

Corporate Overview

William D. Schwieterman, MD
President and Chief Executive Officer
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Company Overview

- Biopharmaceutical company developing vascular disrupting agents (VDAs) for treatment of cancer
 - VDAs selectively occlude tumor vasculature
 - Focusing on orphan oncology indications
 - Core development programs
 - CA4P (fosbretabulin) for ovarian cancer
 - OXi4503 for AML
 - CA4P in combination with immuno-oncology agents
- Market Data

Ticker (OTCQX)	MATN
Price (9/05/2017)	\$0.53
Market Cap	~\$14 million
Average Daily Trading Volume	~70,000

Management Team

Team Member	Experience
William Schwieterman, MD President and Chief Executive Officer	Perceptive Advisors; Chelsea Therapeutics; FDA – Chief of Immunology and Infectious Disease Branch, CBER
David Chaplin, PhD Chief Scientific Officer	Aventis; Rhône-Poulenc Rorer; Cancer Research United Kingdom; University College London
Matthew Loar Chief Financial Officer	KineMed; Neurobiological Technologies; Osteologix; Genelabs Technologies
Jeff Nelson VP Program Management	Axsome Therapeutics; Chelsea Therapeutics; Ladenburg Thalmann; Cobalt Laboratories

Product Pipeline Summary

Program	Indication	Preclinical	Phase 1	Phase 2	Phase 3
CA4P	Platinum-resistant ovarian cancer	Phase 2/3			
OXi4503	Acute myeloid leukemia	Phase 1/2			
CA4P	Combination with immunology agents				
CA4P	Recurrent ovarian cancer	Phase 2			
CA4P	Neuroendocrine tumors	Phase 1b			

- Mateon-sponsored
- Investigator-sponsored



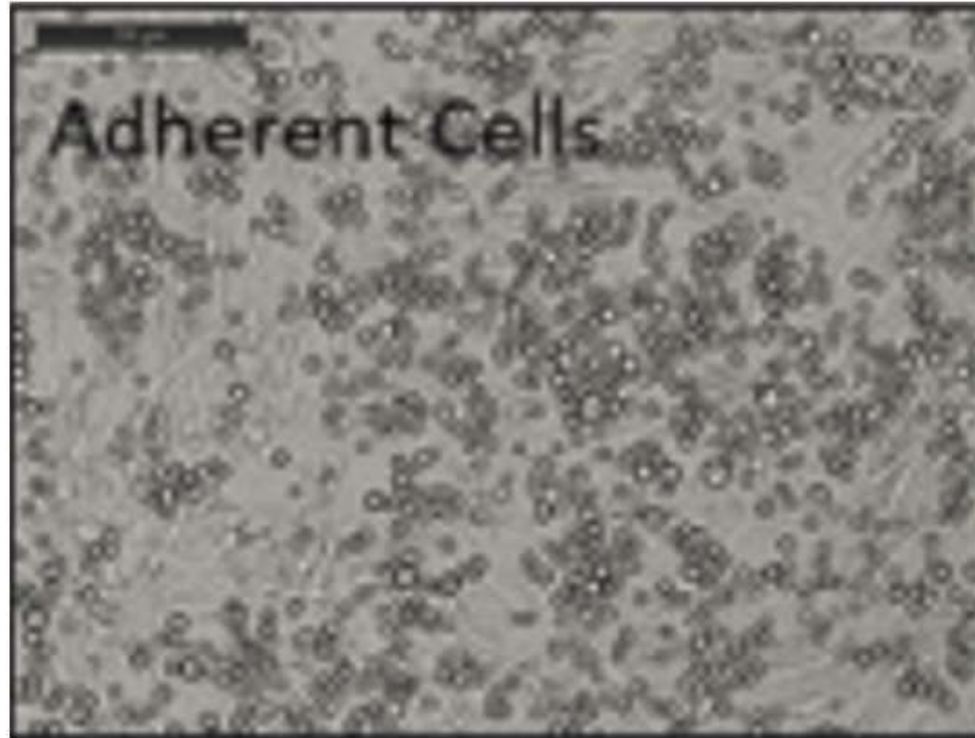
OXi4503 for the Treatment of Acute Myeloid Leukemia

Relapsed, Refractory AML

Unmet Medical Need

- Poor prognosis
 - Treated with chemotherapy
 - 1-year survival after first relapse = 29%
 - 5-year survival after first relapse = 11%
- No new therapies have consistently improved outcomes vs chemotherapy in over two decades
- Leukemic stem cells in bone marrow likely responsible for relapse
 - Minimal Residual Disease
 - Protected by bone marrow endothelial cells (BMECs)
 - Powerful prognostic tool

