MORPHOSYS:

Redefining How Cancer Is Treated

Corporate Presentation | January 2024

Forward-Looking Statements

This communication contains certain forward-looking statements concerning the MorphoSys group of companies, including the expectations regarding Monjuvi's ability to treat patients with relapsed or refractory diffuse large B-cell lymphoma ("DLBCL"), the further clinical development of tafasitamab, including ongoing confirmatory trials, additional interactions with regulatory authorities and expectations regarding future regulatory filings and possible additional approvals for tafasitamab as well as the commercial performance of Monjuvi. The words "anticipate", "believe", "estimate", "expect", "intend", "may", "plan", "predict", "project", "would", "could", "potential", "possible", "hope" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. The forward-looking statements contained herein represent the judgment of MorphoSys as of the date of this release and involve known and unknown risks and uncertainties, which might cause the actual results, financial condition and liquidity, performance or achievements of MorphoSys, or industry results, to be materially different from any historic or future results, financial conditions and liquidity, performance or achievements expressed or implied by such forward-looking statements. In addition, even if MorphoSys' results, performance, financial condition and liquidity, and the development of the industry in which it operates are consistent with such forward-looking statements, they may not be predictive of results or developments in future periods. Among the factors that may result in differences are MorphoSys' expectations regarding risks and uncertainties related to the impact of the COVID-19 pandemic to MorphoSys' business, operations, strategy, goals and anticipated milestones, including its ongoing and planned research activities, ability to conduct ongoing and planned clinical trials, clinical supply of current or future drug candidates, commercial supply of current or future approved products, and launching, marketing and selling current or future approved products, the global collaboration and license agreement for tafasitamab, the further clinical development of tafasitamab, including ongoing confirmatory trials, and MorphoSys' ability to obtain and maintain requisite regulatory approvals and to enroll patients in its planned clinical trials, additional interactions with regulatory authorities and expectations regarding future regulatory filings and possible additional approvals for tafasitamab as well as the commercial performance of Monjuvi, MorphoSys' reliance on collaborations with third parties, estimating the commercial potential of its development programs and other risks indicated in the risk factors included in MorphoSys' Annual Report on Form 20-F and other filings with the U.S. Securities and Exchange Commission. Given these uncertainties, the reader is advised not to place any undue reliance on such forward-looking statements. These forward-looking statements speak only as of the date of publication of this document. MorphoSys expressly disclaims any obligation to update any such forward-looking statements in this document to reflect any change in its expectations with regard thereto or any change in events, conditions or circumstances on which any such statement is based or that may affect the likelihood that actual results will differ from those set forth in the forward-looking statements, unless specifically required by law or regulation.

The compounds discussed in this slide presentation are investigational products being developed by MorphoSys and its partners and are not currently approved by the U.S. Food and Drug Administration (FDA), European Medicines Agency (EMA) or any other regulatory authority (except for tafasitamab/Monjuvi® and tafasitamab/Minjuvi® in relapsed or refractory DLBCL). The safety and efficacy of these investigational products have not been established and there is no guarantee any investigational product will be approved by regulatory authorities.

Strategic Oncology Focus with Strong Financial Position

OUR AMBITION

Redefine How Cancer is Treated

PELABRESIB	Become new standard of care in myelofibrosis as combination therapy; expand into other myeloid diseases
Monjuvi®	Sustain second-line DLBCL usage; generate growth in new indications
Tulmimetostat	Cost-effective investigations in solid tumors and lymphomas; pursue partnership opportunities

CASH AVAILABLE TO MID-2026*, COVERING ALL NEAR-TERM CATALYSTS

*Includes cash from recent capital raise, excluding convertible debt repayment (interest and principal)
Monjuvi® (tafasitamab-cxix) is approved under accelerated approval by the U.S. FDA in combination with lenalidomide for the treatment of adult patients with relapsed or refractory DLBCL not otherwise specified, including DLBCL arising from low grade lymphoma, and who are not eligible for autologous stem cell transplant (ASCT); DLBCL, diffuse large B-cell lymphoma; Monjuvi in the first-line DLBCL setting, pelabresib, and tulmimetostat are investigational uses or products and have not yet been evaluated or approved; The development of pelabresib was funded in part by The Leukemia and Lymphoma Society®.

Mid- to Late-Stage Oncology Pipeline Offers Best- and First-in-Class Potential

ASSET	PARTNER	TARGET	DISEASE AREA	PHASE 1	PHASE 2	PHASE 3	MARKET
			r/r DLBCL				MONJUVI® tafasitamab-cxix | 200mg for injection, for intravenous use
Tafasitamab	Incyte	CD19	1L DLBCL (*front*MIND) r/r FL/MZL (*in*MIND) r/r DLBCL (with TTI-622)*				
Pelabresib		BET	1L Myelofibrosis (MANIFEST-2) 1L/2L Myelofibrosis, HR ET (MANIFEST)				
Tulmimetostat		EZH2/ EZH1	Solid tumors/Lymphomas				

Monjuvi® (tafasitamab-cxix) is approved under accelerated approval by the U.S. FDA in combination with lenalidomide for the treatment of adult patients with relapsed or refractory]DLBCL not otherwise specified, including DLBCL arising from low grade lymphoma, and who are not eligible for ASCT
r/r DLBCL, relapsed/refractory diffuse large B-cell lymphoma; r/r FL / MZL, relapsed/refractory follicular lymphoma or marginal zone lymphoma. HR-ET, high risk essential thrombocythemia; 1L, first-line; 2L, second-line; BET, bromodomain and extra-terminal domain; EZH2, enhancer of zeste homolog 2; EZH1, enhancer of zeste homolog 1
*Trial sponsored by Pfizer

World-Class Team Of Experts Universally Driven to Redefine Cancer Care

544
Employees in the U.S. & Germany (as of June 30, 2023)

44%
Leadership Positions Held by Women

61%
Percentage of Female Employees

43
Nationalities Represented

MorphoSys Headquarters | *Munich*


MorphoSys U.S. | *Boston*

01
Pelabresib

Potential to become new standard of care in myelofibrosis as combination therapy and expand into other myeloid diseases

Pelabresib Focus is First-Line Myelofibrosis, with Expansion into Other Myeloid Diseases

MYELOPROLIFERATIVE NEOPLASMS AND ADJACENCIES

PIVOTAL STAGE

MYELOFIBROSIS

- Pelabresib and ruxolitinib improved all four hallmarks of myelofibrosis in MANIFEST-2
- Intend to file for approval in U.S. and Europe in mid-2024

CLINICAL PROOF-OF-CONCEPT STAGE

LOWER-RISK MYELODYSPLASTIC SYNDROMES (MDS)

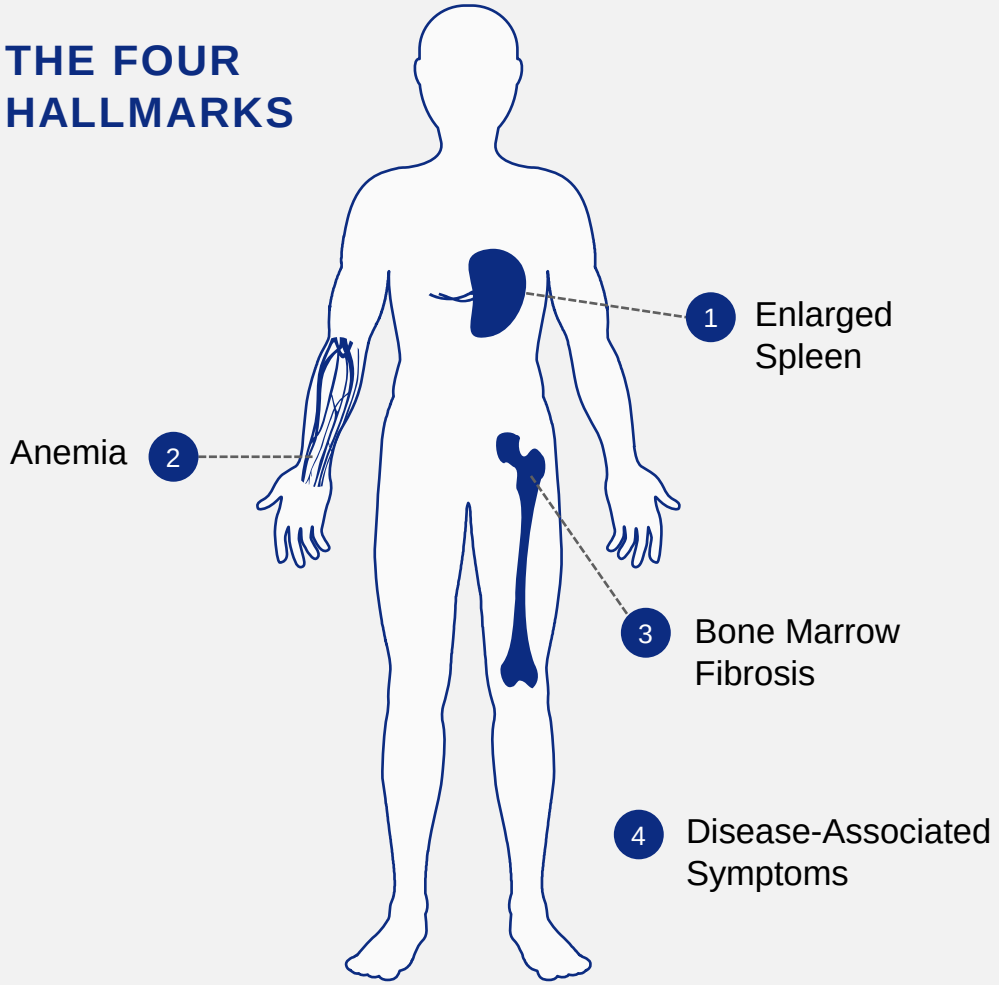
Initiate Phase 2 study

ESSENTIAL THROMBOCYTHEMIA (ET)

Phase 2 proof-of-concept results show potential clinical benefit

No Approved Myelofibrosis Treatments Address All Four Hallmarks of Disease; New Therapies are Critically Needed

THE FOUR HALLMARKS



EPIDEMIOLOGY

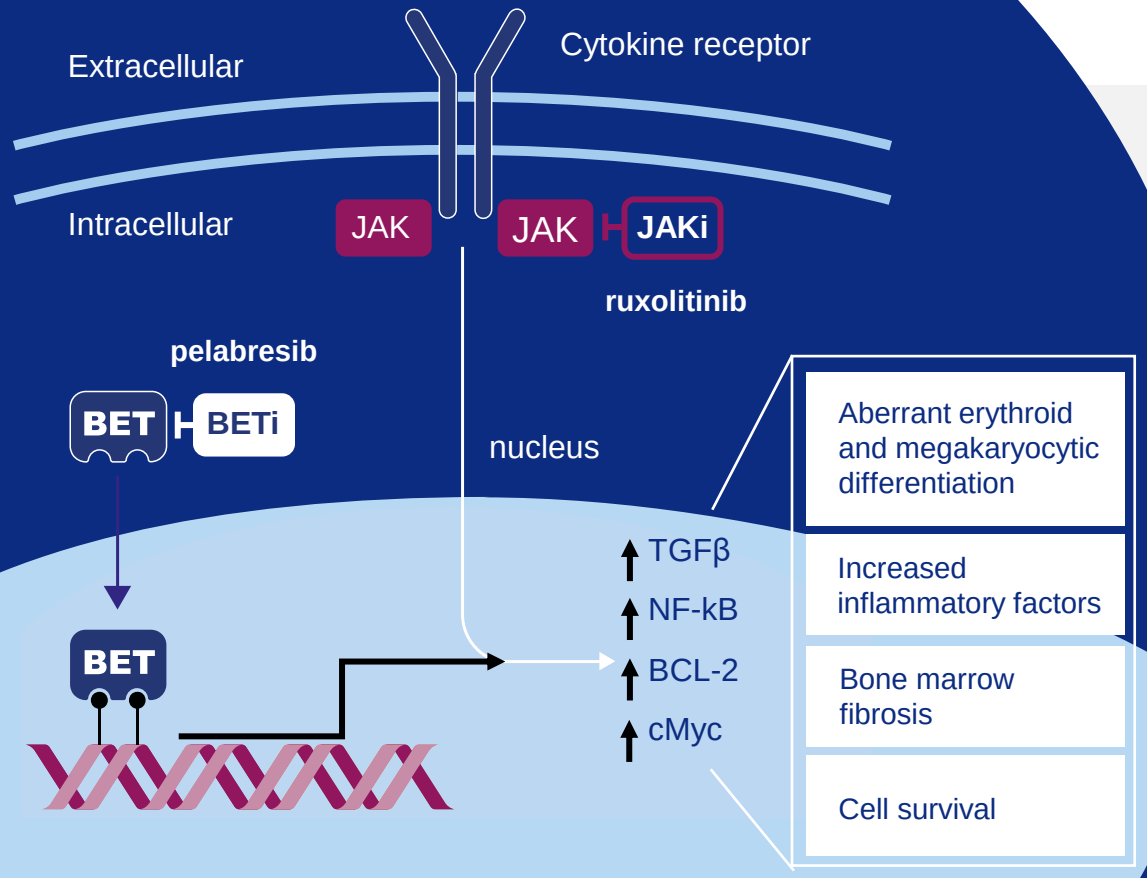
- **~18,000 patients** in the U.S., with **3,200 diagnosed annually**
- **~18,000 patients** in Europe, with **3,400 diagnosed annually**
- **~90%** of patients have intermediate- or high-risk disease at diagnosis, with vast majority in intermediate-risk category

MEDIAN OVERALL SURVIVAL*

- Intermediate-risk**: **~4 – 14.2 years**
- High-risk: **~1.5 years**

*Measured by Dynamic International Prognostic Scoring System (DIPSS) | **Int-1 and Int-2
Harrison C, et al. Expert Rev Hematol 2013; Al-Ali HK, et al. Haematologica 2016; Panda A, et al. Decision Resources Group 2022; Gangat et al. Journal Clin Onc. 2011.

JAK-STAT Pathway and BET Proteins Are Central to Myelofibrosis Pathology



Dysregulation of JAK–STAT pathway and BET proteins lead to the processes implicated in myelofibrosis

Tefferi A, et al. Am J Hematol 2021; Shorstova T, et al. Br J Cancer 2021; Mughal TI, et al. Int J Gen Med 2014; Kleppe M, et al. Cancer Cell 2018; Albrecht BK, et al. J Med Chem 2016; Mascarenhas J, et al. J Clin Oncol 2023; Harrison CN, et al. Future Oncol 2022.

The combination of BET and JAK inhibition:

- Showed broad suppression of the proinflammatory molecules involved in bone marrow fibrosis *in vivo*
- Normalized the balance of precursor red blood cells and precursor platelet-forming cells in the bone marrow *in vivo*

BCL-2, B-cell lymphoma 2; BET, bromodomain and extraterminal domain; CALR, calreticulin; cMyc, cellular Myc oncogene; MPL, Myeloproliferative leukemia virus oncogene; Myc oncogene; JAK, Janus kinase; NF-κB, nuclear factor kappa b; Pol, polymerase; STAT, signal transducer and activator of transcription; TGF, transforming growth factor.

