectal bleeding subscore ≤1?

2. Clinical remission (mMCS): rectal bleeding subscore of 0; a stool frequency subscore of ≤1: and an MES of ≤1 without fitability 3. Endoscopic response / improvement: MES ≤1



EMERALD-1 Efficacy Results by AT Status and MES

Endpoint @ Week 12	Overall N=35	AT-naïve n=21	AT- experienced n=14	MES =2 n=18	MES =3 n= 17
Change in RHI, mean ± SD	-6.4 ± 11.2	-7.4 ± 11.9	-4.8 ± 10.3	-6.9 ± 12.1	-5.8 ± 10.4
RHI change ≥ 7 points, n (%)	17 (48.6)	12 (57.1)	5 (35.7)	10 (55.6)	7 (41.2)
RHI remission ¹ , n (%)	8 (22.9)	6 (28.6)	2 (14.3)	6 (33.3)	2 (11.8)
RHI reduction ≥ 50%, n (%)	12 (34.3)	9 (42.9)	3 (21.4)	9 (50.0)	3 (17.6)
Change in mMCS, mean ± SD	-2.3 ± 2.1	-2.9 ± 2.4	-1.6 ± 1.5	-2.7 ± 2.3	-1.9 ± 1.9
Clinical response (mMCS) ² , n (%)	16 (45.7)	11 (52.4)	5 (35.7)	9 (50)	7 (41.2)
Clinical remission (mMCS) ³ , n (%)	9 (25.7)	9 (42.9)	0	6 (33.3)	3 (17.6)
Symptomatic remission ⁴ , n (%)	11 (31.4)	10 (47.6)	1 (7.1)	7 (38.9)	4 (23.5)
Endoscopic response / improvement ⁵ , n (%)	9 (25.7)	9 (42.9)	0	6 (33.3)	3 (17.6)
Change in SF, mean ± SD	-0.8 ± 1.1	-1.0 ± 1.2	-0.5 ± 0.7	-0.9 ± 1.3	-0.6 ± 0.8
Change in RB, mean ± SD	-1.1 ± 0.8	-1.1 ± 0.9	-0.9 ± 0.8	-1.4 ± 0.8	-0.7 ± 0.7

AT, advanced therapy; MCS, Mayo Clinic Score; mMCS, modified MCS; RHI, Robarts histopathology index; SF, Stool Frequency; RB, Rectal Bleeding; SD, standard deviation

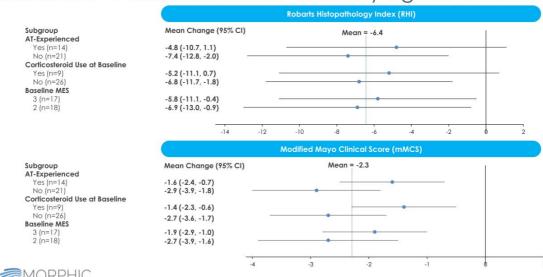
1. RHI Remission: RHI ≤ 2

2. Clinical response (m2CS): decrease from baseline in the mMCS ≥2 points and 230% from baseline, plus a decrease in rectal bleeding subscore ≥1 or an absolute rectal bleeding subscore ≥1 or an absolute rectal bleeding subscore ≤1 or an absolute rectal bleeding subscore of 0; a stool frequency subscore of ≤1; and an MES of ≤1 without friability

4. Symptomatic remission: 353 = 0 (a² = 1 with ≥ 1 point decrease from baseline) and RBS = 0

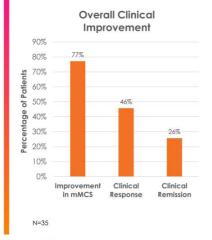
5. Endoscopic response/improvement; MES =1

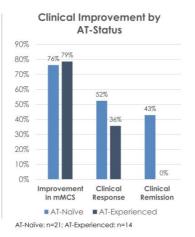
Consistent "Across-the-Board" Efficacy Signals Observed

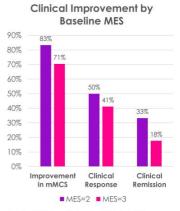




Clinical Improvement in >75% of All Patients, Regardless of Prior Therapy and Baseline MES