Bone Marrow Endothelial Cells (BMEC) Protect Residual Disease In AML



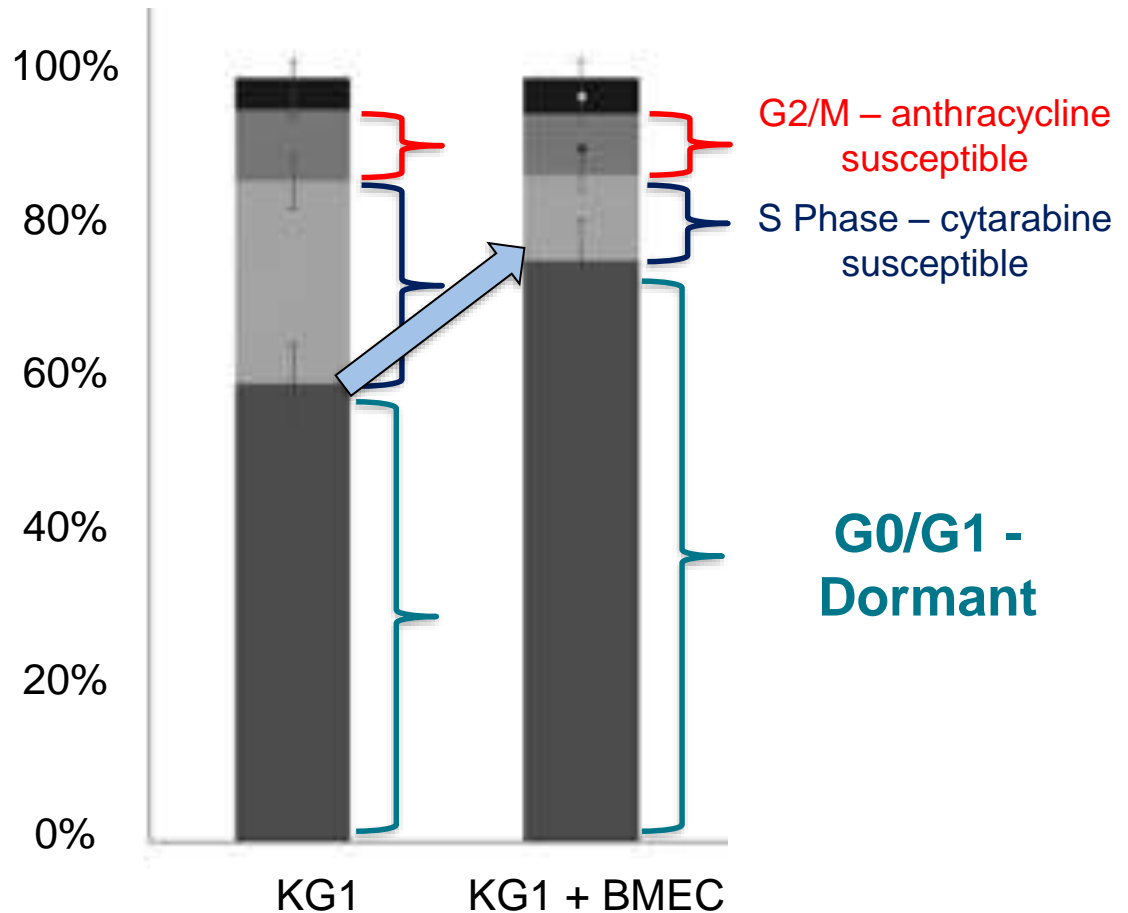
AML Cells Adhering to BMEC

- AML–BMEC adhesion via VCAM-1, VE-cadherin, and BCAM

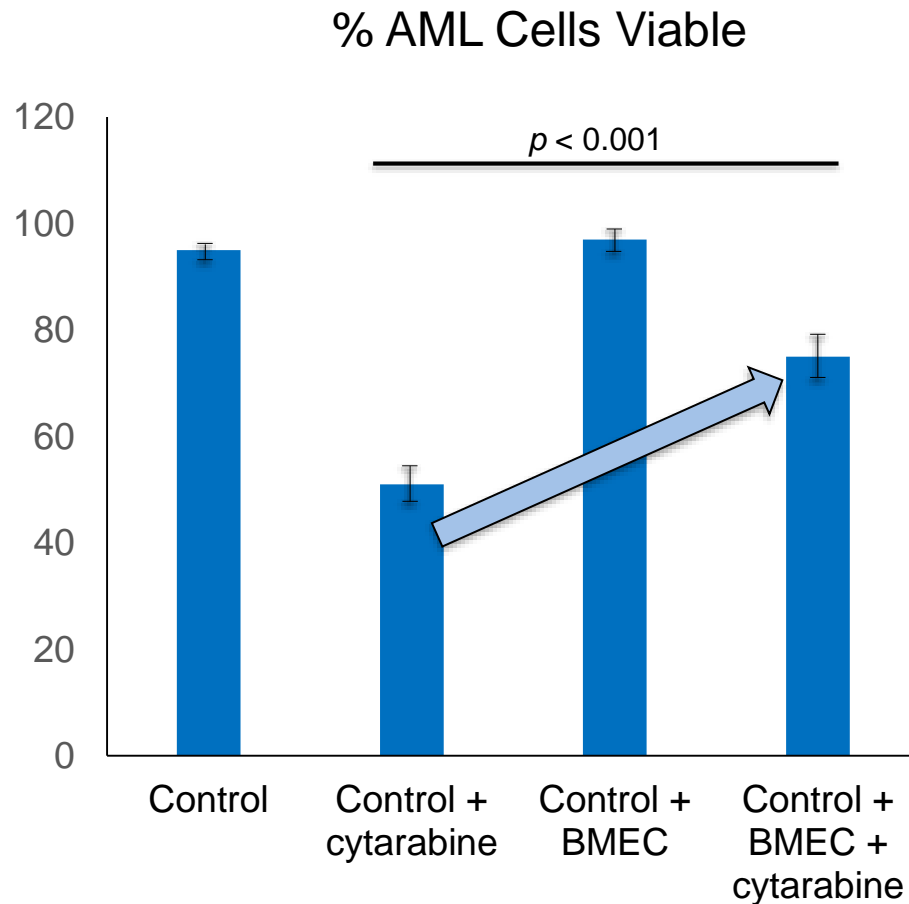
Adherent Leukemic Stem Cells are Less Susceptible to Chemotherapy

Adherence of KG1 leukemic stem cells to BMEC results in more cells in G0/G1 dormant phase

Total Cells By Phase



Adherence of Leukemic Stem Cell to BMEC Reduces Effectiveness of Cytarabine



- BMECs also reduced the effectiveness of anthracycline and nucleoside metabolic inhibitors (NMI)