Combining BET inhibition with JAK inhibition represents a potential therapeutic approach in myelofibrosis to change the natural course of the disease

Pelabresib Inhibits BET Proteins, Decreasing the Expression of Genes Related to Blood Cancers

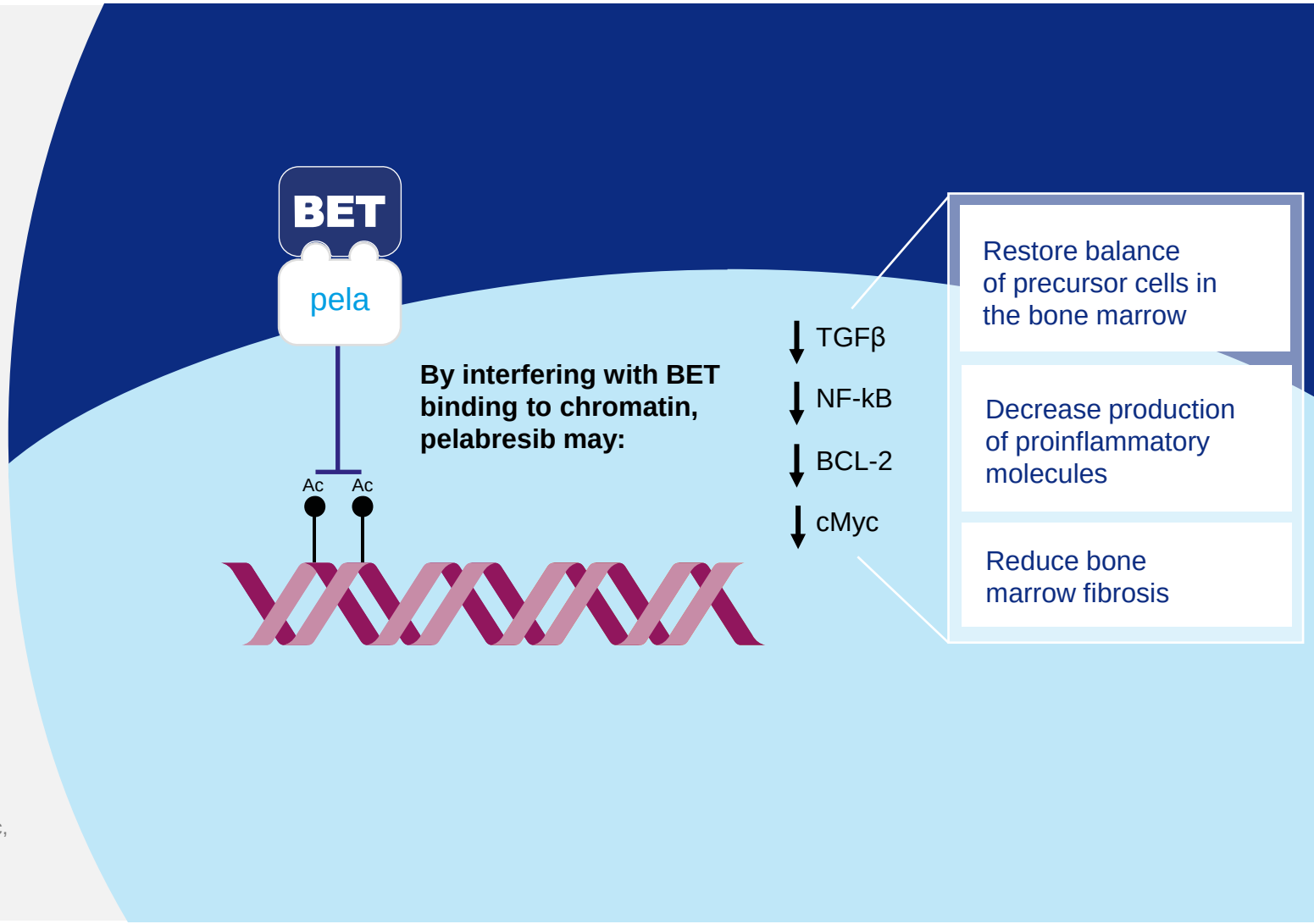
Pelabresib is an investigational oral drug designed to inhibit BET proteins

Helps restore the balance of cells in the bone marrow

Regulates megakaryocyte (hematopoietic cells responsible for the production of blood platelets) differentiation and proliferation

Reduces proinflammatory signals involved in bone marrow fibrosis

Half-life (~15 hours) allows for once-daily oral dosing



Albrecht BK, et al. J Med Chem 2016; Keller P, et al. Hemasphere 2021; Blum KA, et al. Cancer Research Communications 2022; Shi J, Vakoc CR. Mol Cell 2014.

BCL-2, B-cell lymphoma 2; BET, bromodomain and extraterminal domain; cMyc, cellular Myc oncogene; MF, myelofibrosis; NF-κB, nuclear factor kappa b; Pol, polymerase; TGF, transforming growth factor.

Majority of U.S. Physicians View Combination Therapy as the "Way of the Future" in Myelofibrosis

MAJORITY IMPRESSED BY THE IMPROVED EFFICACY OF COMBINATION THERAPY

HESITANT TO UTILIZE (13%)

OPEN TO UTILIZE (87%)

PELABRESIB RANKED AMONG THE HIGHEST IN TOP ATTRIBUTES DRIVING TREATMENT DECISIONS*

IMPRESSIVE EFFICACY
(Spleen Volume Reduction, Symptom Improvement)
Mentioned by ~85% of HCPs

HEMATOLOGIC FUNCTION
(Transfusion Dependency, Hemoglobin Count, Quality of Life)
Mentioned by ~70% of HCPs

LOW RATES OF HEMATOLOGIC ADVERSE EVENTS
(Anemia, Thrombocythemia, Neutropenia)
Mentioned by ~70% of HCPs

*MF Drivers and Barriers Qualitative Market Research, Aug 2023 | N=23 MF treating US Hem Oncs & Med Oncs; Product attributes rated based on Target Product Profile for pelabresib

Pelabresib and Ruxolitinib Combination Offers Potential to Shift Myelofibrosis Treatment Paradigm

All myelofibrosis disease hallmarks were improved over placebo plus ruxolitinib in Phase 3 MANIFEST-2 study

KEY FINDINGS

- Significantly reduced spleen size, nearly doubling SVR35 response rate
- Showed a strong positive trend in reducing symptom burden
- Improved measures of anemia
- Improved bone marrow fibrosis
- Biomarker improvements suggest disease modification
- Safety results consistent with prior clinical trials, with fewer grade ≥3 adverse events compared with placebo plus ruxolitinib

NEXT STEPS

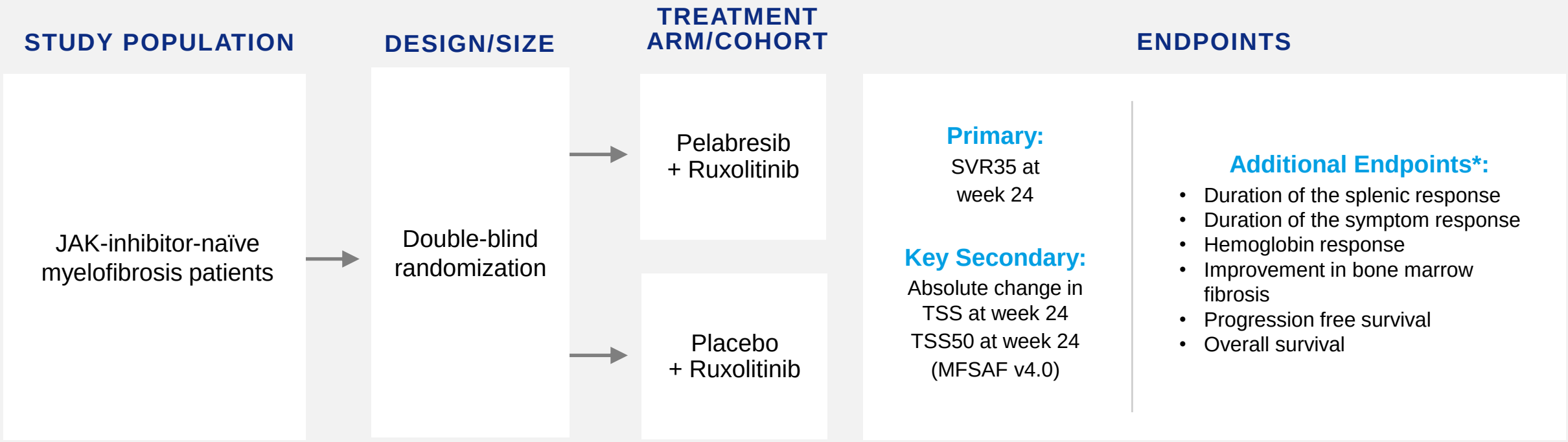
Intend to file for approval in the U.S. and Europe mid-2024

Collect longer-term data, including quality of life and duration of treatment

SVR35, ≥35% reduction in spleen volume
Rampal, R, et.al. ASH 2023. Oral 628. | Data Cut-Off August 31, 2023

Phase 3 MANIFEST-2 Study: One of the Largest Myelofibrosis Trials Ever Conducted

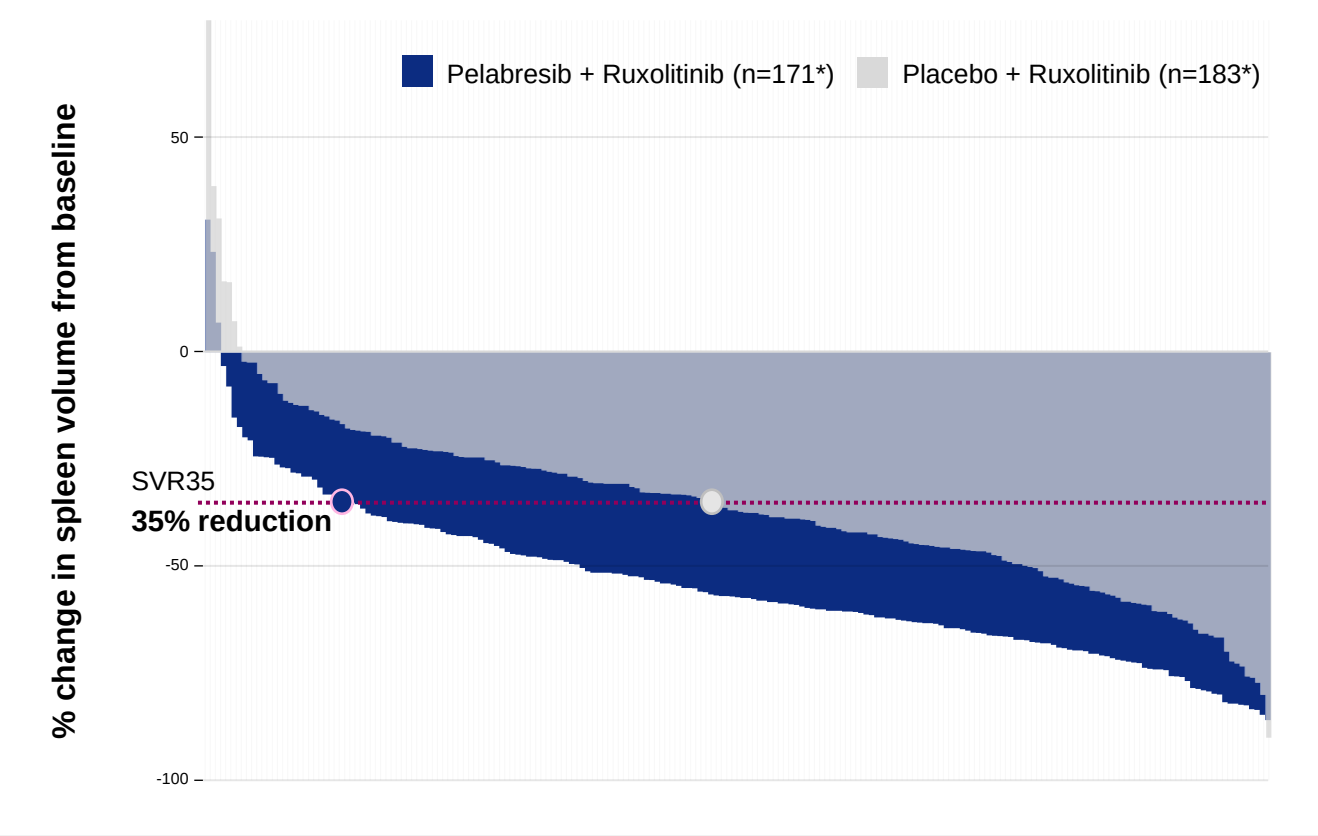
430 *JAK-inhibitor-naïve myelofibrosis patients randomized, representative of the disease population and aligned with NCCN criteria*



SVR35, ≥35% reduction in spleen volume; TSS50, ≥50% reduction in total symptom score; TSS, total symptom score; MFSAF, Myelofibrosis Symptom Assessment Form; NCCN, National Comprehensive Cancer Network
*Only includes sample of additional endpoints being assessed in Phase 3 MANIFEST-2 study

Phase 3 MANIFEST-2: Significantly Reduced Spleen Size at 24 Weeks, Primary Endpoint

