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Vor Bio Clinical Strategy

Thesis: Trem-cel as a Therapeutic Platform

Enabling multiple targeted therapy modalities



ADCs



CAR-Ts

Early Clinical Strategy

- Demonstrate clinical proof-of-principle with Mylotarg as approved agent
 - -Engraftment of gene engineered graft
 - -Shielding the blood system
- Most rapid path to Treatment System
- Testing as monotherapy in posttransplant relapse

Current Clinical Findings

Encouraging data with commercial promise

- 100% engraftment
- Robust shielding of the blood system
- Broadened therapeutic index for Mylotarg
- Early evidence of patient benefit (RFS)
- Encouraging biomarker data at lowest dose





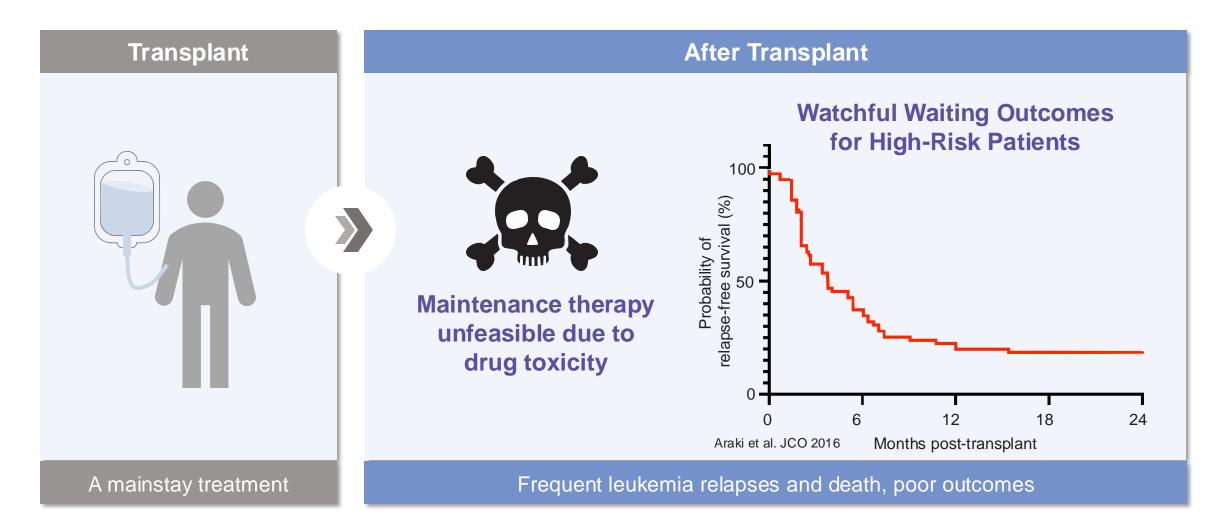
Trem-cel

Mylotarg

VCAR33^{ALLO}



Even After Transplant, High-Risk AML Has Poor Outcomes







What If Shielding Could Lead to Improved Outcomes?

>>

A shielded graft...

... can shield a blood system...

...enabling use of otherwise toxic maintenance therapies...

...potentially leading to improved outcomes













CAR-T







Required Shielded Graft Attributes

- \bigcirc
- **Engraftment**

Reliably reconstitute the blood system

- \bigcirc
- **Therapeutic Index**

Optimize efficacy and safety of maintenance therapies

- $\langle \vee \rangle$
- **Shielding**

Protect against otherwise toxic therapies

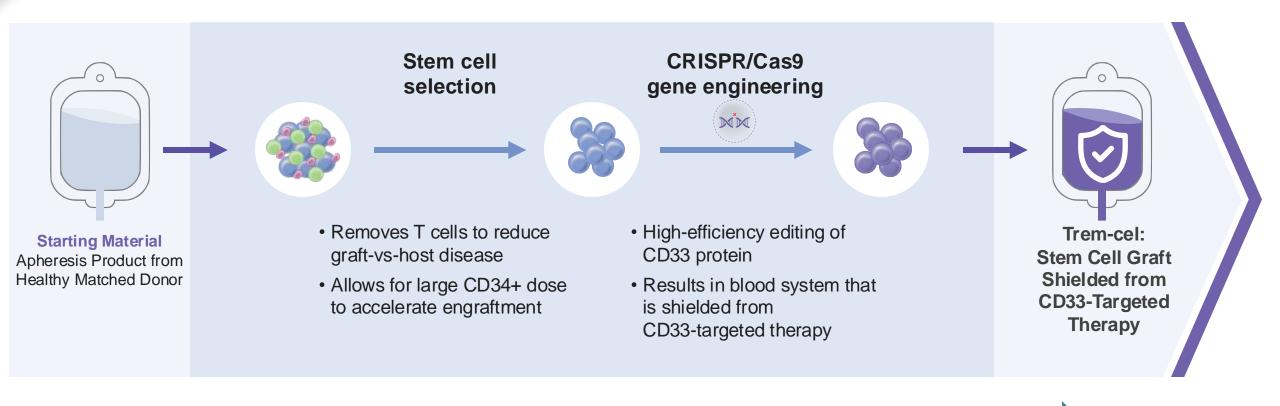
- \bigcirc
- **Patient Benefit**

Prolong relapse-free survival





What is Trem-Cel?