OXi4503: New Mechanism for AML Treatment

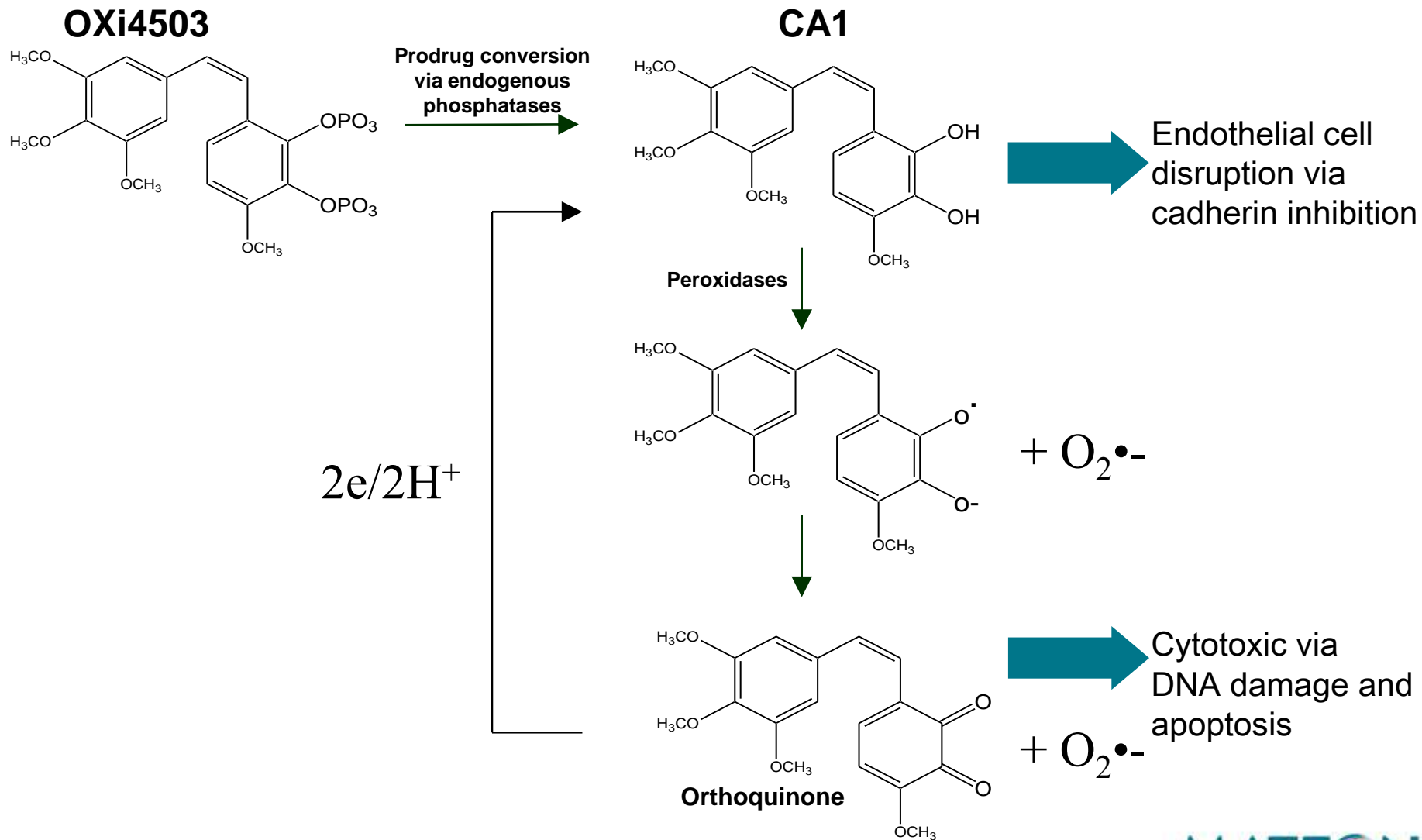
#1. Endothelial Cell Disruption

- Disrupts shape of BMECs by tubulin depolymerization
- Releases adherent tumor cells from BMEC
- Reduction of VCAM-1, VE-cadherin, and BCAM
- Activates the cell cycle

#2. Cytotoxic

- Directly cytotoxic to myeloid lineage cells
- Cytotoxicity via myeloperoxidase activation