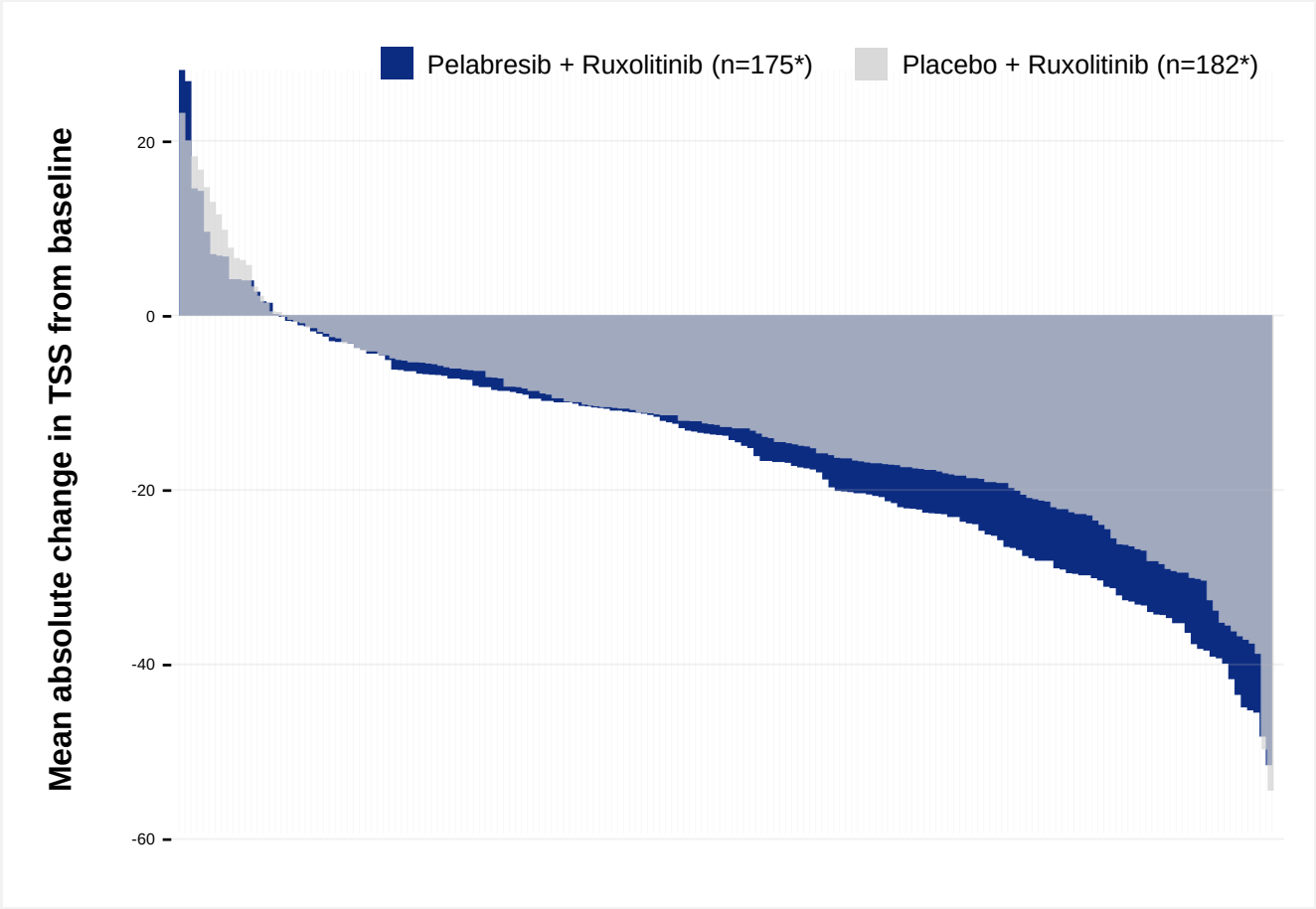
Key finding given the known association between spleen volume reduction and patient survival



ITT POPULATION	Pelabresib + Ruxolitinib (N=214)	Placebo + Ruxolitinib (N=216)	p-value
SVR35 at Week 24	65.9%	35.2%	
Difference† (95% CI)	30.4 (21.6, 39.3)		<0.001
Mean % change in spleen volume at Week 24‡	-50.6 (n=171)	-30.6 (n=183)	
95% CI	-53.2, -48	-33.7, -27.5	

CI, confidence interval; ITT, intent-to-treat; SVR35, ≥35% reduction in spleen volume. Spleen volume assessed by central read.
*Waterfall plots represent patients who have baseline and Week 24 data. †Calculated by stratified Cochran–Mantel–Haenszel test; ‡Patients without Week 24 assessment are considered non-responders.
Rampal, R, et.al. ASH 2023. Oral 628. | Data Cut-Off August 31, 2023

Phase 3 MANIFEST-2: Strong Numerical Improvements in Absolute Change in TSS at 24 Weeks, Key Secondary Endpoint



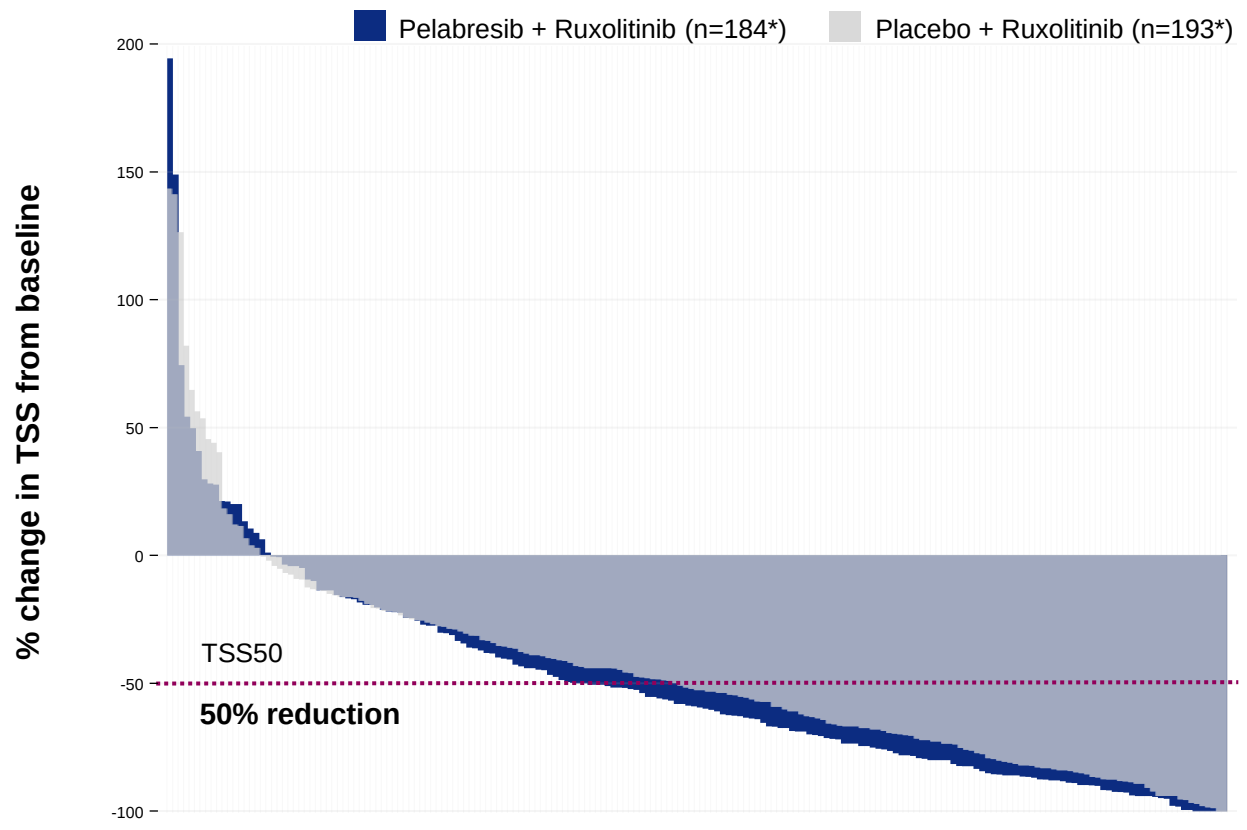
ITT POPULATION	Pelabresib + Ruxolitinib (N=214)	Placebo + Ruxolitinib (N=216)	p-value
TSS change† from baseline at Week 24	-15.99 (Mean Baseline: 28.26)	-14.05 (Mean Baseline: 27.36)	
Mean difference‡ (95% CI)	-1.94 (-3.92, 0.04)		0.0545

ANCOVA, analysis of covariance; CI, confidence interval; ITT, intent-to-treat; TSS, total symptom score.

*Waterfall plots represent patients who have baseline and Week 24 data. †Change from baseline determined by ANCOVA model using Multiple Imputation. ‡Least square mean difference from ANCOVA model using baseline DIPSS, baseline platelet count and baseline spleen volume as factors, and baseline TSS as covariate.

Rampal, R, et.al. ASH 2023. Oral 628. | Data Cut-Off August 31, 2023

Phase 3 MANIFEST-2: Numerically Greater Response Rates in TSS50 at 24 Weeks, Key Secondary Endpoint



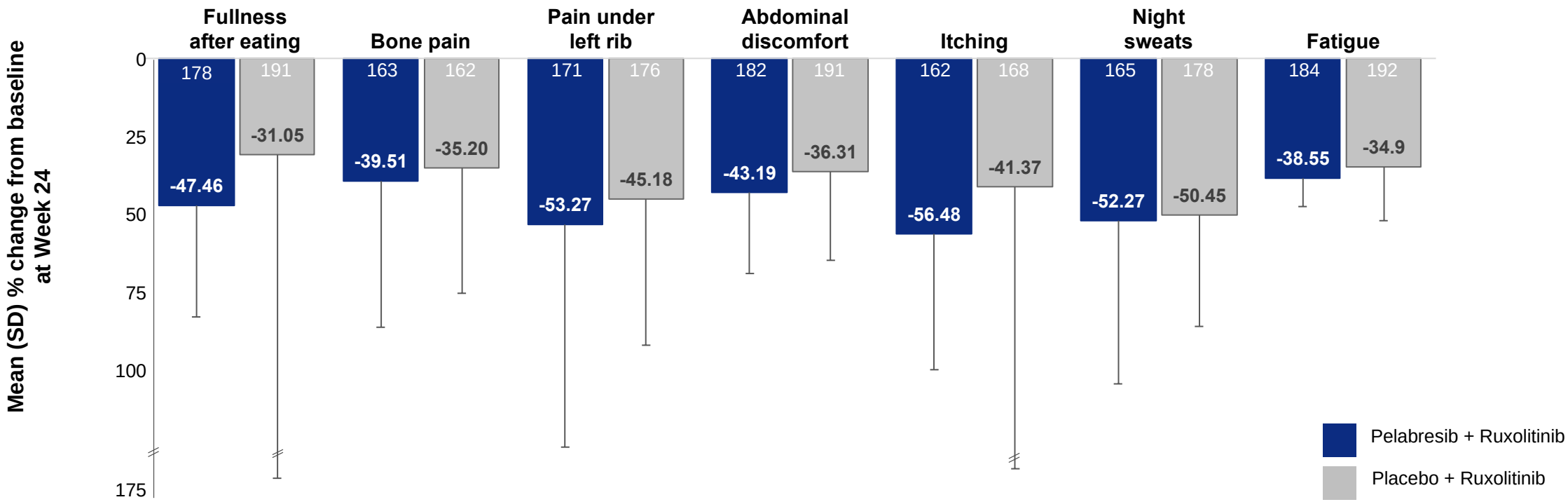
ITT POPULATION	Pelabresib + ruxolitinib (N=214)	Placebo + ruxolitinib (N=216)	p-value
TSS50 at Week 24	52.3%	46.3%	
Difference† (95% CI)	6.0 (-3.5, 15.5)		0.216

CI, confidence interval; ITT, intent-to-treat; TSS, total symptom score; TSS50, ≥50% reduction in total symptom score. Patients are evaluable for TSS50 at Week 24 if they have had Week 24 TSS assessment by the data cutoff date or discontinued without Week 24 assessment at any time.

*Waterfall plots represent patients who have baseline and Week 24 data. †Difference in treatment groups analyzed by stratified Cochran–Mantel–Haenszel test (weighted 95% CI adjusted across strata).

Rampal, R, et.al. ASH 2023. Oral 628. | Data Cut-Off August 31, 2023

Phase 3 MANIFEST-2: Disease-Associated Symptom Benefits Were Observed and Balanced Across all TSS Domains



TSS, total symptom score
Rampal, R, et.al. ASH 2023. Oral 628. | Data Cut-Off August 31, 2023

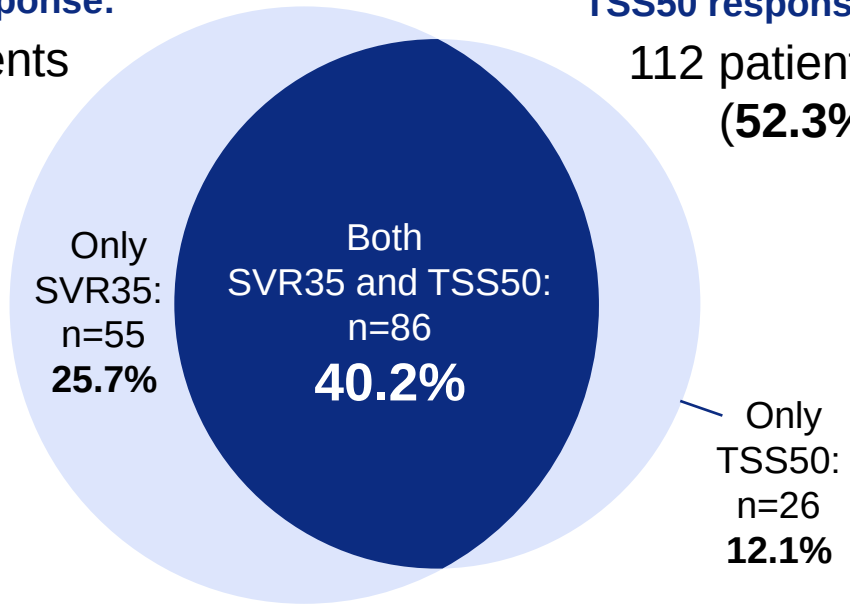
Phase 3 MANIFEST-2: Twofold Increase in Patients Achieving Both SVR35 and TSS50

Dual SVR35 / TSS50 responders at week 24

PELABRESIB + RUXOLITINIB (N=214)

SVR35 response:
141 patients
(**65.9%**)

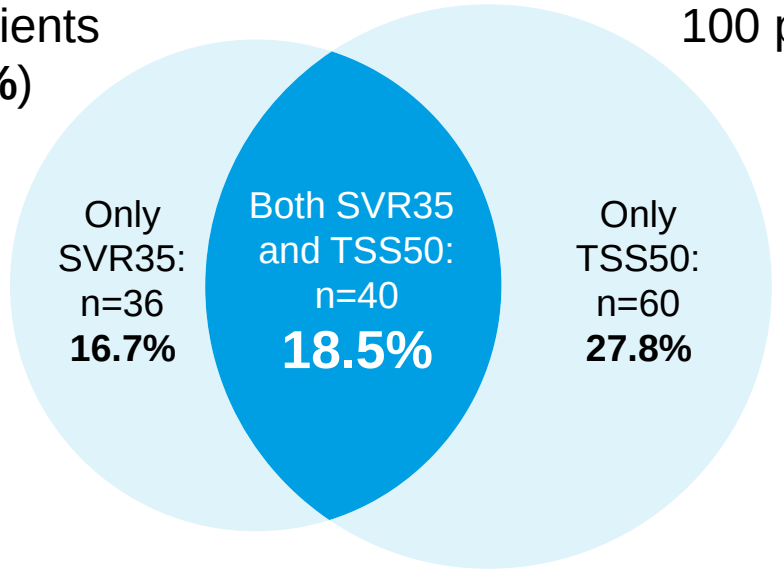
TSS50 response:
112 patients
(**52.3%**)



PLACEBO + RUXOLITINIB (N=216)

SVR35 response:
76 patients
(**35.2%**)