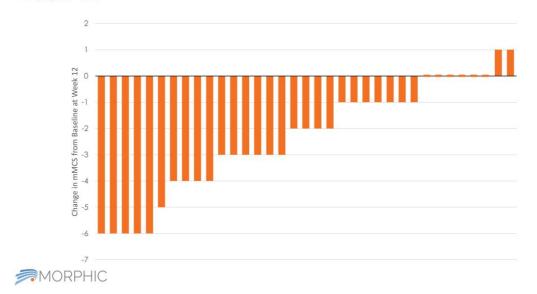




Baseline MES=2: n=18; Baseline MES=3: n=17

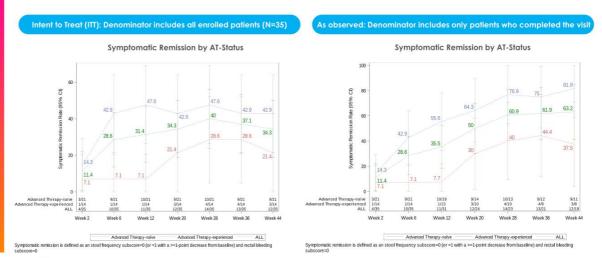


Change in Central mMCS By Patient from Baseline at Week 12





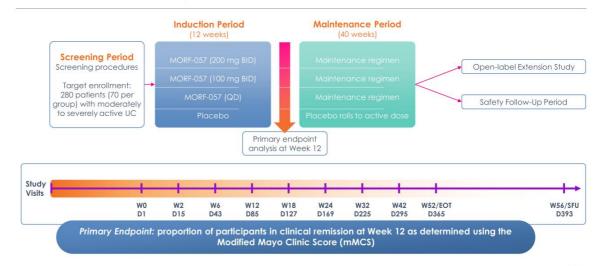
Symptomatic Remission By AT-Status: Week 44



MORPHIC Note: These are ad hoc analyses and are subject to change during the quality control and trial completion processes

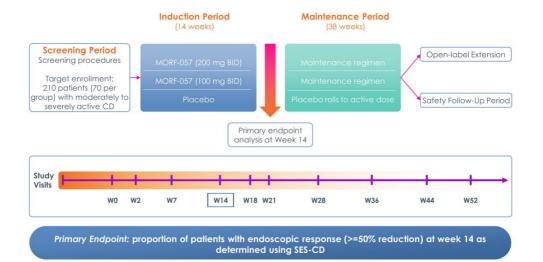
MORF-057 Phase 2b: EMERALD-2 Study in Moderate to Severe UC





GARNET Phase 2 Study of MORF-057 in Moderate to Severe Crohn's Disease







$\alpha_{\text{5}}\beta_{\text{1:}}$ Small Molecule Integrin Inhibitor for Pulmonary Hypertensive Diseases



Program

Small molecule inhibitors of fibronectin integrins in preclinical development



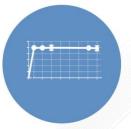
Mechanism

Fibronectin integrin inhibition suppresses pulmonary arterial smooth muscle cell proliferation



Indications

Multiple pulmonary hypertensive diseases



Data

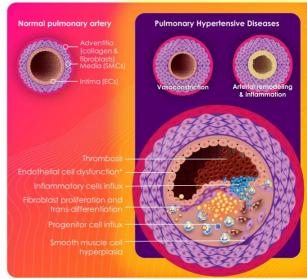
Preclinical data demonstrating improved cardiac output and reversal of vascular remodeling



$\alpha_5\beta_1$ Integrin Inhibition for Pulmonary Hypertensive Diseases

- Potential applications in severely underserved pulmonary hypertensive diseases
- In preclinical studies, A₅β₁ inhibition may drive multiple independent processes:
 - Reverses remodeling in pulmonary vasculature
 - Directly prevents right ventricle fibrosis
 - Improves cardiomyocyte efficiency
- $A_5\beta_1$ inhibition holds potential for true disease-modifying activity



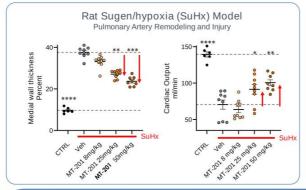


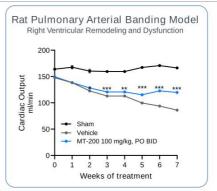
*FDA approved drugs (Vasodilators)

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Modified from Pharmacol Ther, 2013 Jun; 138(3): 409-17

$\alpha 5 \text{b1}$ Inhibition Improves Pulmonary Artery Remodeling and Cardiac Function





 $\alpha5\beta1$ inhibition Improves Pulmonary Artery Remodeling and prevents right ventricle failure in preclinical models

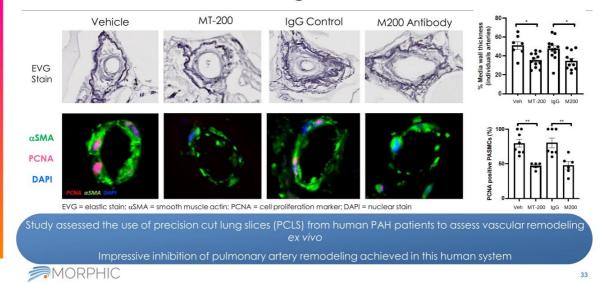
Potential differentiation from TGF-β family inhibitors, which did not show improvement in cardiac output in patients