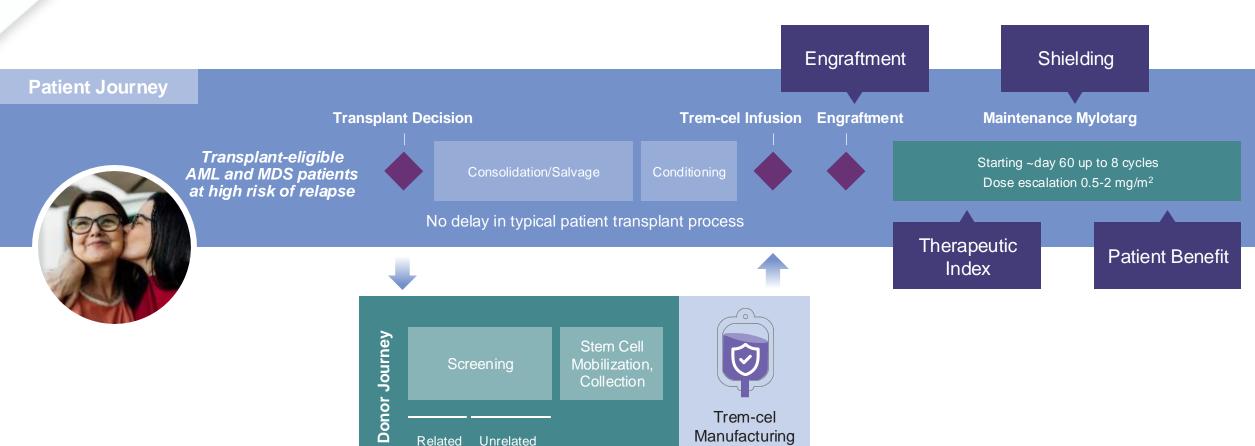


~7 day manufacturing process





VBP101: Trem-cel Phase 1/2a Clinical Trial



~7-day process

Unedited back-up graft



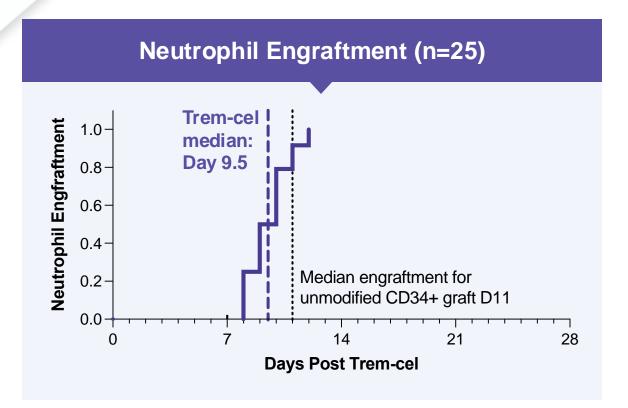


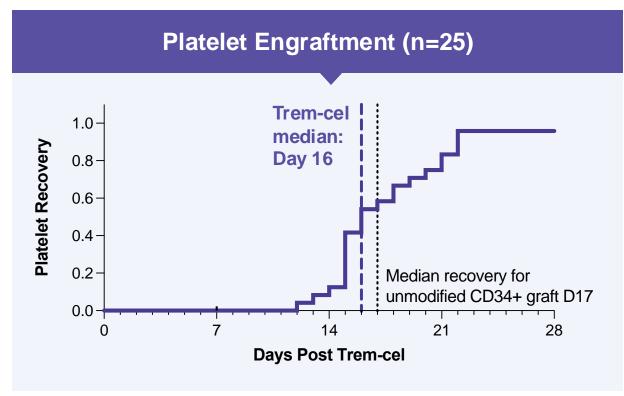






Trem-cel Achieved Timely Engraftment







High CD33 editing efficiency (median 90%, range 71-94%)



100% neutrophil engraftment



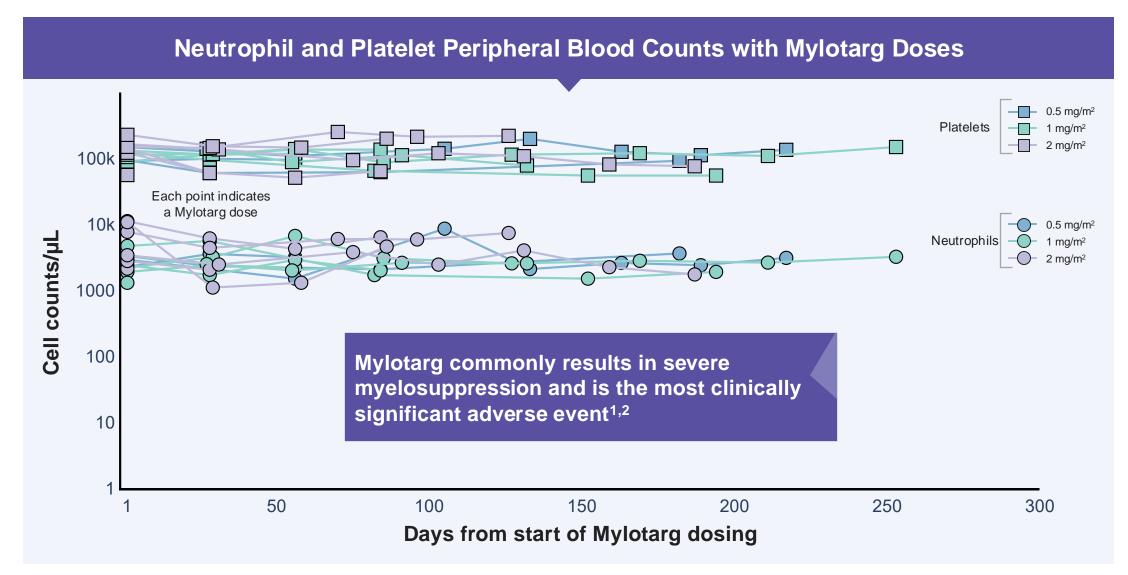
100% achieved full myeloid chimerism at D28







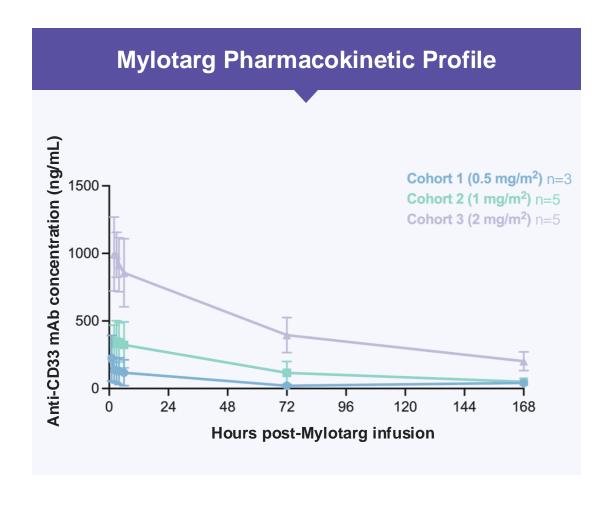
Trem-cel Demonstrated Shielding Across Mylotarg Doses