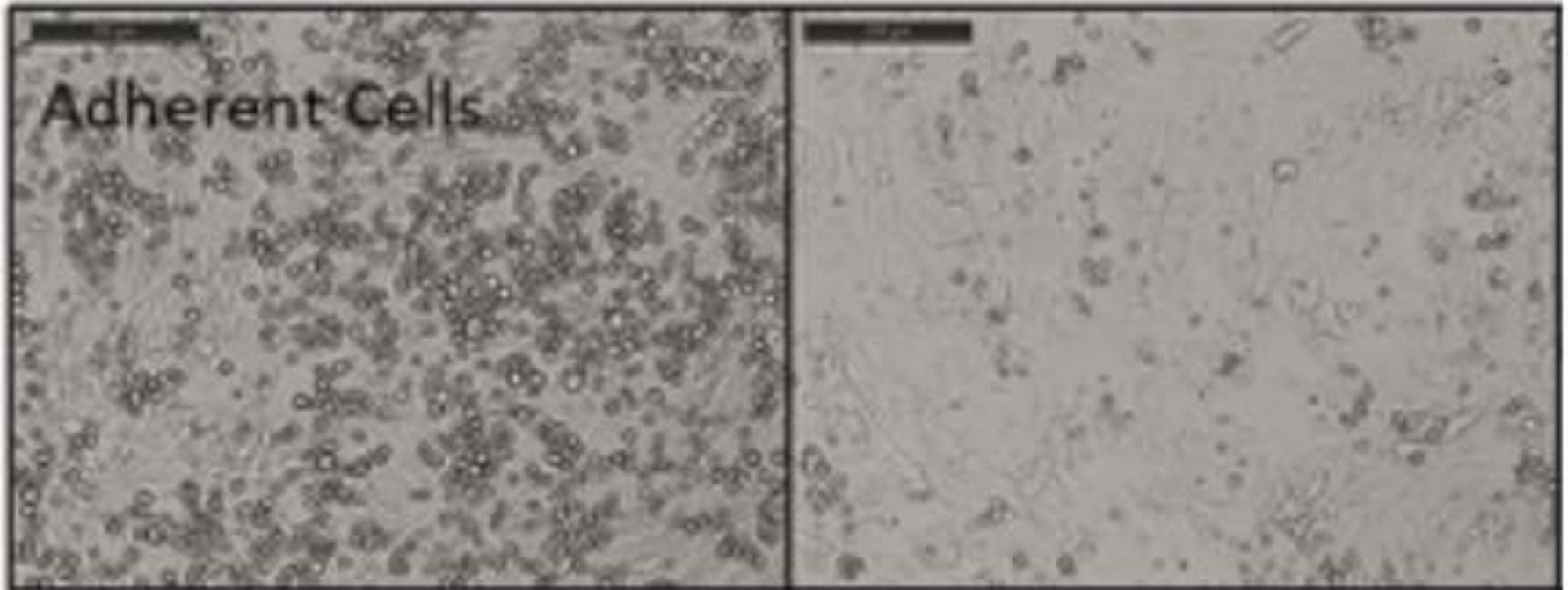
OXi4503: Dual-mechanism of Action



OXi4503: Reduces Adherence of Leukemic Stem Cells

Control

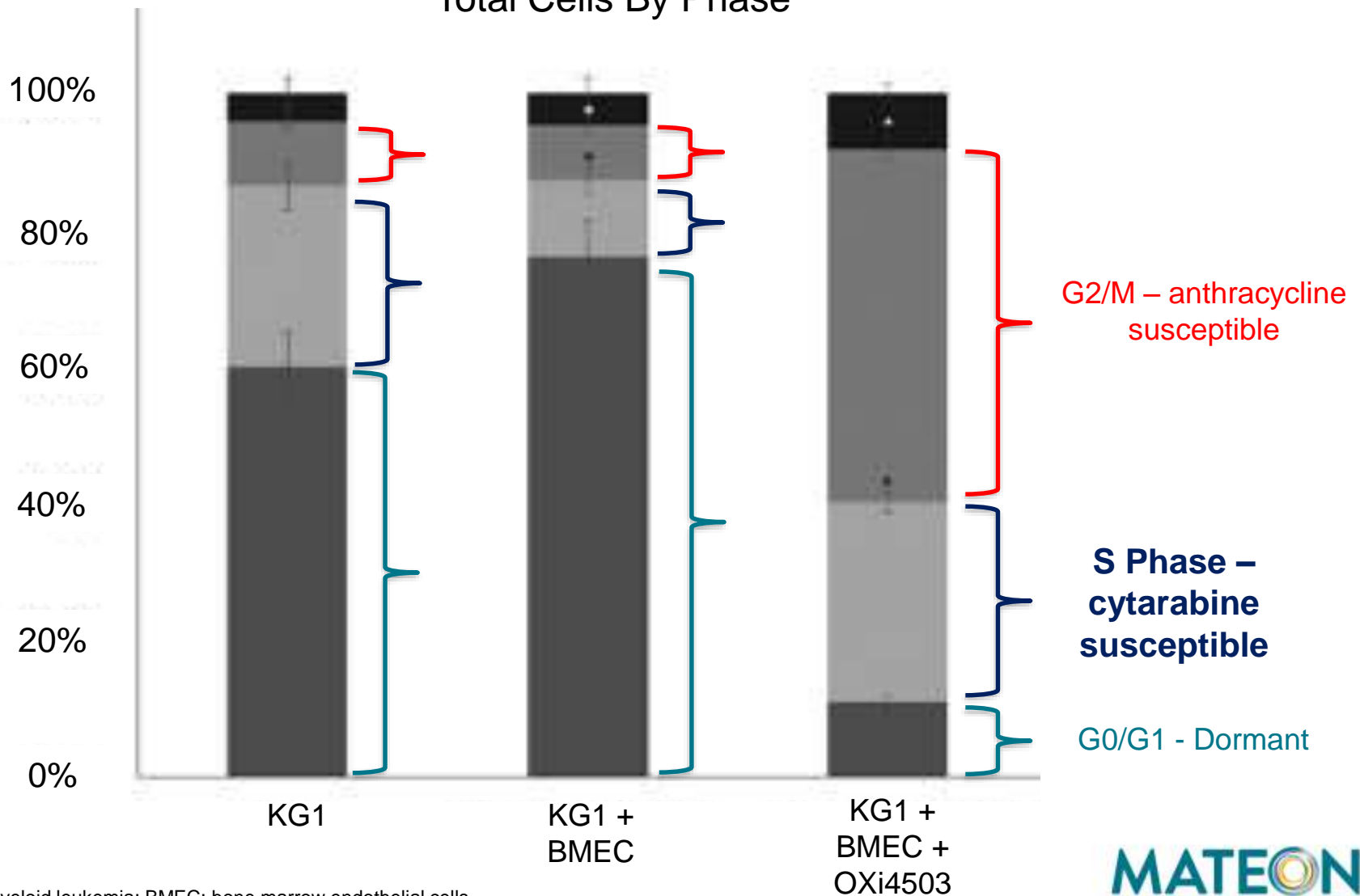
OXi4503



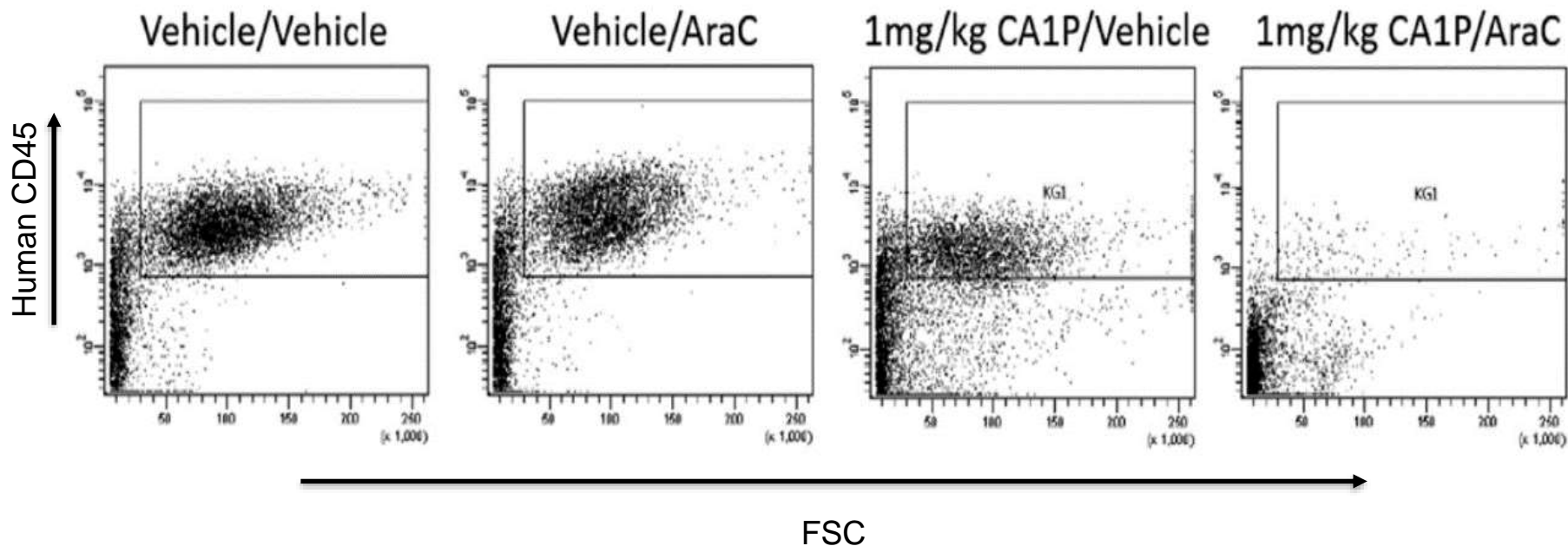
- OXi4503 disrupts AML-protecting BMECs
- OXi4503 reduces expression of VCAM-1, VE-cadherin, and BCAM