MT-200 = α 5 β 1/ α v small molecule inhibitor; (100 mg/kg, PO BID), SOC = Macitentan (Endothelin receptor antagonist, 1 mg/kg, PO BID), Tadalafil (phosphodiesterase type 5 inhibitor, 10 mg/kg, PO BID). MT-201 = α 5 β 1 small molecule inhibitor (PO BID)

Data generated by Sebastien Bonnet, Laval University
Mean ± SEM. *p<0.05; **p<0.01; ***p<0.001
One-way ANOVA followed by Dunnett's test vs. Vehicle

$\alpha_5\beta_1$ Inhibition Blocks Pulmonary Artery Smooth Muscle Cell Proliferation in Human PAH Lung Slices



MT-200 = α 5 β 1 small molecule inhibitor; M200 = Volociximab, α 5 β 1-specific antibody

Data generated by Sebastien Bonnet, Laval University

$\alpha_{\rm v}\beta_8$ Small Molecule Integrin Inhibitor Program for Myelofibrosis and Immuno-oncology



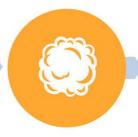
ανβ8 Program

Small molecule inhibitors of the $\alpha_{\nu}\beta_{8}$ integrin in preclinical development



Mechanism

 $\alpha_{\nu}\beta_{8}$ inhibition suppresses activation of TGF β isoforms 1 and 3



Indications

Myelofibrosis; Combination therapy for solid tumors



Data

Oral $\alpha_v \beta_8$ inhibitor, in combination with anti-PD-1, drives efficacy across mouse models of treatment-resistant breast cancer;

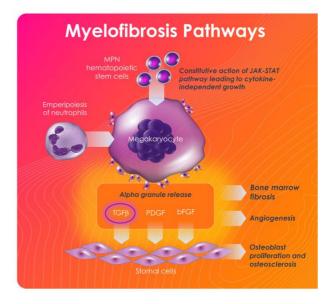
 $\begin{tabular}{ll} Myelofibrosis: $a_s\beta_8$ inhibition drives increase in platelet production in published literature \end{tabular}$





MORF-088: $a_v\beta_8$ Inhibitor for Myelofibrosis (MF)

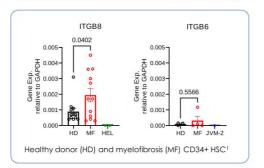
- MF: multi-mechanistic etiology including TGF-R
- Blockbuster rare disease indication
 - Jakafi \$1 billion MF sales alone
- No disease modifying Tx except allogeneic hematopoietic stem cell transplant
- Current SoC has multiple deficiencies
 - Toxicity: anemia and thrombocytopenia
 - Intolerance or resistance to therapy develops over time
 - · Not disease modifying
- $\alpha_{v}\beta_{8}\,\text{Smi}$ offers potential to increase platelet counts



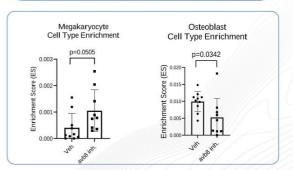


$\alpha_{\rm v}\beta_{\rm 8}$ Inhibition: Central Role in TGF- $\!\beta$ Modulation

 $\alpha_{\nu}\beta_{8}$ is the dominant TGF- β forming integrin in human bone marrow



 $\alpha_v \beta_8$ inhibition in vivo leads to enrichment of megakaryocytes and decreased osteoblasts, suggesting a healthier bone marrow niche





¹The HEL 92.1.7 (HEL) and JVM-2 cell lines were used as a negative controls for ITGB8 and ITGB6 expression, respectively.

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Deep Specialist Expertise Across Management, and Board of Directors

Executive Team



Praveen Tipirneni, MD
Chief Executive Officer



Bruce Rogers, PhD
President



Marc Schegerin, MD

Chief Financial Officer
Chief Operating Officer



William DeVaul General Counsel and Secretary



Blaise Lippa, PhD Chief Scientific Officer

Board of Directors

Gustav Christensen, MBA Chairman Morphic Board, former CEO, Dyax

Timothy Springer, PhD Founder, Morphic Therapeutic, Member of Morphic Scientific Advisory Board; Latham Family Professor, Professor of Biological Chemistry and Molecular Pharmacology; Professor of Medicine, Harvard Medical School

Norbert Bischofberger, PhD President & CEO, Kronos; EVP R&D, CSO, Gilead

Martin Edwards, MD Former Chairman, Kalvista; Senior Partner, Novo Holdings

Nisha Nanda, PhD Group VP, External Innovations at Eli Lilly and Company

Amir Nashat, PhD Managing Partner, Polaris Partners

Amir Nashat, PhD Managing Partner, Polaris Partners

 ${\bf Susannah\ Gray,\ PhD\ } {\bf Former\ CFO,\ Royalty\ Pharma}$

Joseph P. Slattery, CPA Former CFO, Transenterix, Baxano, Digene

Praveen Tipirneni, MD CEO Morphic Therapeutic