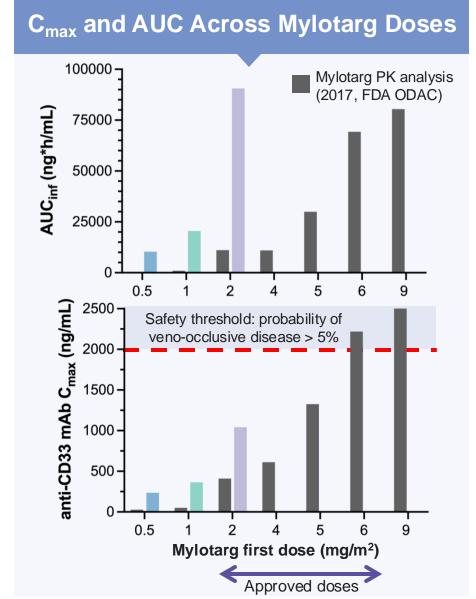






Trem-cel Enabled Broadened Therapeutic Index for Mylotarg









Baseline Risk Factor Demographics for AML Patients: VBP101 vs. Comparators

Disease Characteristic	VBP101 AML ITT (n=24)	VBP101 AML Treated with Mylotarg (n=15)	Araki MRD+ Cohort (2016) (n=76)	Jentzsch Adverse Risk Cohort (2022) (n=271)		
Cytogenetics Risk ELN 2022						
Favorable	8%	13%	3%	N/A		
Intermediate	33%	27%	58%	N/A		
Adverse	58%	60%	39%**	100%*		
Other AML Risk Factors						
TP53 mutation	33%	40%	NR	NR		
Secondary AML ^a	42%	33%	42%	49%		
Disease Burden Status						
Remission (MRDneg)	75%	73%	N/A	20%		
MRD+ (>0.1-<5% blasts by flow)	13%	20%	100%*	13%		
Active disease (≥5% blasts)	13%	7%	N/A	32%***		
AML Disease Status						
CR1	63%	60%	67%	61%		
CR2	25%	33%	33%	7%		
Relapsed or refractory	13%	7%	0	32%***		
Adverse Risk Features (Adverse ELN/molecular/cytogenetic, Secondary AML, MRD or active disease, CR2 or Relapsed/Refractory), n (%)						
1	11 (46%)	6 (40%)				
2 or more	13 (54%)	9 (60%)				

^{*}Selected comparison cohort (n) from published studies. **Adverse cytogenetics. ***Includes partial remission, relapsed, refractory. Jentzsch values for disease burden status do not total 100% due to data not reported.

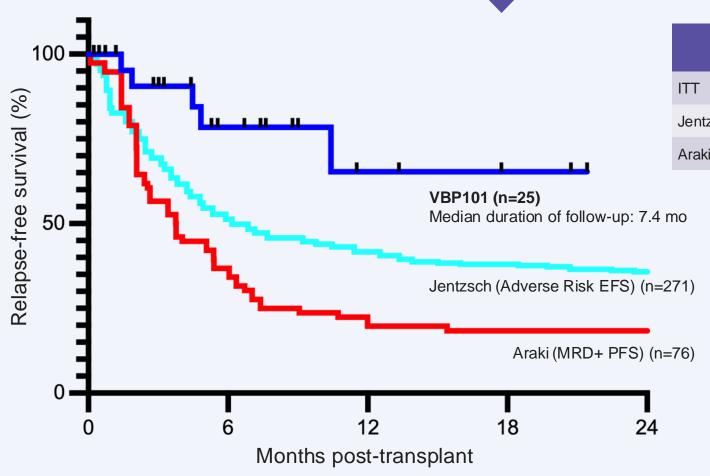


^aDefined as AML with myelodysplasia-related change and therapy-related AML, NR=not reported, N/A=not applicable Data cut-off: 01-NOV-2024



Trem-cel+Mylotarg RFS Appears Favorable vs Published High-Risk AML Comparators

Relapse-Free Survival of VBP101 (intention-to-treat) vs Araki and Jentzsch (historical controls)



	Median RFS (mo)	P value vs VBP101*	Hazard Ratio* (HR)	HR 95% CI*
ITT	Not reached			
Jentzsch	6.2	0.02	0.36	0.21-0.64
Araki	3.8	0.0004	0.23	0.14-0.40

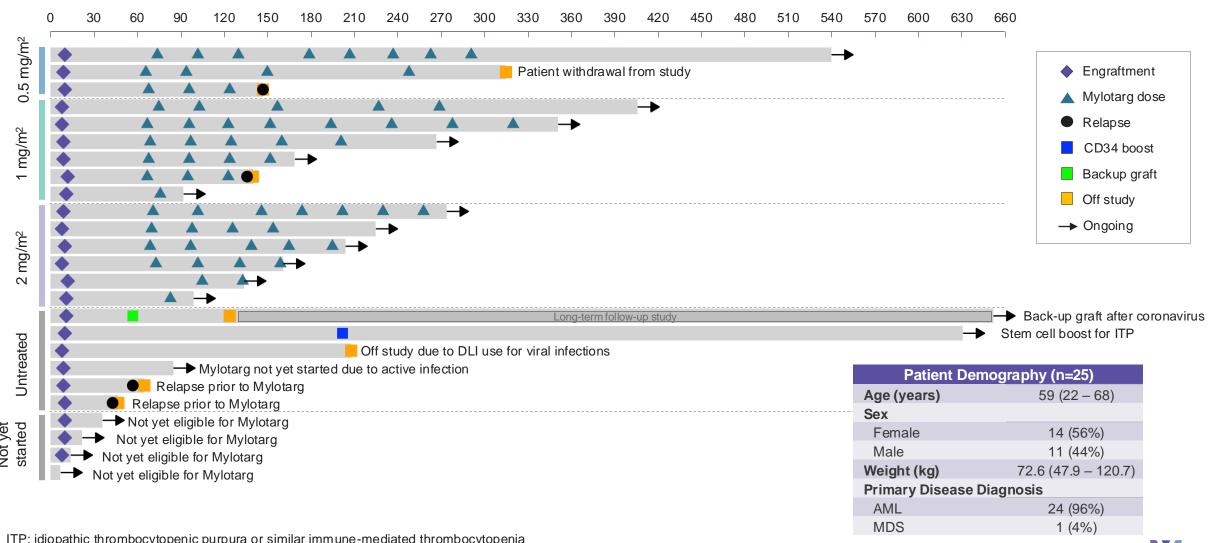
- Four relapses observed: (all CD33 positive at relapse)
 - 2/4 relapsed prior to Mylotarg treatment
 - 3/4 transplanted with active disease; 1/4 with MRD
 - 4/4 adverse risk cytogenetics
- One patient died off-study due to complications of viral infection



VBP101 data cut-off: 1-NOV-2024. Adapted from Fig 2B MRD+ PFS line from Araki et al. JCO 2016; Adapted from Fig 1C, ELN 2022 Adverse risk EFS line from Jentzsch et al. Blood Cancer Journal 2022. * = individual comparison to VBP101 using log-rank Mantel-Cox test. Data not from head-to-head trial.