OXi4503 Forces AML Cells Into Active Cell Cycle

Total Cells By Phase



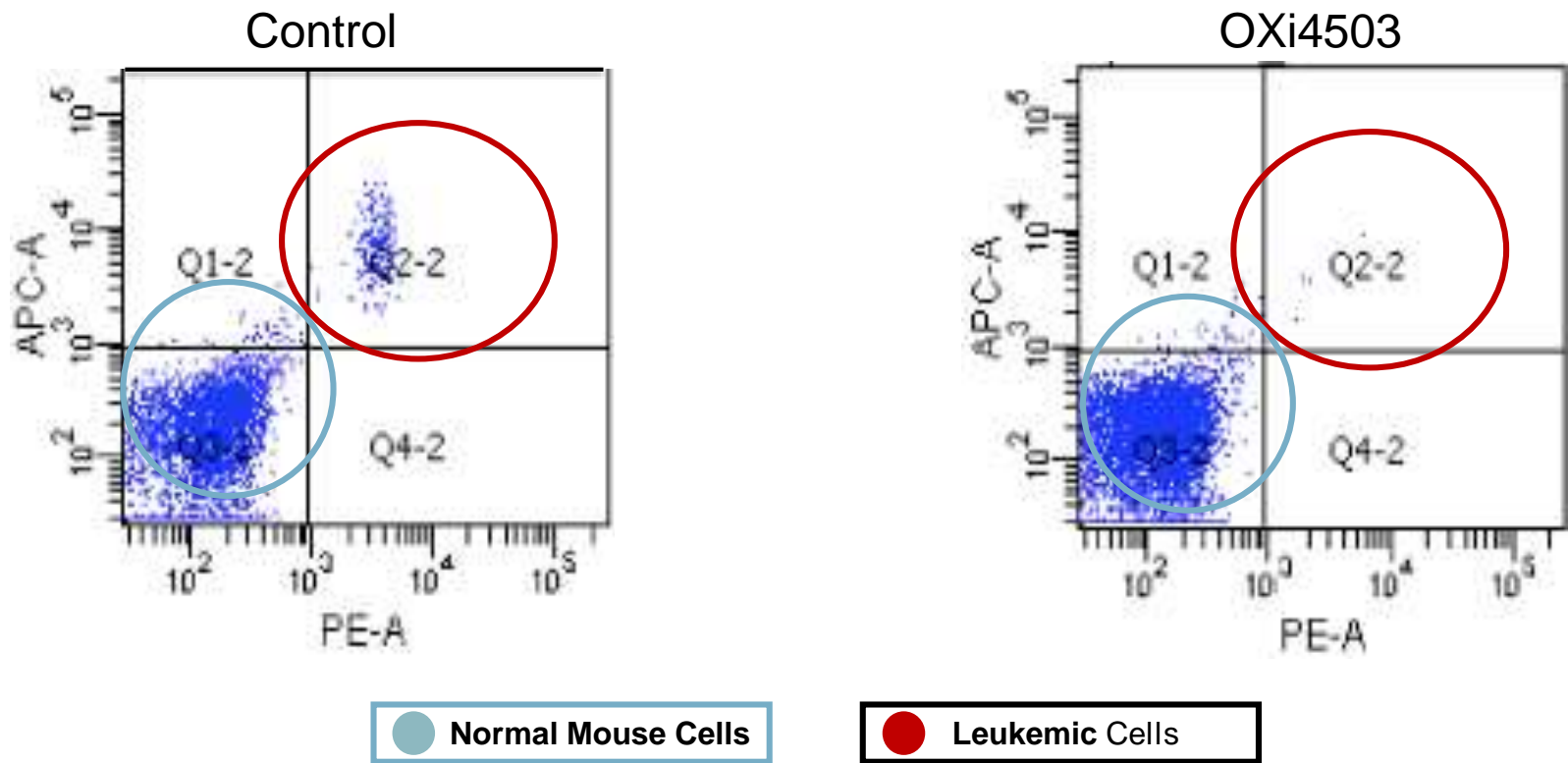
OXi4503: Enhances Efficacy of Cytarabine



SCID mice FLT-3 mutated human AML xenograft model

OXi4503: Efficacious as a Monotherapy

Directly Cytotoxic to Myeloid Blasts



SCID mice FLT-3 mutated human AML xenograft model

OXi4503 Clinical Studies

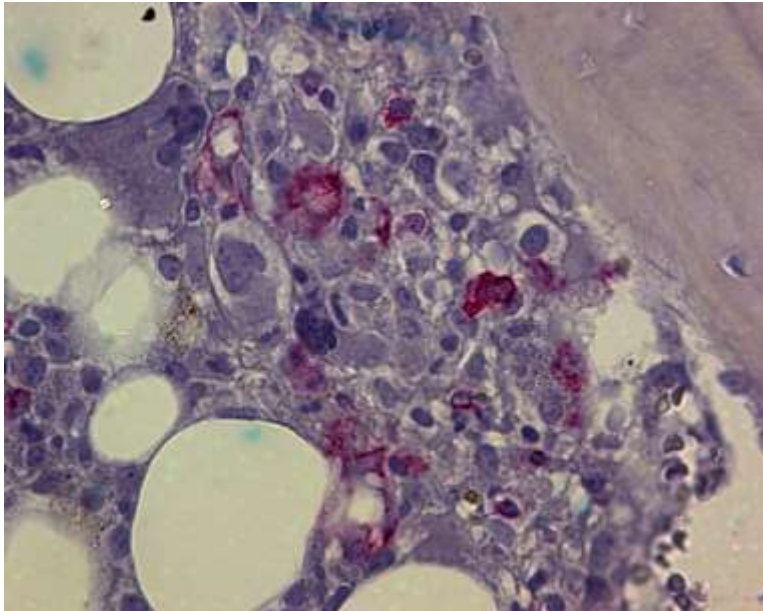
UF4503: AML Phase 1 Monotherapy Study

- Investigator-sponsored by University of Florida
- Patients with treatment refractory AML or MDS
- OXi4503 (weekly) dose escalation study
- 19 patients enrolled; dose range 2.5 mg/m² to 7.81 mg/m²
 - One patient (5%) had complete marrow remission
 - One patient (5%) had partial remission, stable 10 months
- AEs of interest were primarily coagulopathies, fever/flu-like symptoms, bone pain
- Maximum tolerated dose not reached

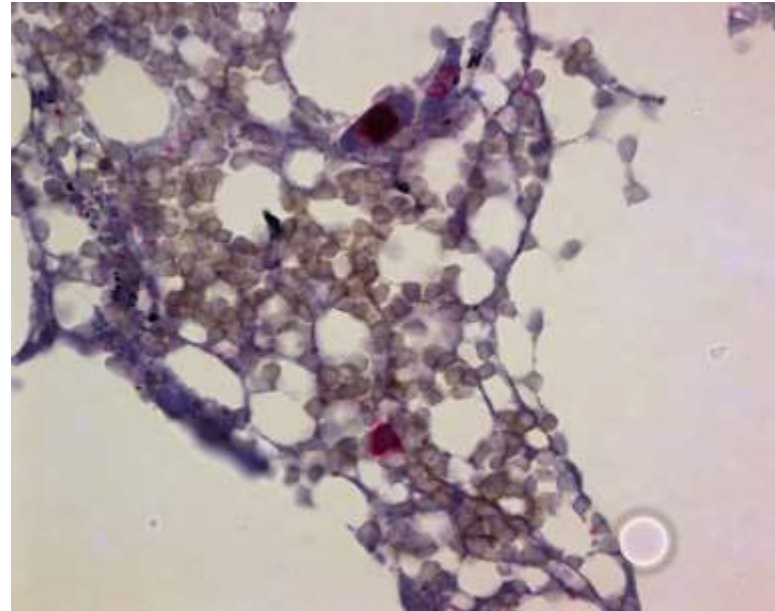
OXi4503 Monotherapy in AML

Bone Marrow Micrograph Showing Complete Remission

Baseline



Cycle 1 Day 28



A representative micrograph of bone marrow sections from one patient showing reduction in blasts (20% to < 5%) after 4 infusions of OXi4503. (Red=CD34, Mag 60X)