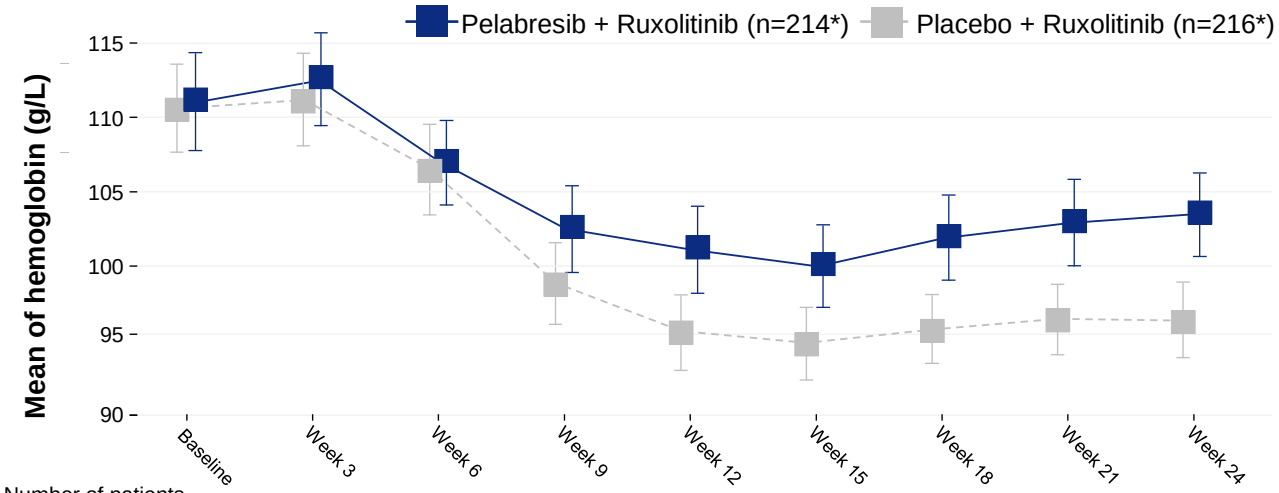
TSS50 response:
100 patients
(**46.3%**)



SVR35, ≥35% reduction in spleen volume; TSS50, ≥50% reduction in total symptom score. Diagrams are not drawn to scale.
Rampal, R, et.al. ASH 2023. Oral 628. | Data Cut-Off August 31, 2023

Phase 3 MANIFEST-2: Improved Multiple Measures of Anemia

More patients achieved hemoglobin response and fewer patients required transfusions versus placebo plus ruxolitinib



Number of patients

	Baseline	Week 3	Week 6	Week 9	Week 12	Week 15	Week 18	Week 21	Week 24
Pelabresib + ruxolitinib	212	204	209	199	193	189	186	185	184
Placebo + ruxolitinib	214	206	211	209	207	205	204	199	196

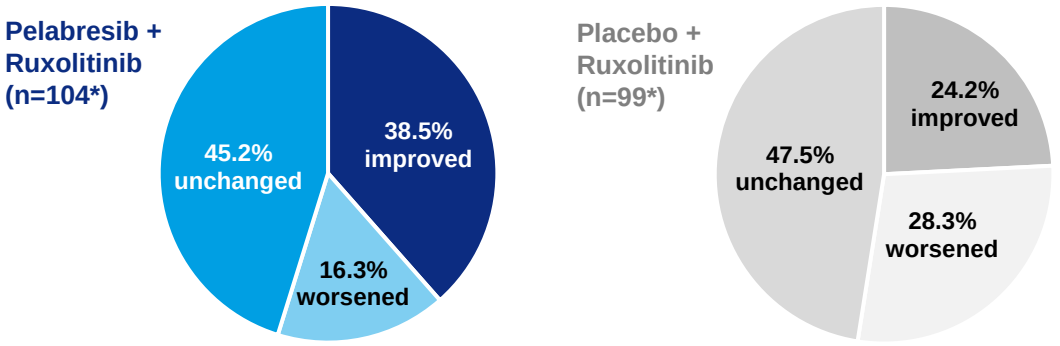
ITT POPULATION	Pelabresib + Ruxolitinib (N=214)	Placebo + Ruxolitinib (N=216)
Hemoglobin response* (95% CI)	9.3% (5.45, 13.25)	5.6% (2.50, 8.61)
Patients requiring RBC transfusion during screening, n (%)	35 (16.4)	25 (11.6)
Patients requiring RBC transfusion during first 24 weeks of study treatment, n (%)	66 (30.8)	89 (41.2)

ITT, intent-to-treat; CI, confidence interval; RBC, red blood cell.
*Hemoglobin response is defined as a ≥1.5 g/dL mean increase in hemoglobin from baseline in the absence of transfusions during the previous 12 weeks. Baseline hemoglobin defined as the last assessment prior to or on Cycle 1 Day 1, regardless of blood transfusions. A similar effect was observed across DIPSS categories.
Rampal, R, et.al. ASH 2023. Oral 628. | Preliminary Analyses from Data Cut-Off: August 31, 2023

Phase 3 MANIFEST-2: Reduction in Bone Marrow Fibrosis and Inflammatory Cytokines

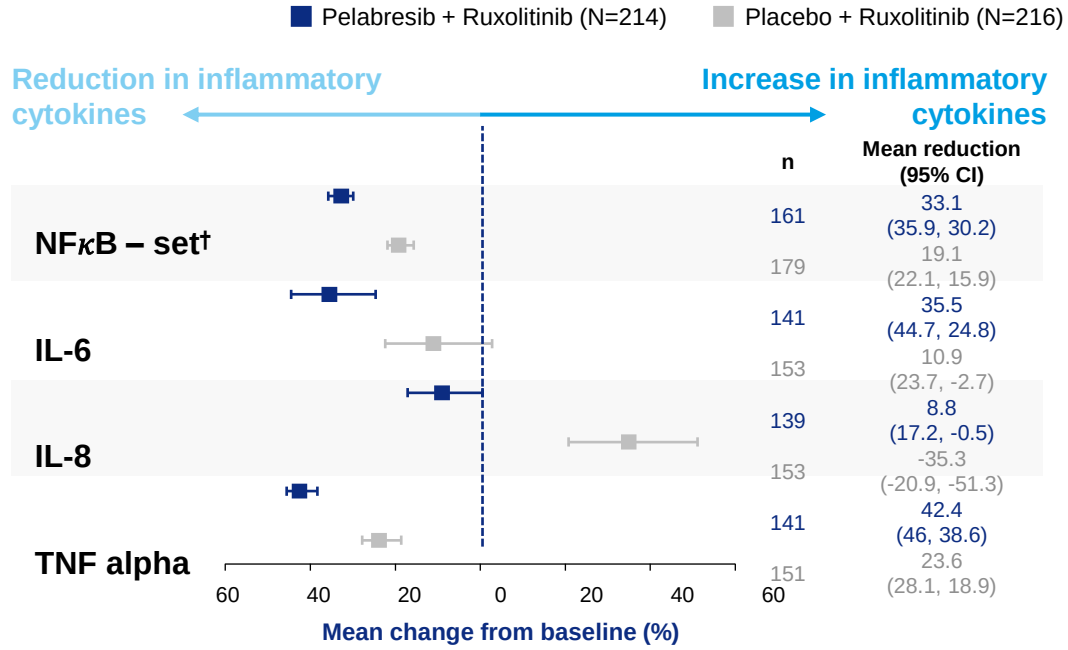
Biomolecular improvements suggest early evidence of a disease-modifying effect

IMPROVEMENT OF RETICULIN FIBROSIS GRADE IN CENTRAL READ BY WEEK 24



	Pelabresib + Ruxolitinib	Placebo + Ruxolitinib	Odds ratio
Worsened ≥1 grade (%)	16.3	28.3	0.47 (0.23-0.92)
Improved ≥1 grade (%)	38.5	24.2	2.09 (1.14-3.93)

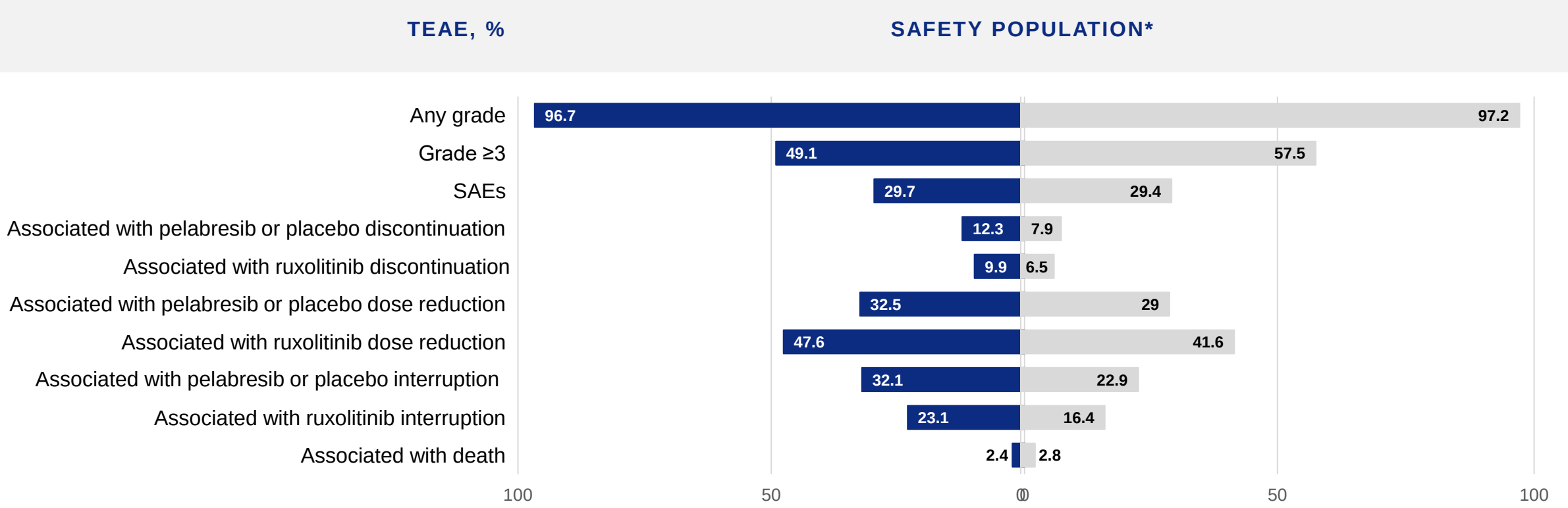
REDUCTION OF INFLAMMATORY CYTOKINES BY WEEK 24



IL-6, interleukin 6; IL-8, interleukin 8; NFκB, Nuclear factor kappa-light-chain-enhancer of activated B cells; TNF, tumor necrosis factor. *n=203 evaluable patients (baseline & C9D1). †NFκB - set includes: B2M, CRP, CD40-L, HEPCIDIN, IL-6, IL-12p40, MIP-1 BETA, MPIF-1, RANTES, TNFR2, TNF alpha, VCAM-1.

Rampal, R, et.al. ASH 2023. Oral 628. | Preliminary Analyses from Data Cut-Off: August 31, 2023

Phase 3 MANIFEST-2: Safety Results Consistent with Prior Clinical Trials, No New Safety Signals Were Observed



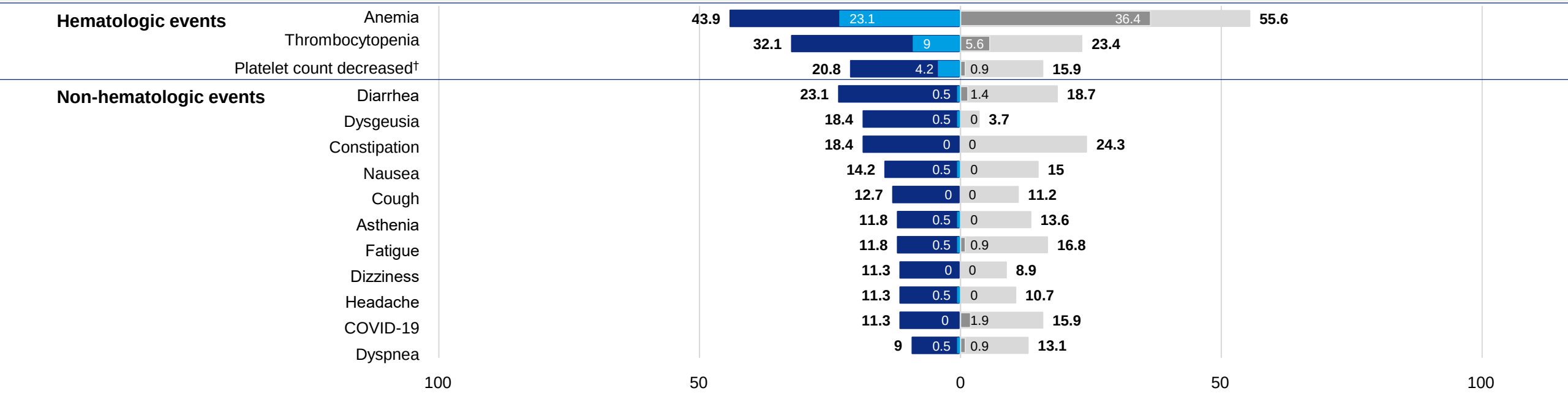
TEAE, treatment-emergent adverse event; SAE, serious adverse event. *Safety population: received at least one dose of study drug. TEAEs are regardless of relationship to study drug. A TEAE for the double-blinded treatment period is defined as an adverse event that has a start date on or after the first dose of the pelabresib/placebo and before 30 days after the last dose of pelabresib/placebo or before the start of alternative (off-study) treatment for myelofibrosis (MF) whichever occurs first.

Rampal, R, et.al. ASH 2023. Oral 628. | Preliminary Analyses from Data Cut-Off: August 31, 2023

Phase 3 MANIFEST-2: Grade ≥3 Adverse Events Were Less Frequent with Pelabresib and Ruxolitinib Combination

TEAES OF ALL GRADES THAT OCCURRED IN ≥10% OF PATIENTS

SAFETY POPULATION*



COVID-19, coronavirus disease 2019; TEAE, treatment-emergent adverse event.
*Safety population: received at least one dose of study drug. †Platelet count decreased was classified under the system organ class of investigation. TEAEs are regardless of relationship to study drug. A TEAE for the double-blinded treatment period is defined as an adverse event that has a start date on or after the first dose of the pelabresib/placebo and before 30 days after the last dose of pelabresib/placebo or before the start of alternative (off-study) treatment for myelofibrosis (MF), whichever occurs first.