Low Rate of Relapse (2/15) Among Patients Receiving Mylotarg



ITP: idiopathic thrombocytopenic purpura or similar immune-mediated thrombocytopenia Data cut-off: 1-NOV-2024





Any Grade Treatment Adverse Events After Receiving Mylotarg (n=15)

Adverse Event	Grade 1	Grade 2	Grade 3	Grade 4
Hematologic				
Anemia	-	1/15 (7%)	3/15 (20%)	-
Autoimmune hemolytic anemia	-	-	1/15 (7%)	-
Leukopenia	-	-	1/15 (7%)	-
Lymphocyte count decreased	1/15 (7%)	-	-	-
Lymphopenia	-	-	1/15 (7%)	-
Neutropenia	-	2/15 (13%)	3/15 (20%)	-
Platelet count decreased	-	-	2/15 (13%)	-
Thrombocytopenia	-	1/15 (7%)	1/15 (7%)	1/15 (7%) ^a
Hepatobiliary				
ALT increased	2/15 (13%)	1/15 (7%)b	-	-
AST increased	1/15 (7%)	-	1/15 (7%)b	-
Biliary colic	1/15 (7%)	-	-	-
Alk Phos increased	3/15 (20%)	-	-	-
Blood bilirubin increased	1/15 (7%)	-	-	-
LDH increased	2/15 (13%)	-	-	-
Cholecystitis	-	2/15 (13%)	-	-
Veno-occlusive disease	1/15 (7%) ^c	-	-	-

^aFollowing adverse event, patient continued to receive multiple cycles of Mylotarg

cMild grade late-onset veno-occlusive disease occurred 97 days after 0.5 mg/m² Mylotarg dose. Predisposing factors included azole toxicity, concurrent norovirus infection and gram-negative bacteremia. ALT = Alanine aminotransferase; AST = Aspartate aminotransferase; Alk Phos = blood alkaline phosphatase; LDH = blood lactate dehydrogenase

Data cut-off: 1-NOV-2024



^bALT/AST elevation attributed to fluconazole toxicity and resolved after discontinuation



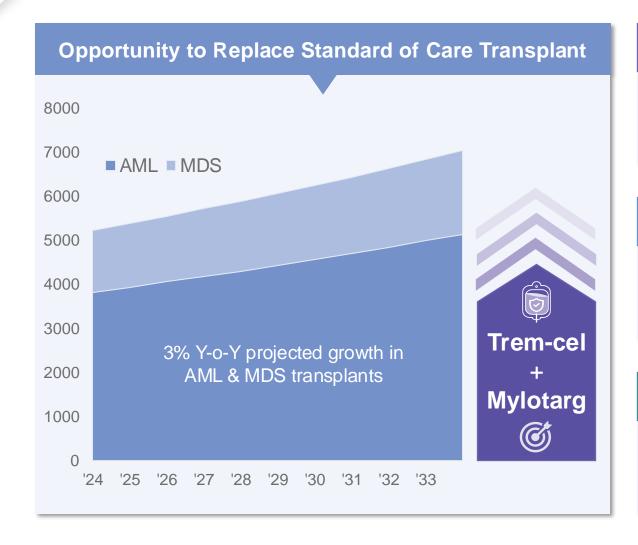
Clinical Update Summary

- Robust neutrophil engraftment, platelet recovery and full donor myeloid chimerism
- Consistent shielding from Mylotarg-related cytopenias during repeated 0.5, 1, and 2 mg/m² doses
- Immune reconstitution, multilineage chimerism, and safety profile similar to unedited CD34-selected grafts
- Broadened Mylotarg therapeutic index following trem-cel
- Preliminary data suggesting improved RFS compared to published groups of AML patients at high risk of relapse post-HCT





Trem-cel Platform with Potential >\$1B Commercial Opportunity



Transformative Treatment



- Shielded transplants to prevent on-target toxicity
- Targeted treatments to improve relapse free survival

Concentrated Market Opportunity



- ~80% of transplants in 65 US centers
- ~5,000 AML & MDS transplants per year

Reimbursement Pathway



- 100% cost-based reimbursement for eHSCs*
- o Commercial example: Omisirge® at \$338,000





Physician Feedback on Trem-cel + Mylotarg Value Proposition



Perceptions of Trem-Cel

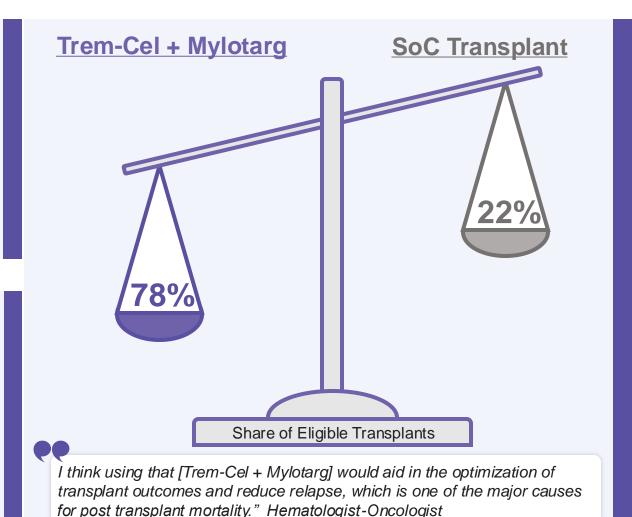
- Streamlined manufacturing with consistent engraftment
- Provides protection of donor cells from on-target toxicity
- Positive impact on patient outcomes and reduced GvHD
- Enable maintenance therapy to reduce relapse is compelling





Perceptions of Mylotarg

- As monotherapy, concern for hepatoxicity and neutropenia
- With trem-cel, relative safety concerns are alleviated
- Benefit of protection with improved RFS vs. traditional HSCT