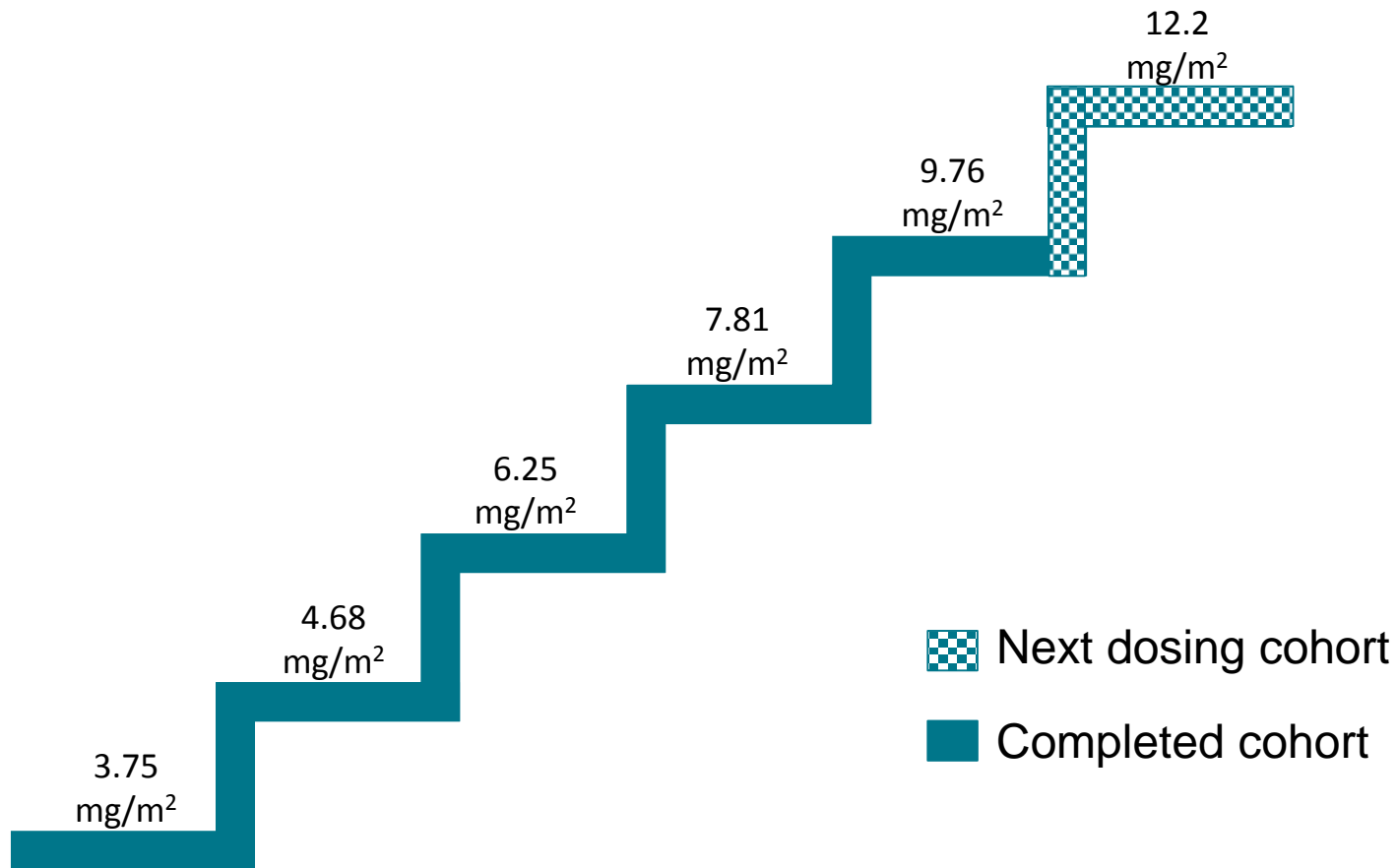
UF4503: Phase 1 OXi4503 in AML and MDS

Drug-related Adverse Events (Grades ≥ 3 ; N=18)

Adverse Events	N (%)
D-dimer Elevation	15 (83)
Bone Pain	7 (39)
DIC	5 (28)
Febrile Neutropenia	5 (28)
Flu-Like Symptoms (F/C/NS)	5 (28)
INR Increased	5 (28)
Thrombocytopenia	5 (28)
Leukopenia	4 (22)
PTT prolonged	4 (22)
AST Increased	3 (17)
Anemia	2 (11)
Fibrinogen Decreased	2 (11)
Headache	2 (11)
Lymphopenia	2 (11)
Nausea/Vomiting	2 (11)
Neutropenia	2 (11)

OX1222: Phase 1b Dose Escalation

Relapsed/Refractory AML and MDS Patients



OXi4503 (Days 1 and 4 of 28 day cycle) dose escalation study in combination with 1 g/m²/day x 5 days cytarabine

OX1222 Summary of Results

Cohort (Dose)	n	CR%	PR Rate	ORR	Ongoing Response
Cohort 1 (3.75 mg/m ²)	6	17%	0%	17%	1
Cohort 2 (4.68 mg/m ²)	4	25%	0%	25%	0
Cohort 3 (6.25 mg/m ²)	4	25%	25%	50%	1
Cohort 4 (7.81 mg/m ²)	3	0%	33%	33%	0
Cohort 5 (9.76 mg/m ²)	4	50%	0%	50%	2

Complete Remissions in High Risk Patients

Cohort (Dose)	Subject	Age	Cytogenetics	Cycles*	Response
Cohort 1 (3.75 mg/m ²)	106-004	59	inv(3), del(5)	2	Complete Remission (cytogenetic); 13 months – ongoing
Cohort 2 (4.68 mg/m ²)	106-006	65	Trisomy 8	2	Complete Remission (morphologic); 7 months – ongoing
Cohort 3 (6.25 mg/m ²)	103-009	66	TP53, del(5q, 7q), Trisomy 8	2	Complete Remission (molecular); 5 months – ongoing
Cohort 5 (9.76 mg/m ²)	103-011	78	ETV6, SETBP1, U2AF1; VUS in DNMT3A	1	Complete Remission (morphologic)
Cohort 5 (9.76 mg/m ²)	107-003	68	Trisomy 8, inv(16) t(16;16); CBFB rearrangement	1	Complete Remission (cytogenetic)

*Number of cycles to induce complete remission

OX1222: Most Common Adverse Events

Adverse Event	N	%
Febrile neutropenia	10	56%
Pyrexia	9	50%
Nausea	7	39%
Anaemia	6	33%
Diarrhoea	6	33%
Chills	5	28%
Fatigue	5	28%
Hypotension	5	28%
Neutrophil count decreased	5	28%
Platelet count decreased	5	28%
Vomiting	5	28%
Hypokalaemia	4	22%
Pleural effusion	4	22%

OX1222: Grade 3+ Related Adverse Events

Adverse Event	N	%
Neutrophil count decreased	5	28%
Platelet count decreased	5	28%
Febrile neutropenia	4	22%
Anaemia	3	17%
White blood cell count decreased	2	11%