Rampal, R, et.al. ASH 2023. Oral 628. | Preliminary Analyses from Data Cut-Off: August 31, 2023

Pelabresib + ruxolitinib (N=212)
% Grade ≥3
Placebo + ruxolitinib (N=214)
% Grade ≥3

Phase 3 MANIFEST-2 Study Outcome Reinforced by Robust, Long-Term Phase 2 MANIFEST Results

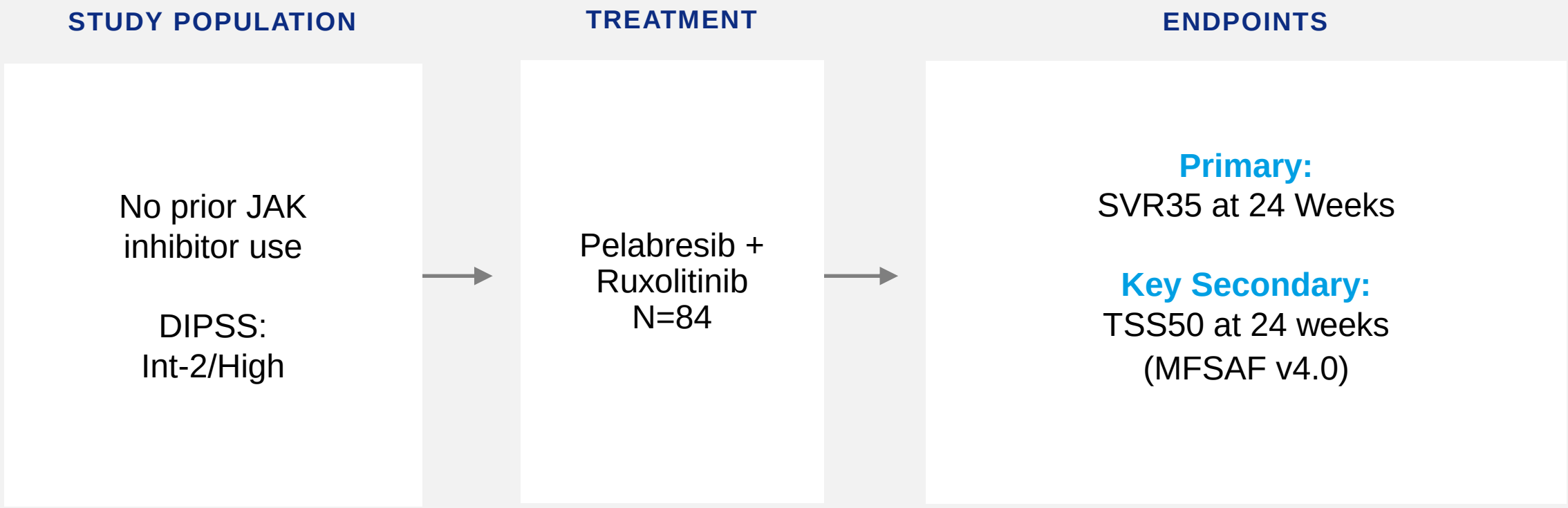
Phase 2 MANIFEST Study: Ongoing, global, open-label investigation of pelabresib in myelofibrosis and essential thrombocythemia

	STUDY POPULATION	TREATMENT		PRIMARY ENDPOINT	SECONDARY ENDPOINTS
ARM 1	**Second-Line Myelofibrosis** • No longer on ruxolitinib • Refractory or intolerant or ineligible	**Pelabresib monotherapy**	TD (1A)	TD → TI	SVR35, TSS50
			Non-TD (1B)	SVR35	TSS50
ARM 2	**Second-Line Myelofibrosis** • 'Add on' to ruxolitinib • Suboptimal response or MF progression	**Pelabresib + Ruxolitinib**	TD (2A)	TD → TI	SVR35, TSS50
			Non-TD (2B)	SVR35	TSS50
ARM 3	**First-Line Myelofibrosis** • No prior JAKi use • DIPSS: Int-2/High	**Pelabresib + Ruxolitinib**		SVR35	TSS50
ARM 4	**Essential Thrombocythemia** • High-risk disease • Resistant or intolerant to HU	**Pelabresib monotherapy**		CHR	TSS50

CHR, complete hematologic response; DIPSS, Dynamic International Prognostic Scoring System; HU, hydroxyurea; Int-2, intermediate-2; JAKi, Janus kinase inhibitor; SVR35, ≥35% reduction in spleen volume at Week 24; TD, transfusion dependent; TI, transfusion independent; TSS50, ≥50% reduction in total symptom score at Week 24.

Harrison C, et al. EHA 2023. Abstract P1027. | Data Cut-Off July 29, 2022

Phase 2 MANIFEST Arm 3: Pelabresib and Ruxolitinib in JAK Inhibitor-Naïve Patients with Myelofibrosis

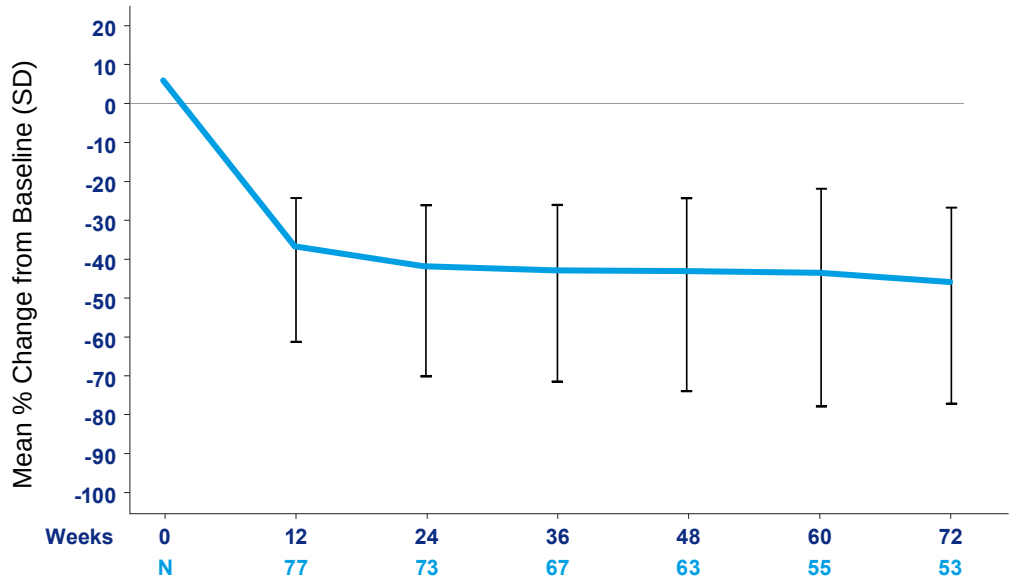


DIPSS, Dynamic International Prognostic Scoring System; Int-2, intermediate-2; SVR35, ≥35% reduction in spleen volume; TSS50, ≥50% reduction in total symptom score; MFSAF, Myelofibrosis Symptom Assessment Form

Harrison C, et al. EHA 2023. Abstract P1027. | Data Cut-Off July 29, 2022

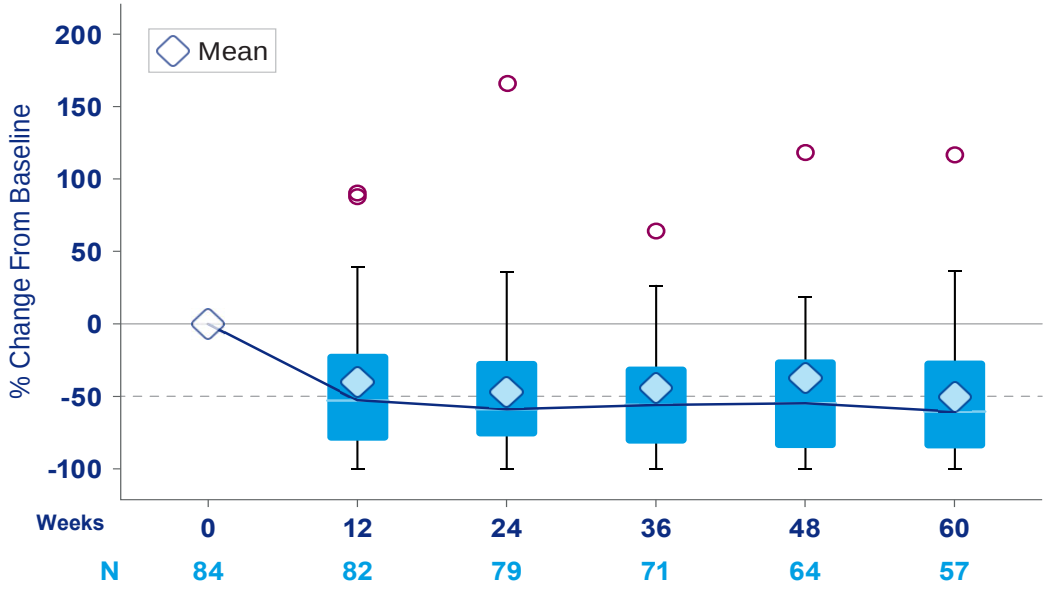
Phase 2 MANIFEST Arm 3: Pelabresib and Ruxolitinib Offers Deep and Durable Improvements in Spleen Volume and Disease-Associated Symptoms

SPLEEN VOLUME CHANGE OVER TIME



SVR35 AT WK 24: 68% (57/84)

TOTAL SYMPTOM SCORE CHANGE OVER TIME



TSS50 AT WK 24: 56% (46/82)

Harrison C, et al. EHA 2023. Abstract P1027. | Data Cut-Off July 29, 2022

Phase 2 MANIFEST Arm 4: Pelabresib Monotherapy in Patients with High-Risk Essential Thrombocythemia

Data underscore potential clinical benefit of pelabresib in myeloid diseases beyond myelofibrosis

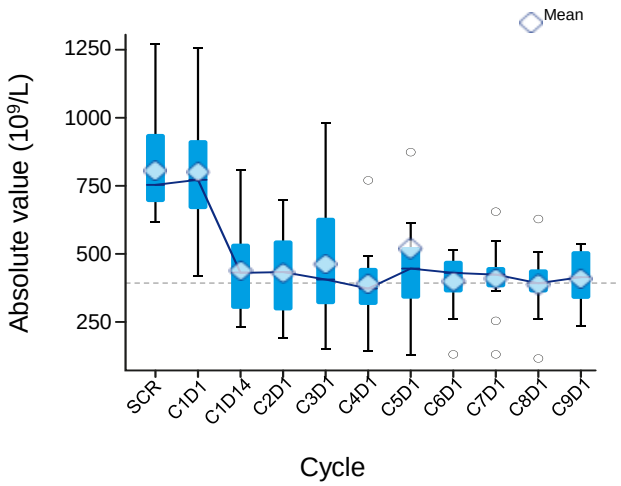
STUDY POPULATION	DESIGN/SIZE	ENDPOINTS
High-risk essential thrombocythemia Refractory or intolerant to hydroxyurea* ≥ two symptoms average score ≥3/ TSS ≥15 Platelets >600 × 10^9/L	Pelabresib monotherapy N=21	**Primary:** Complete hematologic response (confirmed – CHR) **Secondary:** Partial hematologic response (confirmed – PHR) Symptom improvement (MPN-SAF)

Complete Hematologic Response (CHR): Normal platelet and white blood cell count with these labs confirmed after 3 weeks, and a normal spleen size
Partial Hematologic Response (PHR): Platelets 400 – 600 and normal white blood cell count with these labs confirmed after 3 weeks
Hematologic Response is confirmed, when conditions are met in two consecutive cycles; unconfirmed, when conditions are met in one cycle but not in the next cycle
MPN-SAF, Myeloproliferative Neoplasm Symptom Assessment Form; TSS, total symptom score
Passamonti F, et al. EHA 2023. S168
*Refractory or intolerant criteria, as per Barosi, et al. 2007.

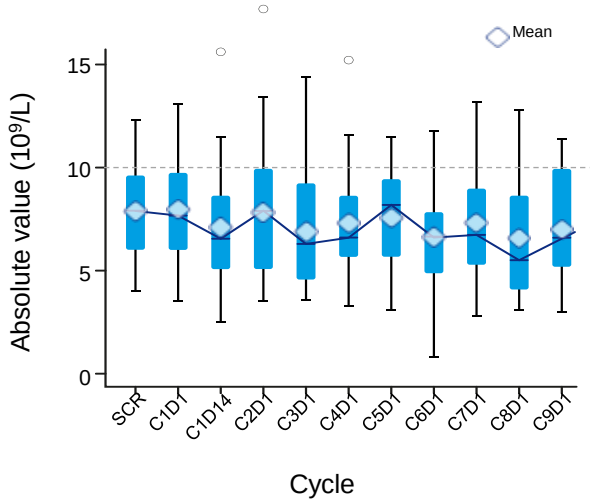
Phase 2 MANIFEST Arm 4: 60% of Essential Thrombocythemia Patients Had Confirmed Complete or Partial Hematologic Response at Any Time

Pelabresib monotherapy normalized platelet count over time without causing anemia or thrombocytopenia

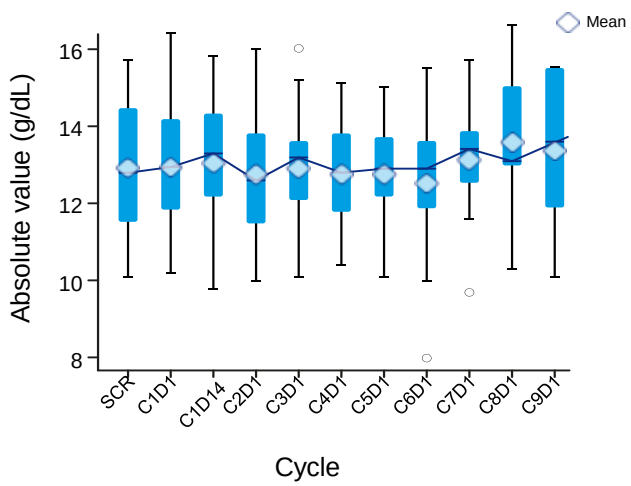
PLATELETS OVER TIME



WHITE BLOOD CELL OVER TIME



HEMOGLOBIN OVER TIME



CHR or PHR (Confirmed)

60%

(12/20)

CHR or PHR (Unconfirmed)

90%

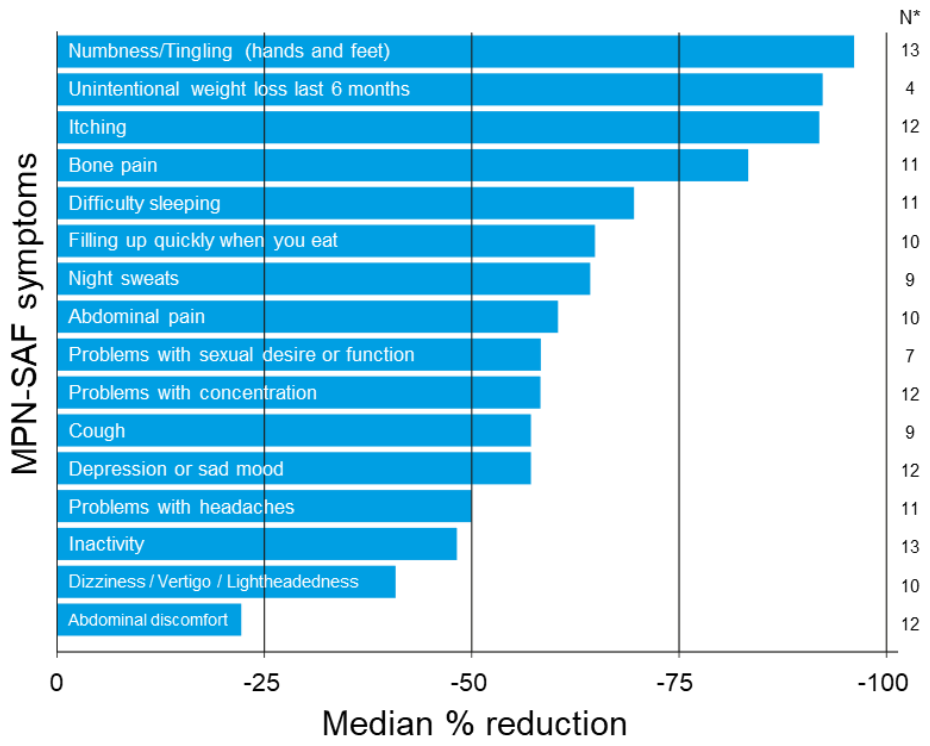
(18/20)

The most common nonhematologic adverse events were nausea, diarrhea and dysgeusia. Hemorrhagic or thromboembolic events were reported in 30% of patients. No grade 4 events or higher were reported.