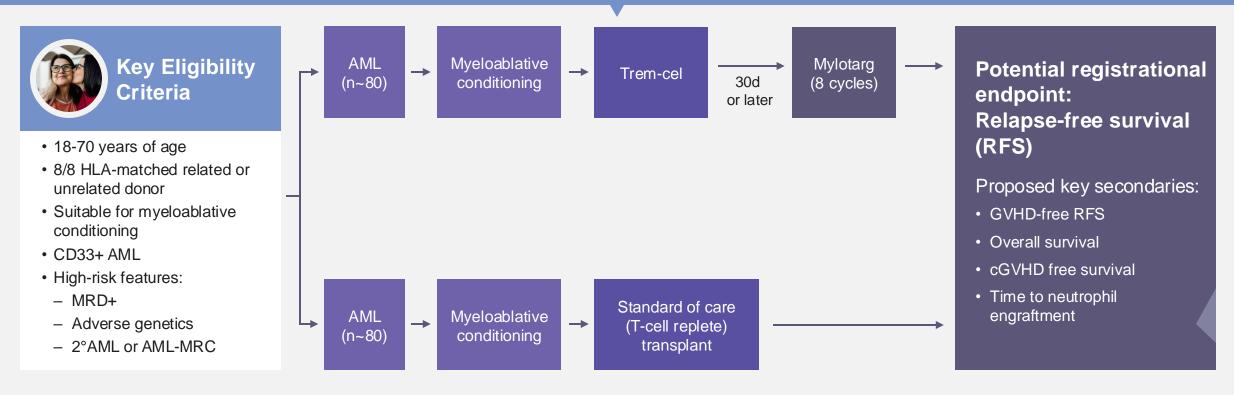






Potential Registrational Trial Design for Trem-cel/Mylotarg

Patient Journey







Summary of FDA Response to Type C Meeting Request

- Agreement that trem-cel engrafts neutrophils and platelets and has a similar safety profile to unedited CD34+ grafts
- Agreement with the trem-cel-Mylotarg registrational clinical trial design with respect to study population, control arm, primary endpoint, stratification factors, and statistical design
- Agreement to provide further updates to FDA from the VBP101 trial alongside submission of the full registrational clinical trial protocol





VCAR33^{ALLO}: CD33-Directed Healthy Donor-Derived CAR-T



~7-day manufacturing



Cells harvested from prior transplant donor

Rapid process to preserve stemness

Terminally frozen for convenience

T cells exactly matched to patient's immune system

Healthy, stem-like cells more likely to expand and less prone to exhaustion

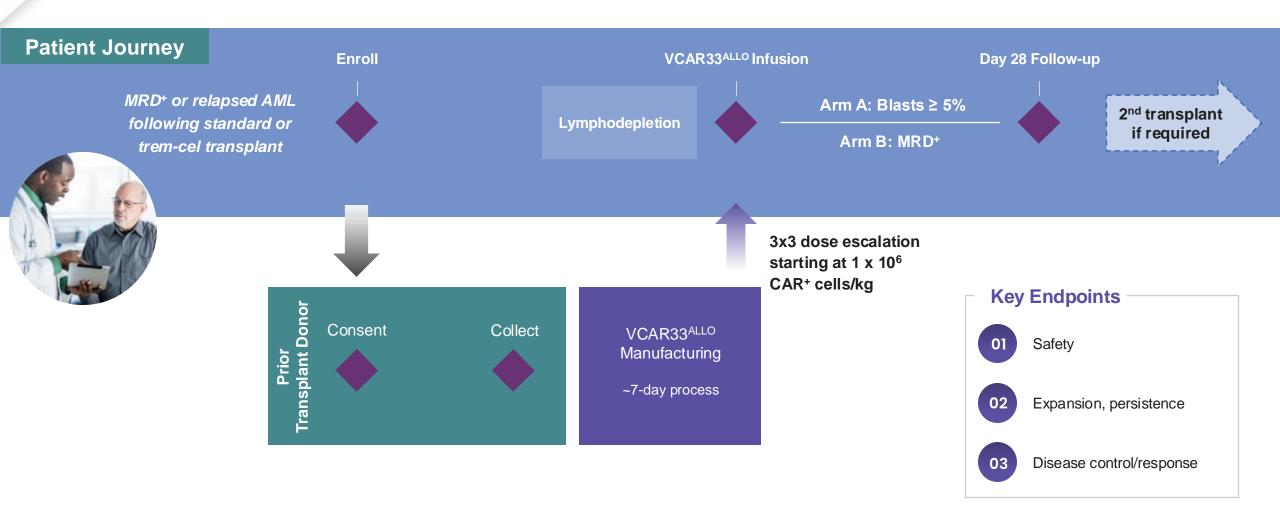
Clinically validated construct:
NIH study using autologous cells showed efficacy at 1 x 10⁷ CAR+ cells/kg (2/5 assessable pts)¹

1. Shah et al. ASH 2023





VBP301: VCAR33^{ALLO} Phase 1/2 Clinical Trial

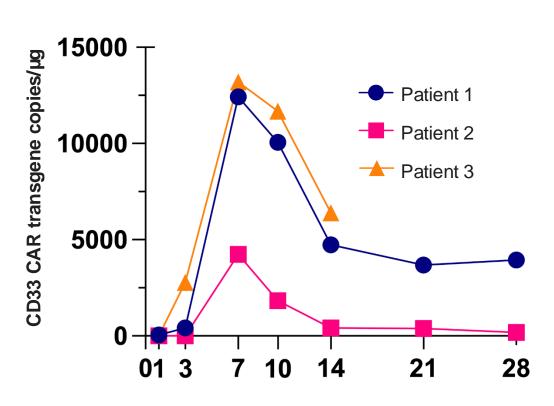






VCAR33^{ALLO}: Encouraging Signs of *In Vivo* Expansion

Peripheral Blood



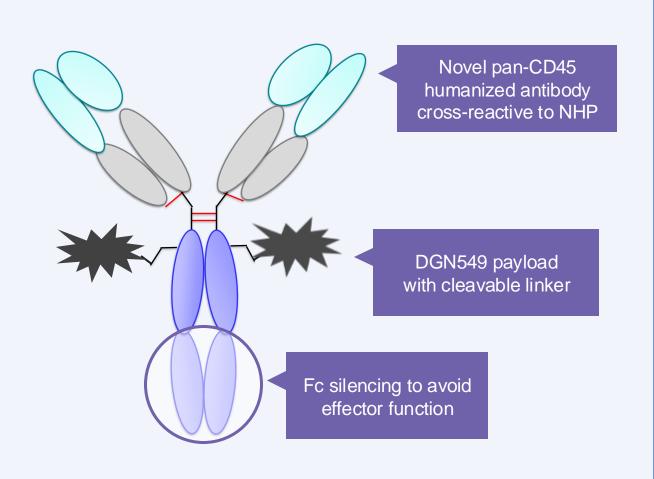
Days Post CAR-T Infusion

- Dose escalation schedule:
 - 1 x 10⁶ CAR+ cells/kg
 - 3 x 10⁶ CAR+ cells/kg
 - 1 x 10⁷ CAR+ cells/kg
- NCI CD33CART trial (autologous) saw in vivo expansion and 2 responses out of 5 assessable patients at 1 x 10⁷ CAR+ cells/kg*