OXi4503: Intellectual Property

Patent No.	Type	Location	Expiration
US 9040500 Japan 5302328 EU 2219451	Method for treating hematopoietic neoplasms	US, Canada, Australia, Japan, EU	2028 (2033 with extension)
US 7078552 EU 1278758	Composition of matter	US, Canada, EU	2021 (2026 with extension)
NA	Orphan exclusivity granted – AML	US	7 years after approval
NA	Orphan exclusivity granted – AML	EU	10 years after approval

OXi4503: Pathway to Approval



- Randomized Phase 2 study
 - N = ~50; OXi4503 combination vs cytarabine alone
 - Primary endpoint = response rate
 - Select a dose from Phase 1 study
- Pivotal Phase 3 study
 - Primary endpoint = overall survival

OXi4503 Summary

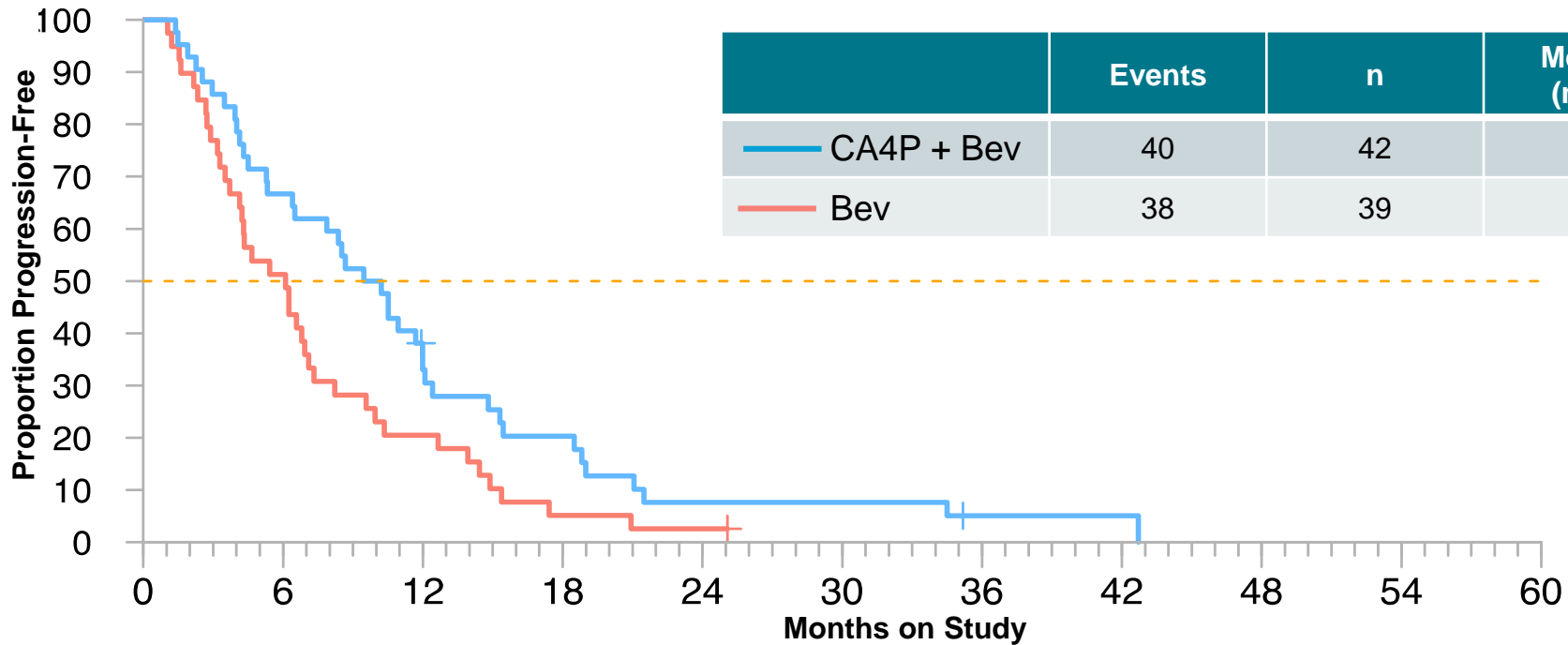
- Dual-mechanism of action
 - Eliminates protective effect of endothelial cells
 - Cytotoxic in myeloid lineage cells
- Initial evidence of efficacy in AML
 - Complete Response = 5/21 (24%) relapsed/refractory AML patients including low-dose cohorts
- Well-tolerated to date
- Pathway to approval
 - Complete Phase 1b dose escalation
 - Initiate Phase 2 randomized controlled study



CA4P for the Treatment of Platinum-resistant Ovarian Cancer

Study GOG-0186I Nov2015

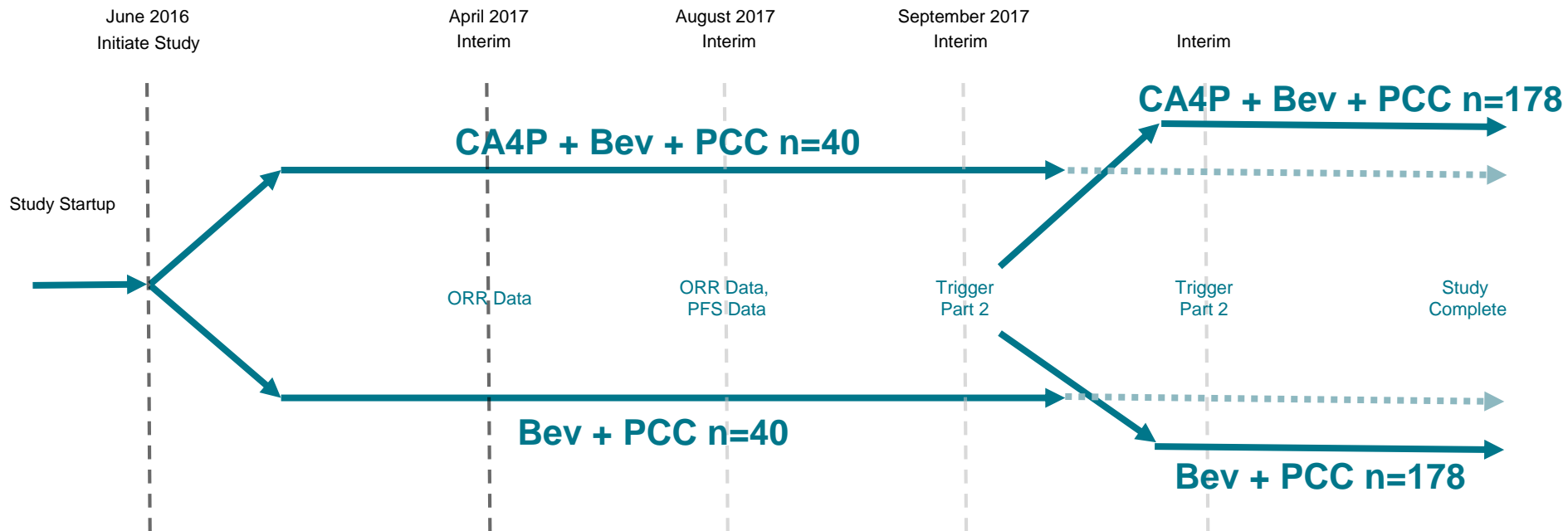
Progression-free Survival (Measurable Disease)