Complete Hematologic Response (CHR): Normal platelet and white blood cell count with these labs confirmed after 3 weeks, and a normal spleen size
Partial Hematologic Response (PHR): Platelets 400 – 600 and normal white blood cell count with these labs confirmed after 3 weeks
Passamonti F, et al. EHA 2023. Abstract S168. | Data Cut-Off July 29, 2022

Phase 2 MANIFEST Arm 4: Symptom Reduction in Essential Thrombocythemia Patients Observed Across All MPN-SAF Domains

BEST PERCENTAGE REDUCTION IN MPN-SAF SYMPTOMS



One-half of patients had ≥50% reduction in total symptom score from baseline at any time

N=14*	MPN-SAF SYMPTOMS
TSS50 at any time	50% (7/14)
Median % TSS reduction at Week 12	-31%

*Patients with non-missing and nonzero baseline symptom score.

TSS, total symptom score assessed based on MPN-SAF; TSS50, ≥50% reduction in total symptom score from baseline.

MPN-SAF, Myeloproliferative Neoplasm Symptom Assessment Form

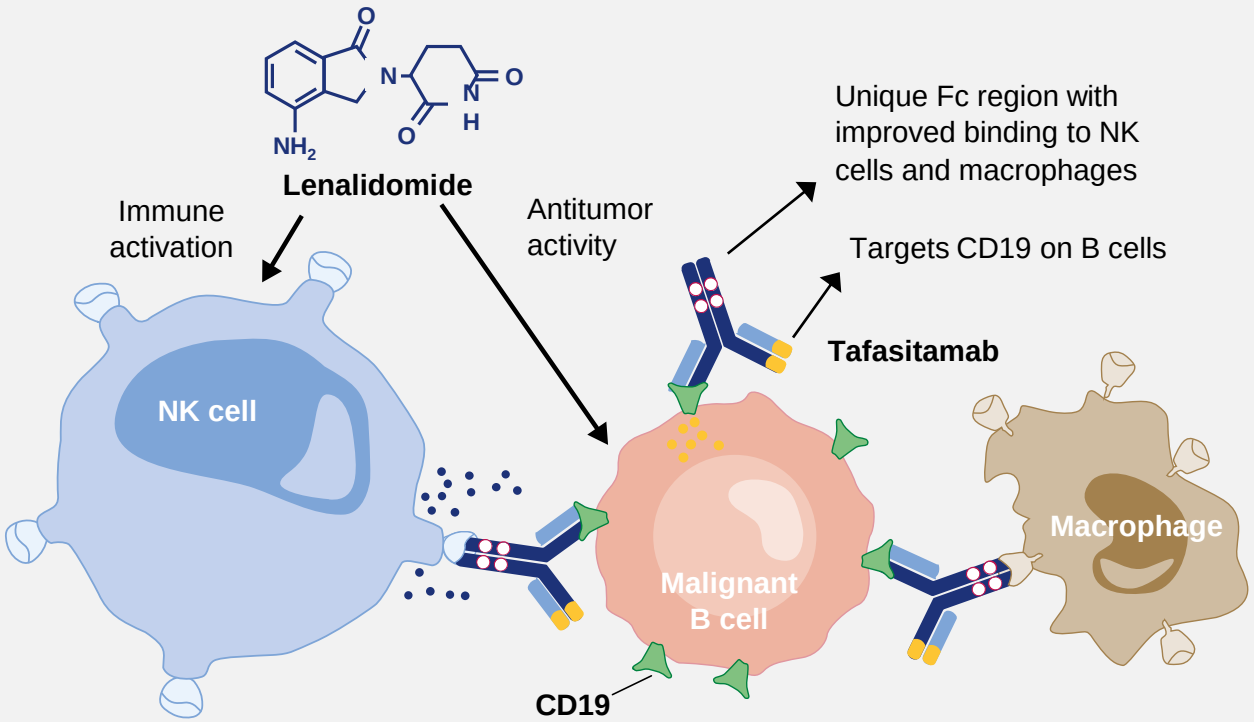
Fever not depicted in the figure due to zero baseline.

Passamonti F, et al. EHA 2023. Abstract S168. | Data Cut-Off July 29, 2022

02
Monjuvi® (tafasitamab-cxix)

Address DLBCL patient needs in relapsed/refractory setting, with potential for expansion into new indications

Tafasitamab Acts Synergistically with Lenalidomide To Attack Malignant B Cells



Tafasitamab and lenalidomide both enhance the immune response against cancer:

- **Tafasitamab** targets CD19, which is found on most types of B cell malignancies, including DLBCL, and has increased ability to bind to NK cells and macrophages. Tafasitamab works through direct cytotoxicity, NK cell-mediated ADCC and macrophage-mediated ADCP.
- In addition to direct cytotoxicity, **lenalidomide** increases NK cell numbers and activity.

ADCC, antibody-dependent cell cytotoxicity; ADCP, antibody-dependent cell phagocytosis; CD19, cluster of differentiation 19; DLBCL, diffuse large B-cell lymphoma; NK, natural killer

Tafasitamab in combination with lenalidomide may enhance anti-tumor activity through the synergistic activation of NK cells (both) and macrophages (tafasitamab)

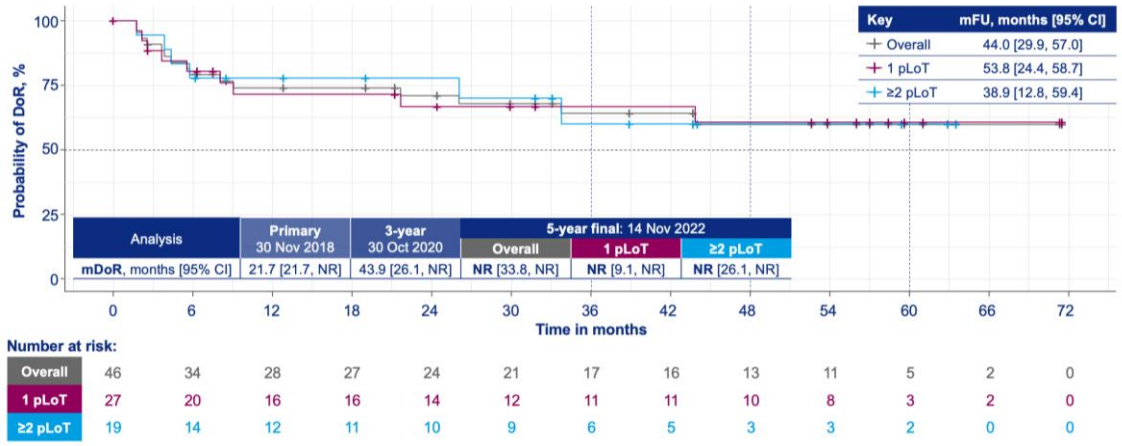
NK cells and macrophages are important in ADCC and ADCP, respectively

Scheuermann RH, et al. Leuk Lymphoma 1995; Otero DC, et al. J Immunol, 2003; Wang K, et al. Exp Hematol Oncol 2012; Horna P, et al. Blood 2019; Duell J, et al. Leuk Lymphoma 2022; Pierce S, et al. Front Cell Infect Microbiol 2020; Weiskopf K, et al. MAbs 2015; Zahavi, et al. Antib Ther 2018; MONJUVI Prescribing Information. MorphoSys US, Inc; Horton HM, et al. Cancer Res 2008; Patra M, et al. EHA 2020, Abstract EP1343; Awan FT, et al. Blood 2010; Witzig TE, et al. Ann Oncol 2015; Salles G, et al. Lancet Oncol. 2020.

Tafasitamab Long-Term Data Shows Prolonged, Durable Responses and Overall Survival Benefit in Relapsed/Refractory DLBCL

*40% of patients receiving tafasitamab and lenalidomide combination were alive at five years**

Duration of Response at 5-Year Follow-up



Overall Survival at 5-Year Follow-up

At the data cut-off (Nov. 14, 2022), for the full analysis set, the overall response rate was 57.5% (95% CI = 45.9, 68.5), and a complete response was observed in 41.2% of patients (95% CI = 30.4, 51.6; n = 33). The most common adverse events with combination therapy were neutropenia (incidence per person per year, all-grade/grade ≥3: 3.79/2.09) and thrombocytopenia (1.52/0.52), which declined after patients switched to monotherapy (all-grade/grade ≥3: 1.09/0.70 and 0.17/0.06, respectively, in the first two years of monotherapy). Neutropenia and diarrhea were the most common adverse events in the first two years of monotherapy.

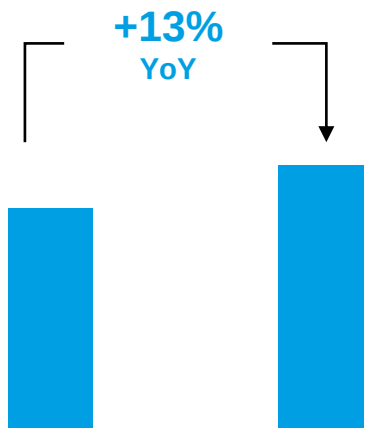
*Based on Kaplan-Meier estimate, which is being explored in further studies
OS data should be interpreted in the context of a single-arm study
DLBCL, diffuse large B-cell lymphoma; mFU, median follow-up; mOS, median OS; NR, not reached; OS, overall survival; pLoT, prior line of therapy
Duell J, et al. AACR 2023. Abstract 9810

Monjuvi® Net Sales in Relapsed/Refractory DLBCL Setting on Track with 2023 Guidance

Only FDA-approved, out-patient, in-practice immunotherapy for 2L+ adult NTE DLBCL in combination with lenalidomide

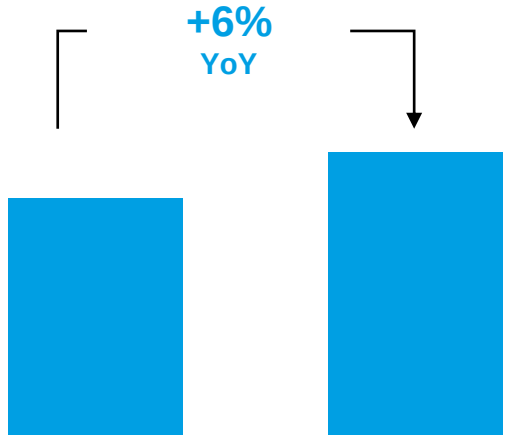
FY 2022 U.S. SALES

$89.4M



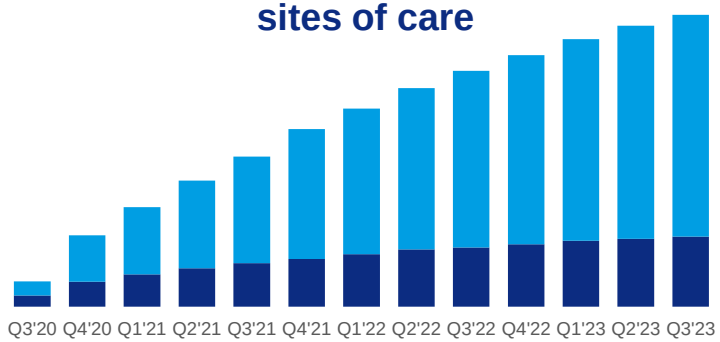
FIRST NINE MONTHS 2023 U.S. SALES

$67.8M



SITES OF CARE GROWTH

1,655
sites of care



76% Community

24% Academic

Monjuvi® (tafasitamab-cxix) is approved under accelerated approval by the U.S. FDA in combination with lenalidomide for the treatment of adult patients with relapsed or refractory DLBCL not otherwise specified, including DLBCL arising from low grade lymphoma, and who are not eligible for ASCT based on the one-year primary analysis of the Phase 2 L-MIND study
DLBCL, diffuse large B-cell lymphoma; NTE, non-transplant eligible

Phase 3 *front*MIND Study: Tafasitamab Offers Largest Potential Upside in the First-Line DLBCL Setting

INCIDENCE

30,000 newly diagnosed DLBCL patients in U.S. annually

MEDICAL NEED

50% of **high-risk DLBCL patients (IPI 3-5)** are not cured with R-CHOP

PHASE 3 *front*MIND STUDY
TOPLINE READOUT: 2H 2025

STUDY POPULATION

Previously untreated high-intermediate and high-risk (IPI 3-5) DLBCL and HGBCL patients

PATIENTS RANDOMIZED

899

Double-blind randomization

TREATMENT ARM/ COHORT

Tafasitamab + Lenalidomide + R-CHOP

vs.

Placebo + R-CHOP

ENDPOINTS

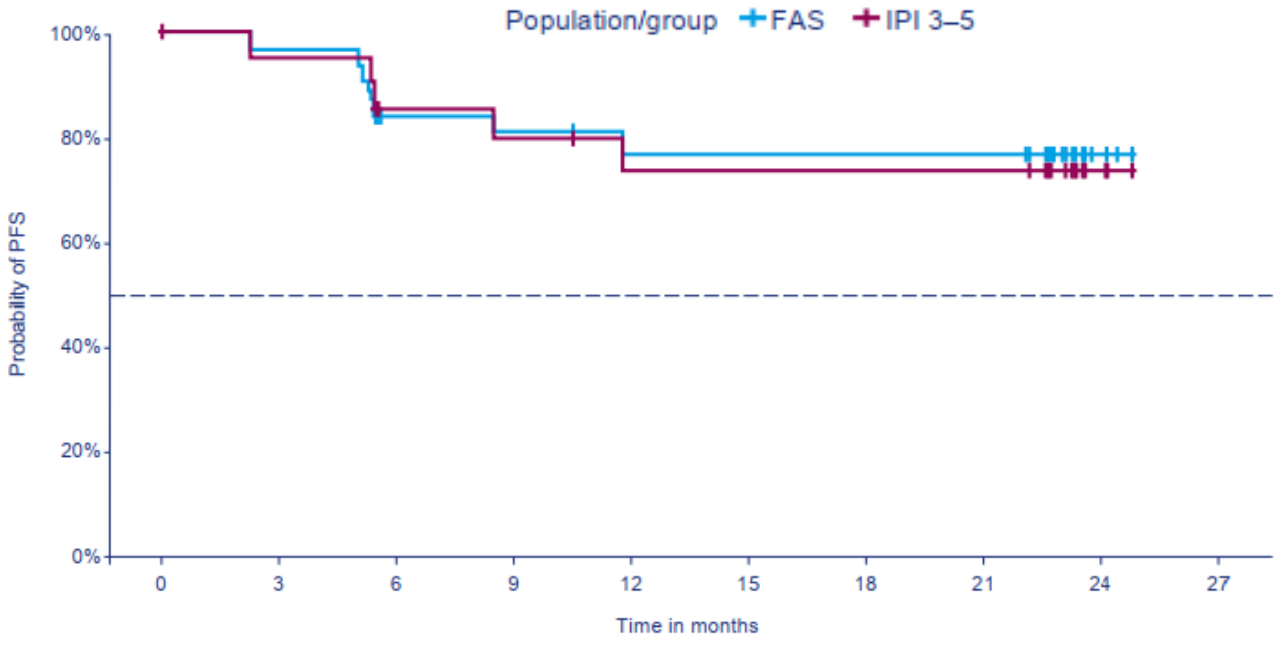
Primary:
PFS

Key Secondary:
EFS, OS

DLBCL, diffuse large B-cell lymphoma; HGBCL; High-grade B-cell lymphoma; R-CHOP, rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone; IPI, International Prognostic Index; PFS, progression-free survival; EFS, event-free survival; OS, overall survival

Susanibar-Adaniya S, et al. Am J Hematol 2021.