VADC45, a Novel CD45-Targeted Antibody Drug Conjugate



CD45 is highly expressed throughout the heme compartment (minus mature RBCs)

Clinically validated linker-payload (Immunogen, alkylating agent)

Robust preclinical data package

IND-enabling studies progressing to completion





VADC45: Potential Commercial Opportunities



Treating Relapse - Heme Malignancies

- CD45 is highly expressed in AML and DLBCL
- Target may be oncogenic, driving tissue infiltration, high expression and poor prognosis
- Opportunity: R/R AML and MDS



Non-Chemo Conditioning - Gene Therapies

- Gene therapies such as for sickle cell urgently need non-chemo conditioning agents
- Could avoid oncogenicity and sterility concerns
- Opportunity: SCD, TDT alternative conditioning



Immune Reset - Autoimmune Diseases

- Immune disorders that may require more holistic reset of the entire immune system
- Holistically remove immune cell compartments
- Opportunity: Refractory MS, SLE, SSc



Epitope Engineering - Shielded Grafts

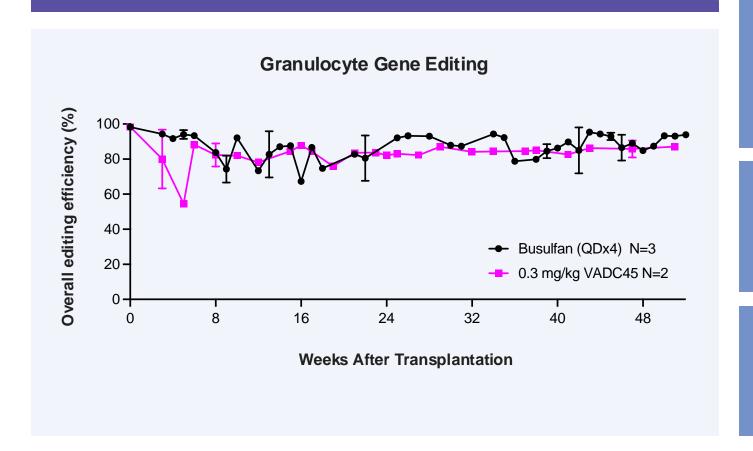
- Precise epitope for VADC45 has been identified
- Experiments are ongoing for epitope modification which retains protein functionality
- Opportunity: Heme malignancies





Single Dose of VADC45 Enabled Gene-edited HSC Engraftment

Engraftment and Persistence of Gene-edited Stem Cells





NHPs received autologous transplantation of BCL11Aedited HSCs with conditioning via chemo (busulfan) compared to single dose of VADC45



Very high myeloid chimerism achieved within days of transplant



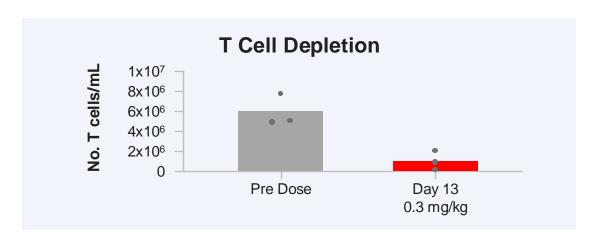
Persistently high edited populations through one year from transplant

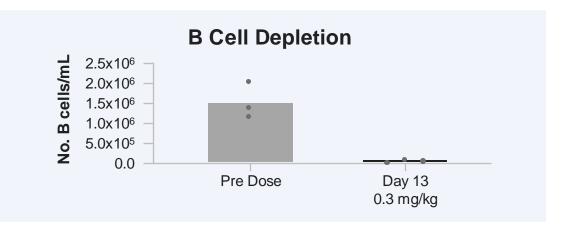


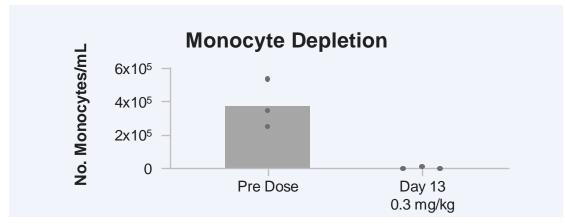


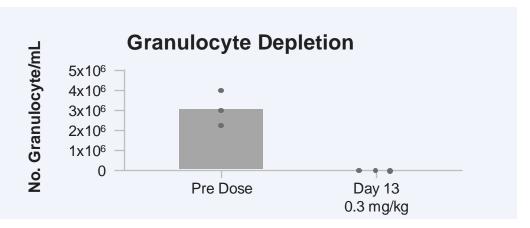
Single Dose of VADC45 Efficiently Depleted Immune Cells

Immune Cell Depletion from Peripheral Blood (NHP)













Next-Generation Approaches

Targets Beyond CD33

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Expansion into additional indications

Multi-targeted CAR-Ts

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Avoidance of potential tumor escape

Multiplex-edited grafts

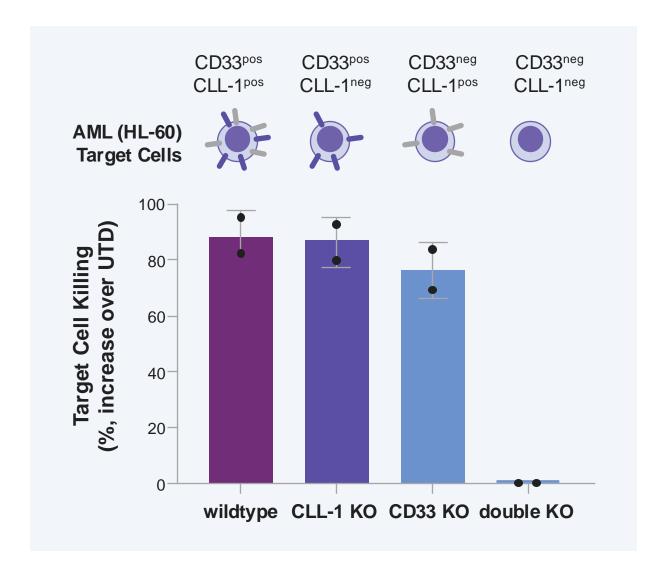
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Broader options for treatment





In Vitro PoC for Multi-Specific CAR-T: Cell Killing and Shielding



- 2 independent T cell donors
- 48h co-culture of CAR-T cells with HL60 (AML) target cells
- E:T ratio 1:1

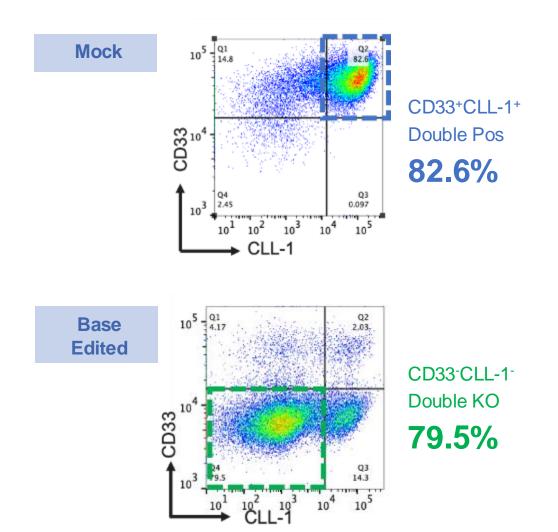
Multi-Specific CAR-T cell (CD33+CLL-1)

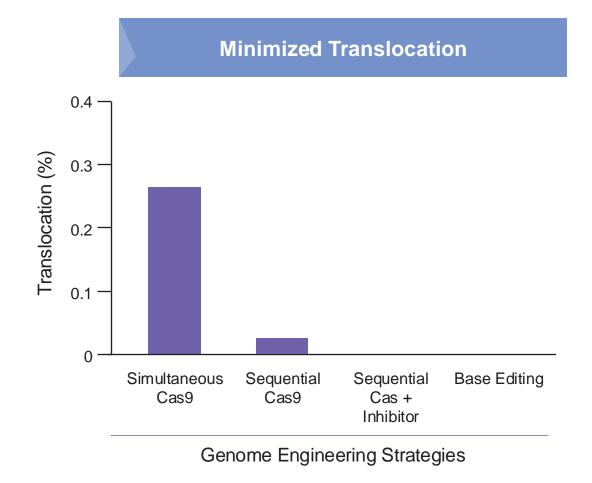
- Highly effective AML target cell killing
- "OR gated" CAR which eliminates target cells expressing both OR one target only
- Highly specific CAR leaving double knock-out target cells intact
- Can be paired with Multiplex (CD33+CLL-1)edited HSPCs which provide shielding





Multiplex HSC Editing: Minimize Translocations





Adapted from Precision Genome Engineering Keystone Symposia – 2022 Poster 3002





Vor Bio Unique Approach to Potentially Cure Blood Cancers



Trem-cel, a first-in-class investigational* shielded stem cell transplant

- · Reliable engraftment, robust shielding of the blood system
- Platform therapy addressing >\$1B potential market opportunity



Trem-cel + Mylotarg combination

- Broadened Mylotarg therapeutic index
- Early evidence of patient benefit prolonging relapse-free survival
- Supportive feedback from FDA on registrational trial design



VCAR33^{ALLO}, differentiated transplant donor CAR-T therapy

• Encouraging signs of in vivo expansion with strong trial enrollment



VADC45

• Four distinct potential commercial opportunities





www.vorbio.com



Pipeline to Change the Standard of Care in Blood Cancers

Description			Preclinical		Clinical		
Program / Trial	Modality	Indication	Discovery/ Validation	IND- Enabling	Phase 1/2	Phase 2/3	Anticipated Milestones
Trem-cel + Mylotarg / VBP101	Shielded CD33-deleted transplant + CD33-directed ADC	AML, MDS					Clinical data in 2H 2025
VCAR33 ^{ALLO} (healthy transplant donor CAR-T) / VBP301	CD33-directed transplant donor CAR-T	AML post- transplant					Clinical data in 1H 2025
Trem-cel + VCAR33 Treatment System	Shielded CD33-deleted transplant + CD33-directed transplant donor CAR-T	AML					IND filing following initial trem-cel and VCAR33 ^{ALLO} data
VADC45 ADC	CD45-directed ADC	AML, conditioning, immune reset					Finalizing IND preparedness
CD33-CLL1 Treatment System	Multi-specific CAR-T	AML					
	Multiplex-edited shielded transplant	AML					





Experienced Leadership Team



Robert Ang, MBBS, MBA President and CEO



Alliance Ar Regenerative Medicine







Han Choi, M.D., LL.M Chief Financial Officer

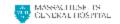




Eyal Attar, MD Chief Medical Officer









Tirtha Chakraborty, PhD Chief Scientific Officer





moderna^a



Tania Philipp Chief People Officer









John King, MBA Chief Commercial Officer & Head of Business Development









David Phillips, MBA Senior Vice President, Head of Quality









Samir Vattompadam, MS Senior Vice President, Portfolio Strategy and Program Management



EQ_R™ **Ö**Seagen



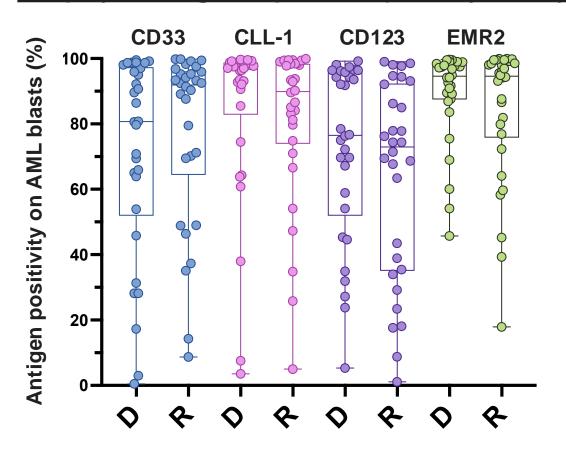




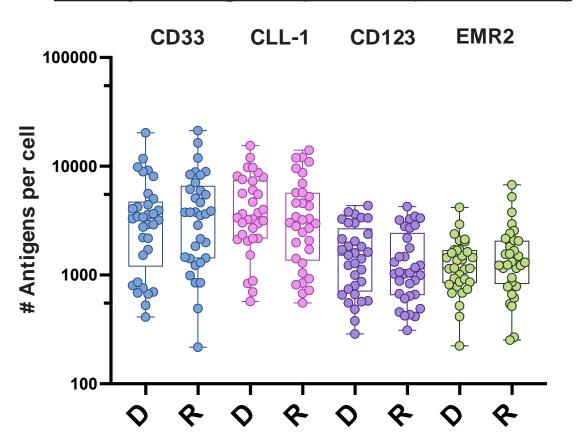


CD33 is Amongst Highest Quality Targets in AML

<u>Ubiquity of Antigen Expression (Flow Cytometry)</u>



Density of Antigen Expression (QuantiBRITE)