Phase 1b *first*MIND Study: Emphasizes Potential of Tafasitamab in First-Line DLBCL



FAS, full analysis set; IPI, International Prognostic Index; L, lenalidomide; PFS, progression-free survival; R-CHOP, rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone; T, tafasitamab.

Efficacy in patients with more severe disease (IPI 3-5; n=22) was comparable to that of the total treatment arm cohort; No new safety signals identified

94% of patients are alive after 24 months

Nowakowski G, et al. ASH 2022. Abstract 1619

The most common hematological treatment emergent adverse events (TEAEs) in patients treated with tafasitamab, lenalidomide and R-CHOP were neutropenia (84.8%), anemia (60.6%), thrombocytopenia (42.4%) and leukopenia (27.3%).

Non-hematological TEAEs were well balanced and were mostly grades 1 and 2. No unexpected toxicities or new safety signals were identified in the final analysis

PFS should be interpreted in the context of a single-arm trial

Phase 3 *in*MIND Study: Further Opportunity to Broaden Tafasitamab Use in Additional Indolent Lymphoma Indications

INCIDENCE

14,200 newly diagnosed FL patients in U.S. annually

MEDICAL NEED

80% of **FL patients** relapse on first-line therapies*

PHASE 3 *in*MIND STUDY
TOPLINE READOUT: 2H 2024

STUDY POPULATION

r/r FL
Grade 1 to 3a
r/r MZL

PATIENTS RANDOMIZED

654

Double-blind randomization

TREATMENT ARM/ COHORT

Tafasitamab + Lenalidomide + Rituximab

vs.

Placebo + Lenalidomide + Rituximab

ENDPOINTS

Primary:
PFS in FL

Key Secondary:
PFS in FL and MZL
PET-CR rate in FL
OS in FL

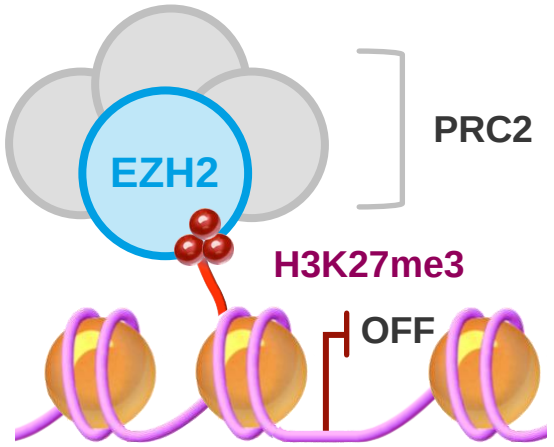
*Patients who receive drug. therapy in the first-line setting and whose disease has not transformed into DLBCL
R/R, relapsed/refractory; FL, follicular lymphoma; MZL, marginal zone lymphoma; PFS, progression-free survival; PET, positron emission tomography; CR, complete response; OS, overall survival
Markanda PS, et al. Decision Resources Group 2023

03
Tulmimetostat

Demonstrate potential in broad array of advanced solid tumors and lymphomas, pursue partnership opportunities

EZH2 Has a Broad Role in Tumor Biology

POLYCOMB REPRESSIVE COMPLEX 2 (PRC2)



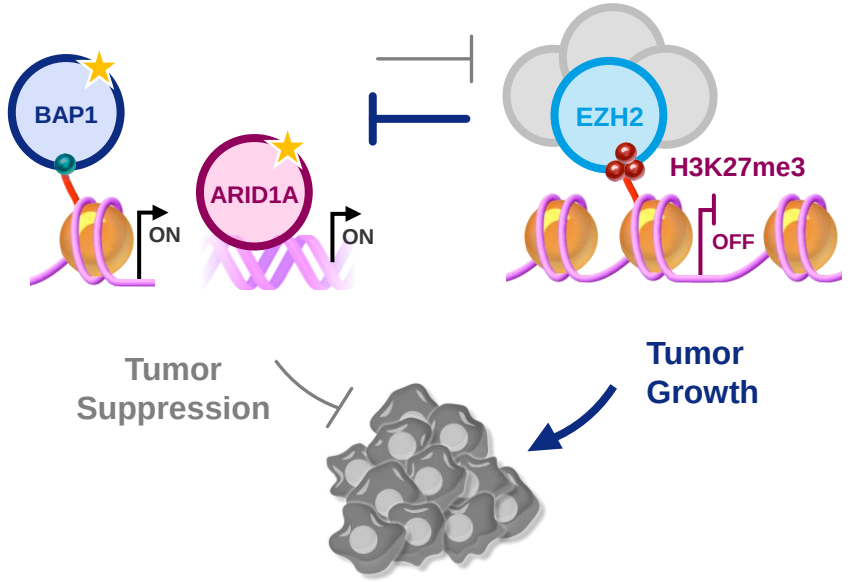
EZH2 trimethylates histone H3 at **lysine 27** (H3K27me3) and **suppresses transcription**

BROAD IMPLICATIONS IN CANCER

- Activating mutations
- Oncogenic driver synergy
- Synthetic lethal relationships
- Drug resistance
- Tumor immunity

SYNTHETIC LETHAL INTERACTIONS BY EZH2 INHIBITION

ACTIVATION VS. REPRESSION



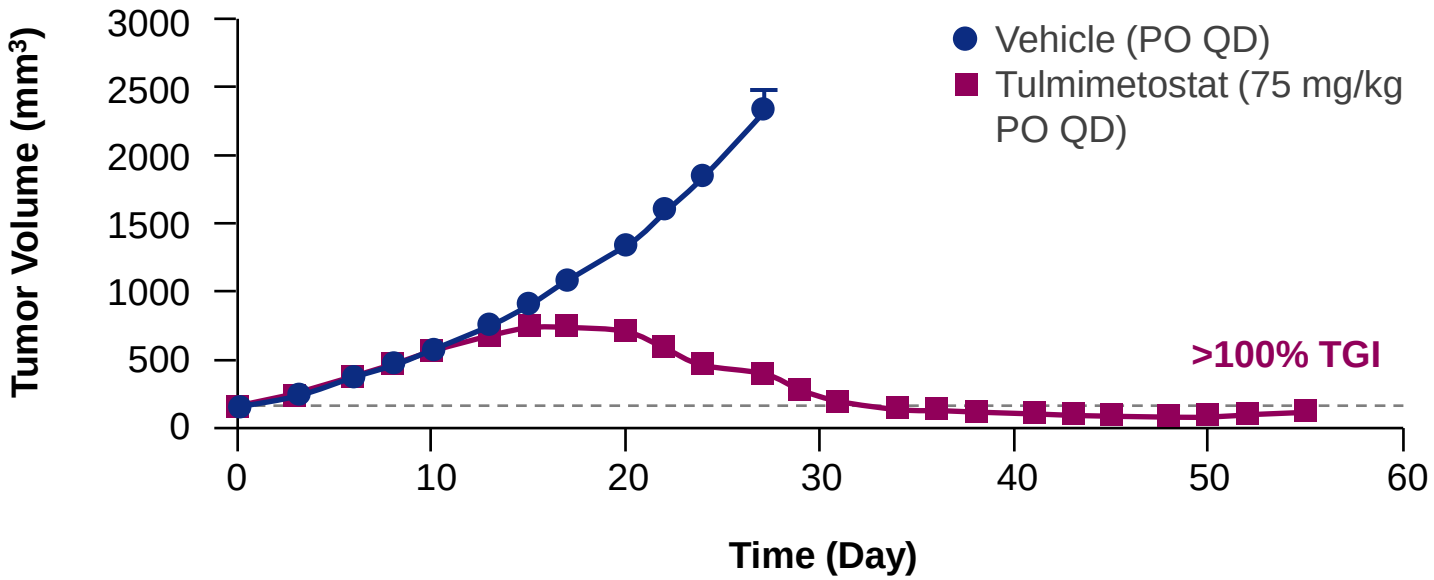
Tulmimetostat is a Next-Generation Dual EZH2/EZH1 Inhibitor Offering Potential First- and Best-in-Class Opportunities

TULMIMETOSTAT VS. 1ST GEN EZH2I

Tulmimetostat

- Increased **potency**
- Longer **residence time**
- **No evidence of reduced exposure** due to induced metabolism
- **Enhanced physicochemical properties**

HT1376 ARID1A MUTANT BLADDER CANCER XENOGRAFT MODEL



EED, embryonic ectoderm development protein; EZH2, enhancer of zeste homolog 2; PO, per os (by mouth, oral); QD, quaque die (once daily); ARID1A, AT-rich interacting domain containing protein 1A
Lakhani N, et al. ASCO 2021. Abstract 3104.

Tulmimetostat showed superior tumor reduction compared with the vehicle in several *in vivo* tumor models

Phase 1/2 Study Investigating Tulmimetostat Monotherapy in Heavily Pretreated Patients with Advanced Cancers

COMPLETED PHASE 1: ESCALATION

Advanced Tumor

RP2D
Tulmimetostat
Monotherapy

Partial responses in unselected heavily pre-treated patients with mesothelioma and endometrial cancer

PHASE 2: TWO-STAGED EXPANSION

Disease-Specific Cohorts

M1	Tumor Agnostic Solid Cancers (*ARID1A* mutant)	**M4**	Lymphoma (either B-cell or T-cell histology, EZH2 mutant and wildtype)** *Biomarker selected for DLBCL*
M2	Ovarian Clear Cell Carcinoma (*ARID1A* mutant)	**M5**	Pleural or Peritoneal Mesothelioma (*BAP1* loss)
M3	Endometrial Carcinoma (*ARID1A* mutant)	**M6**	Metastatic Castration Resistant Prostate Cancer

Biomarker selected cohort

Not biomarker defined

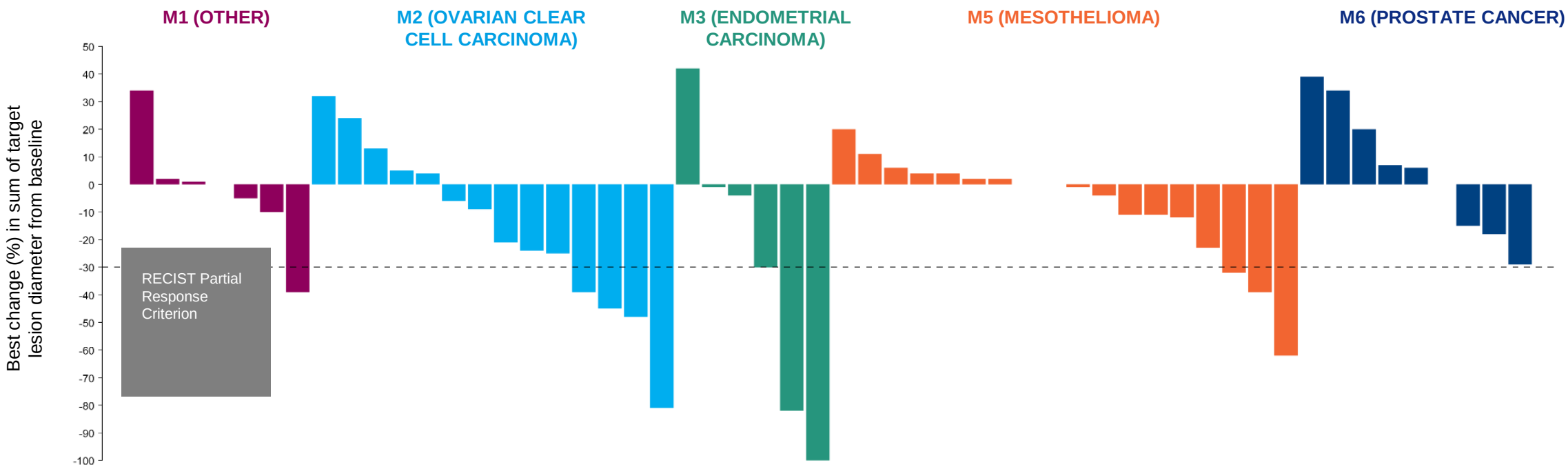
***Cohort M4: Enrolled ~20 patients including PTCL and DLBCL*

Phase 2 includes heavily pre-treated patients and, in several cohorts, pre-selected patients based on potentially relevant biomarkers

EZH2, enhancer of zeste homolog 2; ARID1A, AT-rich interacting domain containing protein 1A; RP2D, recommended Phase 2 dose, PTCL, peripheral T-cell lymphoma; DLBCL, diffuse large B-cell lymphoma
Lakhani N, et al. ASCO 2021. Abstract 3104.