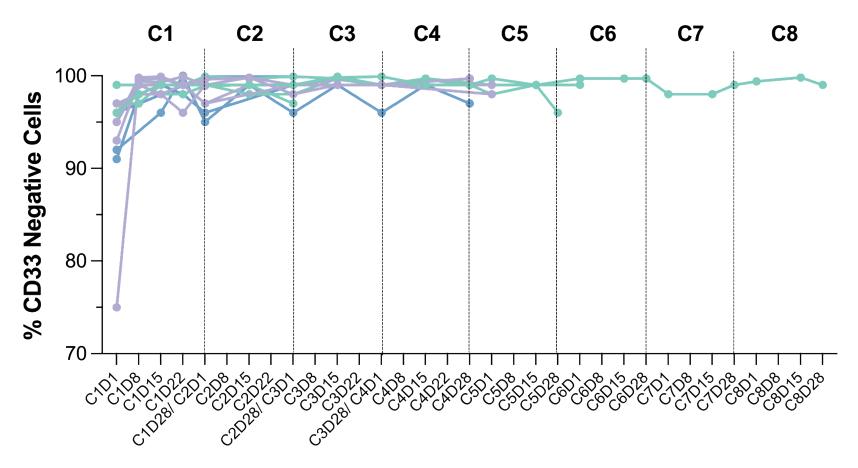




CD33 Negative Cells Enriched with Mylotarg Doses

Loss of CD33 Expression on Myeloid Cells

(Peripheral Blood, n=20)



Cohort 1 (0.5 mg/m²)

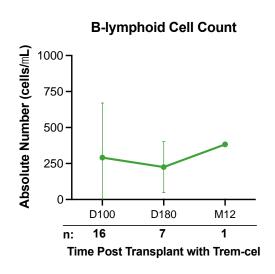
Cohort 2 (1 mg/m²)

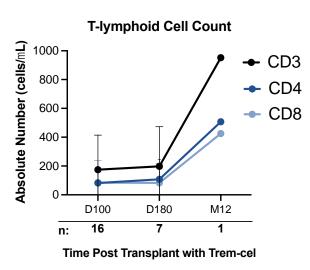
Cohort 3 (2 mg/m²)

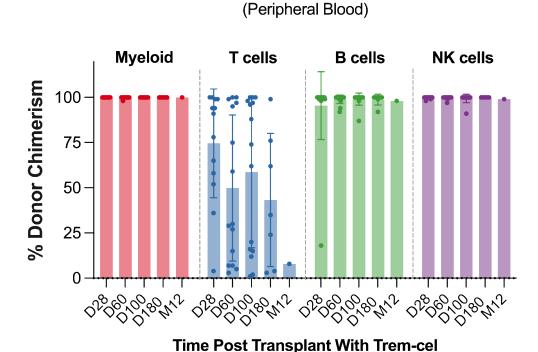




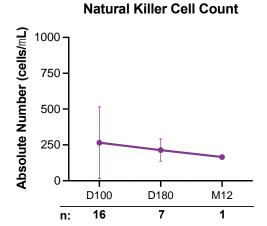
Immune Reconstitution, Full and Sustained Myeloid Chimerism, and CD33-negative Myeloid Cells Are Observed



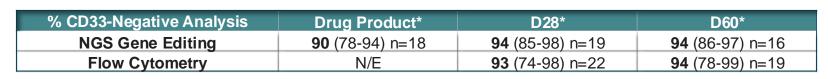




Lineage-Specific Donor Chimerism



Time Post Transplant with Trem-cel



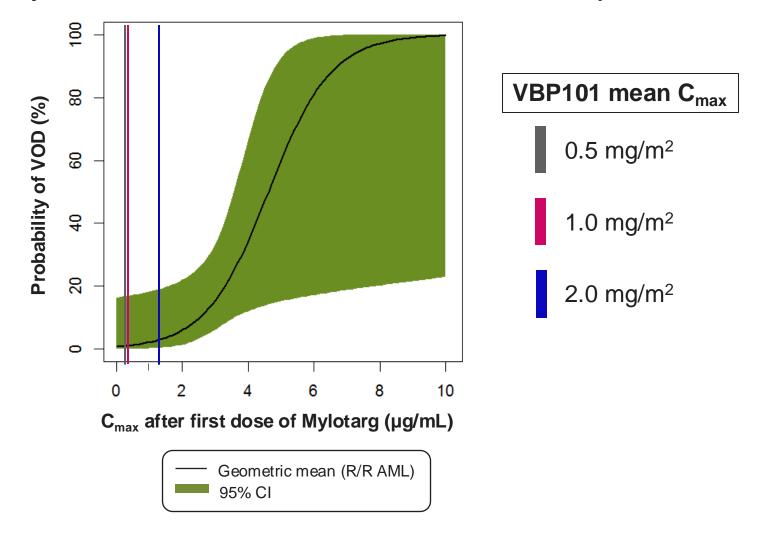
^{*}Mean % (range), Editing and flow data from peripheral blood monocytes and myeloid cells respectively N/E: not evaluated





Risk of Veno-Occlusive Disease Related to Mylotarg C_{max}

Probability of Veno-occlusive Disease in Patients with Prior Transplant







Selected Precedent Randomized Trials in AML

AML Studies

Transplant Studies

	MORPHO	SIERRA	ALFA-0701	Precision-T	Omidubicel
Drug and Comparisons	Gilteritinib vs placebo	¹³¹ I-apamistamab + Flu-TBI + alloHCT vs conventional care	Daunorubicin + cytarabine ± Mylotarg (D1, 4, 7)	Orca-T transplant vs SoC alloHCT	Omidubicel vs double cord graft
Treatment Setting	Post-HCT maintenance, FLT3-ITD AML	R/R AML	Newly-diagnosed de novo AML	Transplant-eligible AML, ALL, MDS	Transplant-eligible high-risk malignancies
1º Endpoint	RFS	Rate of dCR (CR/CRp ≥ 180 days)	EFS (induction failure, relapse, or death)	Survival free of moderate- to-severe chronic GVHD (cGFS)	Time to neutrophil engraftment
2º Endpoints	OS (key), EFS, Time to NRM, Relapse, GVHD, MRD	OS, EFS	Rate of CR/CRp, OS, RFS, Safety	Time to moderate-to- severe GVHD, GRFS, OS	Platelet engraftment by 42 days, grade 2-3 bacterial or invasive inf, NRM, OS
Sample Size	178 per arm	76 per arm	140 per arm	85 per arm	62 per arm