Tulmimetostat Shows Tumor Reduction and Disease Stabilization Across All Solid Tumor Cohorts

BEST OBSERVED CHANGE IN SUM OF DIAMETER PER PATIENT IN SOLID TUMOR COHORTS

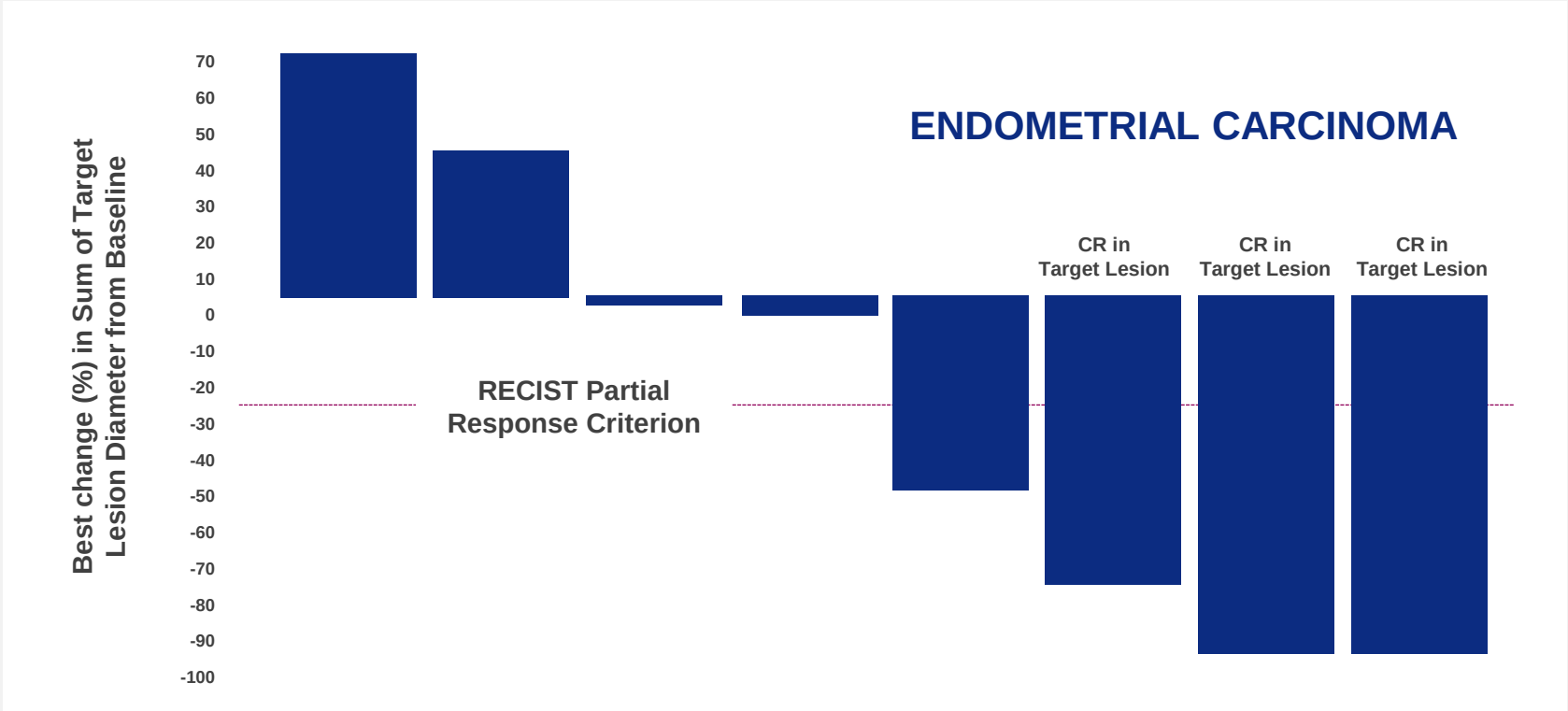


RECIST, Response Evaluation Criteria in Solid Tumors
Drescher C, et al. ASCO 2023. Abstract 3094. | Data Cut-Off February 14, 2023

FDA Grants Fast Track Designation for Tulmimetostat in Endometrial Cancer

Tulmimetostat follows pelabresib (2018) and tafasitamab (2014) as the company's third clinical program to receive Fast Track designation

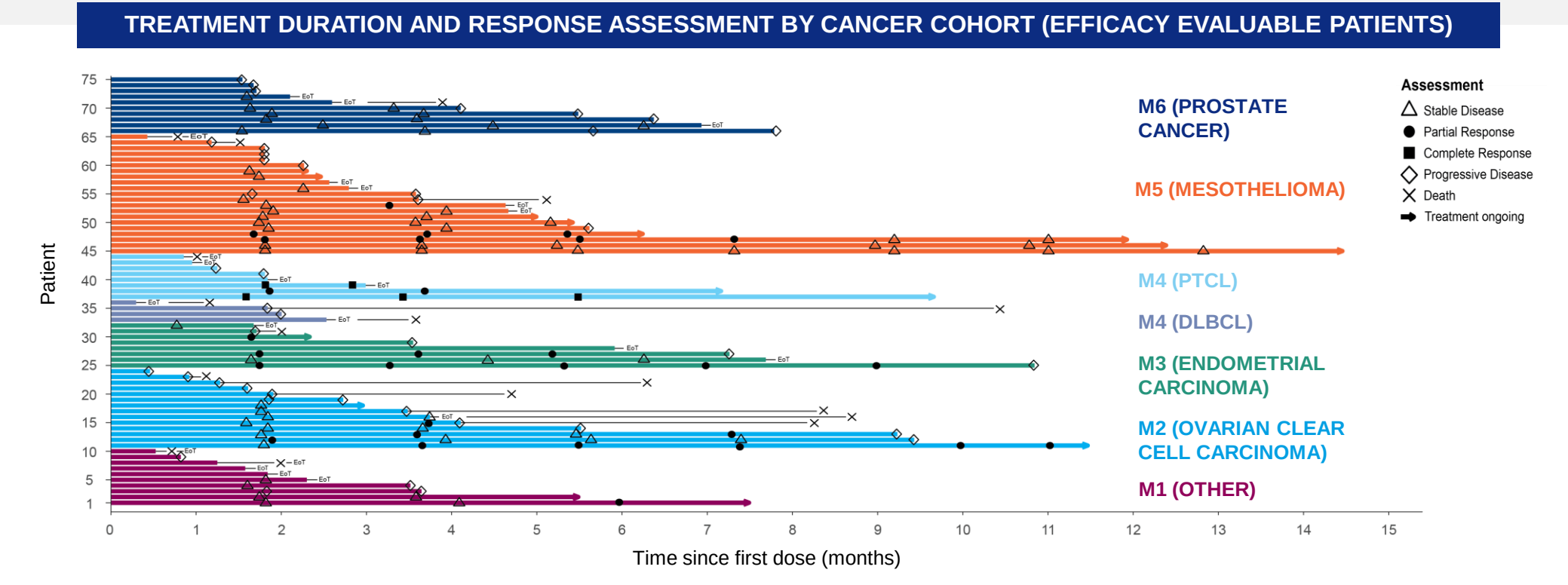
Fast Track designation granted for the treatment of patients with advanced, recurrent or metastatic endometrial cancer harboring AT-rich interacting domain containing protein 1A (*ARID1A*) mutations and who have progressed on at least one prior line of treatment



RECIST, Response Evaluation Criteria in Solid Tumors; CR, complete response

Tulmimetostat Demonstrates Anti-Tumor Activity Across All Indications Investigated

Future findings will inform potential clinical development plans, both as a monotherapy and in combination with other treatments



PTCL, peripheral T-cell lymphoma; DLBCL, diffuse large B-cell lymphoma
Drescher C, et al. ASCO 2023. Abstract 3094. | Data Cut-Off February 14, 2023

Tulmimetostat Safety Profile Appears Manageable for Heavily Pretreated Patients with Advanced Cancer

MOST FREQUENTLY REPORTED TREATMENT-EMERGENT ADVERSE EVENTS (TEAES)*

Preferred Term	Any Grade	Grade ≥3
Thrombocytopenia	41 (50.6)	20 (24.7)
Diarrhea	37 (45.7)	9 (11.1)
Anemia	29 (35.8)	12 (14.8)
Nausea	27 (33.3)	1 (1.2)
Fatigue	26 (32.1)	0
Alopecia	22 (27.2)	1 (1.2)
Dysgeusia	20 (24.7)	0
Vomiting	18 (22.2)	1 (1.2)
Decreased appetite	12 (14.8)	1 (1.2)
Neutropenia	13 (16.0)	11 (13.6)
Weight decreased	10 (12.3)	0

The majority of the most frequently reported TEAEs were Grade 1 or 2

Safety profile is consistent with the mechanism of action of EZH2 inhibition

*Occurring in ≥10% of patients. Data are N (%) patients in the safety analysis set
Drescher C, et al. ASCO 2023. Abstract 3094. | Data Cut-Off February 14, 2023

04
Partner Programs

Offering potential upside and options for non-dilutive financing

Mid-to-Late-Stage Partner Programs Progressing Well, Offering Potential Upside and Options for Non-Dilutive Financing

	PARTNER	DISEASE AREA	STATUS
IANALUMAB	Novartis	Sjögren's Syndrome Lupus Nephritis Other autoimmune diseases	Several ongoing Phase 3 studies
ABELACIMAB	Anthos Therapeutics	Venous Thromboembolism Prevention	Three ongoing Phase 3 studies
SETRUSUMAB	Ultragenyx and Mereo BioPharma	Osteogenesis Imperfecta	Pivotal ongoing Phase 2/3 study
BIMAGRUMAB	Lilly	Adult Obesity	Ongoing Phase 2b study
FELZARTAMAB	HI-Bio and I-Mab Biopharma	Multiple Myeloma Autoimmune Indications (PMN, IgAN)	Ongoing clinical development

PMN: primary membranous nephropathy; IgAN: immunoglobulin a nephropathy

05
Financial Overview

Cash available to support all
near-term catalysts

2023 Financial Guidance and Cash Runway Overview

2023 FINANCIAL GUIDANCE

Monjuvi® U.S. Net Product Sales	US$ 85M – 95M
Gross Margin for Monjuvi® U.S. Net Product Sales	Approx. 75%
R&D Expenses	€290M – 315M
SG&A Expenses	€140M – 155M

CASH RUNWAY OVERVIEW

€642.2 million in cash and other financial assets as of September 30, 2023

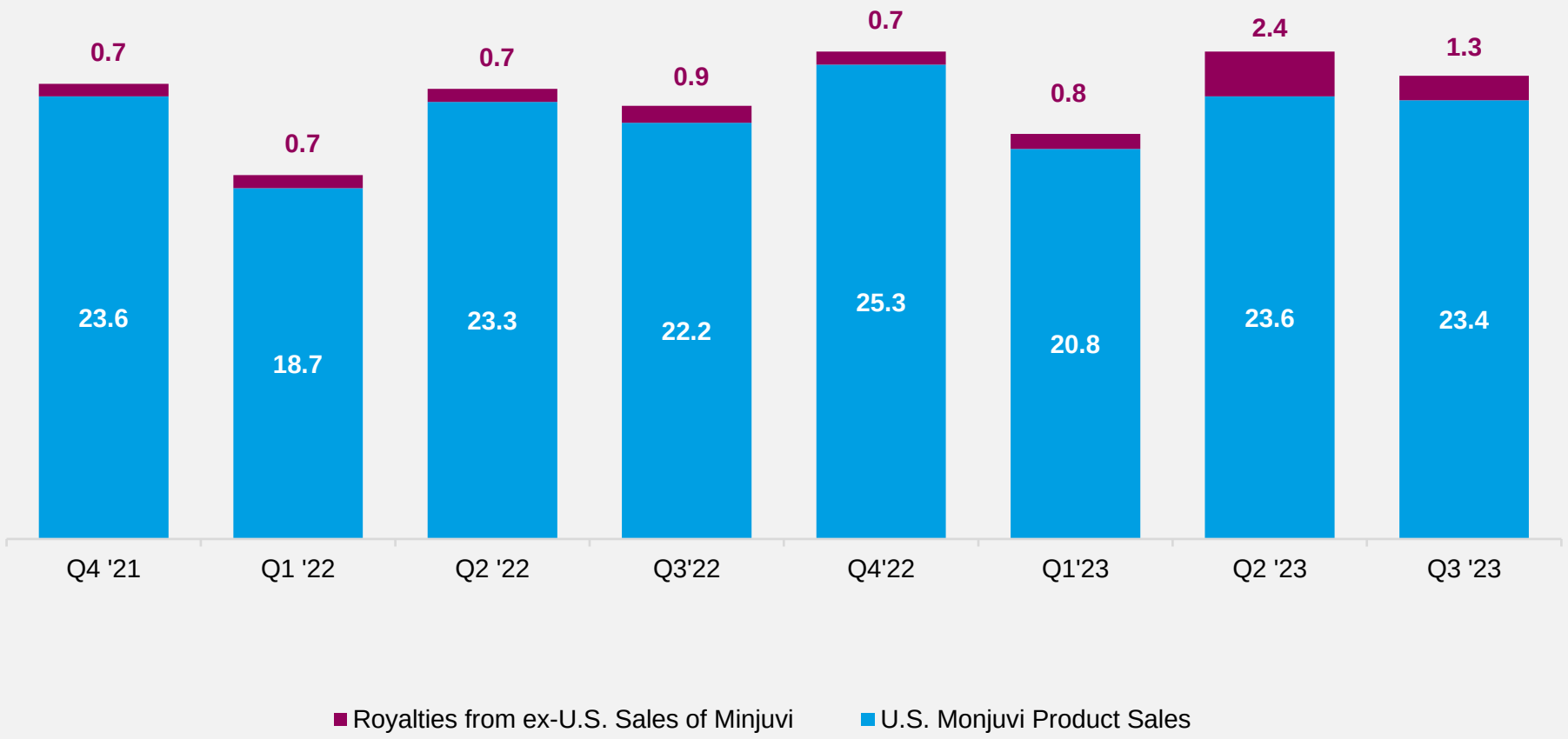
2024 cash burn ~€250 million

Cash available into mid-2026*

*Includes cash from recent capital raise, excluding convertible debt repayment (interest and principal)

Monjuvi® U.S. Product Sales and Minjuvi® Royalty Revenue

USD IN MILLION



06
Investment Thesis

Rich set of catalysts through 2025 with strong financial position

Rich Set of Regulatory and Late-Stage Development Catalysts Through 2025

MORPHOSYS PIVOTAL STUDIES

ASSET	DISEASE AREA	STATUS
Pelabresib (MANIFEST-2)	1L Myelofibrosis	File for approval in U.S. and Europe mid-2024
Tafasitamab (*front*MIND)	1L DLBCL	Topline results available in 2H 2025
Tafasitamab (*in*MIND)	r/r FL / MZL	Topline results available in 2H 2024

PARTNER PIVOTAL STUDIES

ASSET	DISEASE AREA	STATUS
Ianalumab (Novartis)	Sjögren's Syndrome, Lupus Nephritis and other autoimmune diseases	Several ongoing Phase 3 studies
Abelacimab (Anthos Therapeutics)	Venous Thromboembolism Prevention	Three ongoing Phase 3 studies
Setrusumab (Ultragenyx / Mereo BioPharma)	Osteogenesis Imperfecta	Pivotal ongoing Phase 2/3 study

DLBCL: diffuse large B-cell lymphoma; r/r FL / MZL: relapsed/refractory follicular lymphoma or marginal zone lymphoma; 1L, first-line

MorphoSys is Well Positioned to Create Significant Value

PELABRESIB

Pelabresib and ruxolitinib improved all four hallmarks of myelofibrosis in MANIFEST-2

Intend to file for approval in first-line myelofibrosis in U.S. and Europe in mid-2024

Approval offers multi-billion-dollar market opportunity

Robust evidence of potential clinical benefit in other myeloid diseases

MONJUVI®

Commercialization in r/r DLBCL setting

Largest potential upside in first-line DLBCL, with additional opportunities in r/r FL and MZL

Strong commercial infrastructure will enable smooth pelabresib launch

TULMIMETOSTAT

Potential best- and first-in-class opportunities in array of advanced cancers

Promising Phase 2 data, deep and durable responses in heavily pre-treated patients with solid tumors or lymphomas

FDA Fast Track designation in *ARID1A*-mutated endometrial cancer

FINANCIALS

€ 642.2M cash and other financial assets as of September 30, 2023

2024 cash burn ~€250 million

Cash available into mid-2026*

DLBCL: diffuse large B-cell lymphoma; r/r: relapsed/refractory; FL / MZL: follicular lymphoma or marginal zone lymphoma
*Includes cash from recent capital raise, excluding convertible debt repayment (interest and principal)

Thank you!

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