# at Risk		0	6	12	18	24	30	36	42
Active	42	21	5	3	1				
Control	39	9	2	0	0				

Treatment Comparison	HR	95% CI	Log-rank P Value
Active vs. Control	0.600	[0.38, 0.95]	0.027

FOCUS: Phase 2/3 Study Design prOC



- Regular interim analyses to detect efficacy and test powering assumptions
- Part 2 triggered based on interim analyses

FOCUS Results: Demographics

Interim Analysis 2

	Active (CA4P) N=19	Control N=21
Age (years)	67.6	61.0
ECOG Status		
0	63.2%	57.1%
1	36.8%	38.1%
Mean Baseline Tumor Size (cm)	6.86	7.38
Number Prior Treatments		
1	26.3%	33.3%
2	31.6%	33.3%
3	21.1%	14.3%
≥4	21.1%	19.0%

FOCUS Results: Adverse Events

Interim Analysis 2

	Active (CA4P) N=19	Control N=21
BP Increased	57.9%	9.5%
Hypertension	52.6%	28.6%
Nausea	47.4%	19.0%
Fatigue	42.1%	23.8%
Vomiting	31.6%	14.3%
Cough	26.3%	4.8%
Abdominal distension	21.1%	9.5%
Constipation	21.1%	19.0%
Decreased appetite	21.1%	4.8%
Dehydration	21.1%	9.5%
Oedema peripheral	21.1%	19.0%
Pruritus	21.1%	9.5%
Stomatitis	21.1%	9.5%

Note: Occurring in >3 patients, more in active than control

FOCUS Results: Grade 3+ Adverse Events

Interim Analysis 2

	Active (CA4P) (N=19)			Control (N=21)		
	Grade 3	Grade 4	Grade 5	Grade 3	Grade 4	Grade 5
BP Increased	31.6%	0	0	9.5%	0	0
Hypertension	21.1%	0	0	23.8%	0	0
Dehydration	10.5%	0	0	0	0	0

Note: Occurring in >1 patient

FOCUS Results: Efficacy

Interim Analysis 2

- PFS favored CA4P
 - Median PFS of 202 days in CA4P treated group versus 151 days in placebo group (HR=0.68; p=0.46)
- PR rate of 25.0% in CA4P treated group versus 31.6% in placebo group
 - Stable disease of 56.3% in CA4P group versus 57.9% in placebo group

CA4P - Checkpoint Inhibitors

Mechanism of Action of CA4P in Immunology

Rapid induction of tumor ischemic necrosis



Increased release of tumor antigens



Increased tumor antigen presentation to T cells



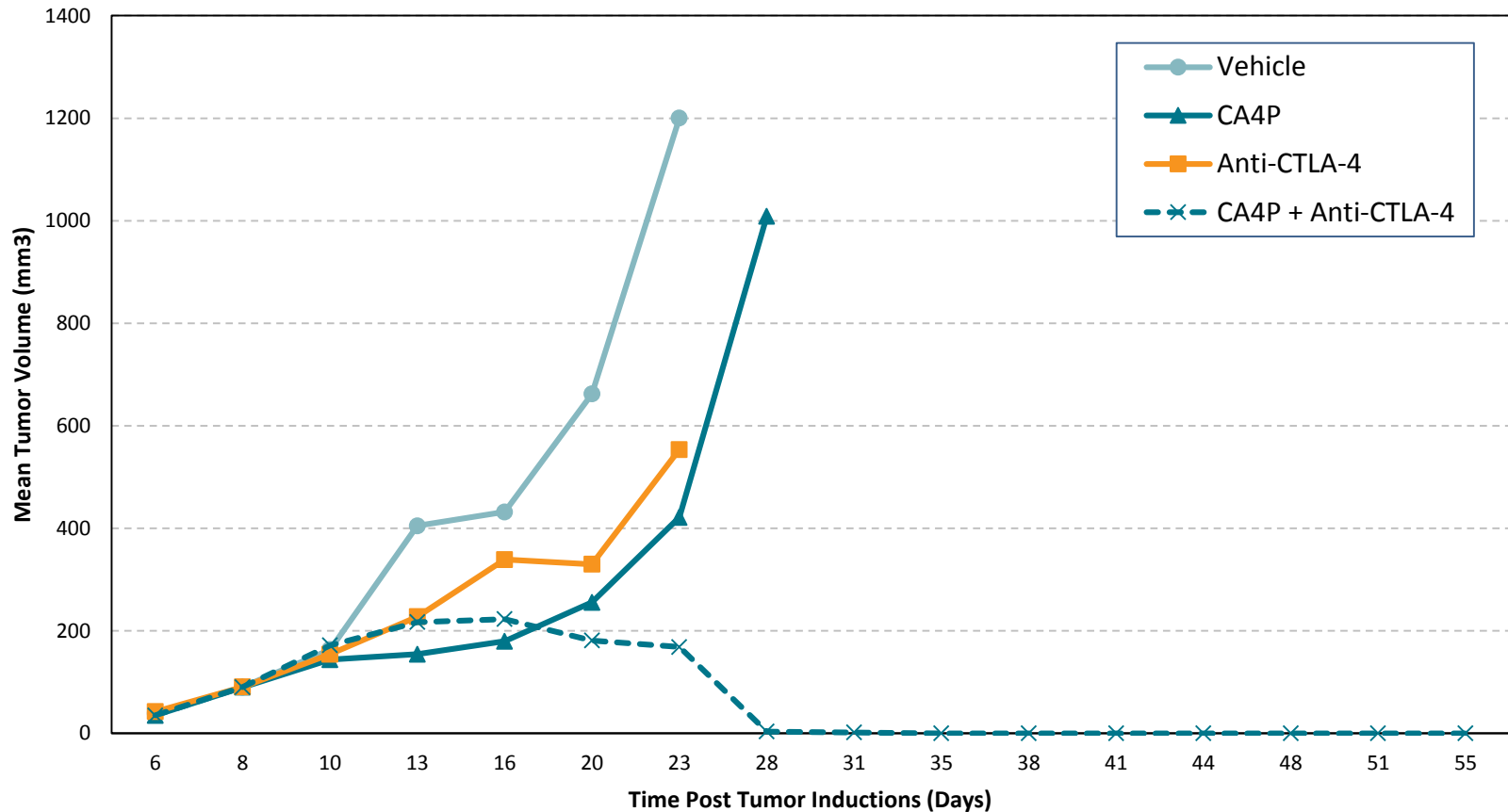
Increased tumor specific T cell cytotoxicity



Increased efficacy of checkpoint inhibitors

EMT-6 Mammary Model

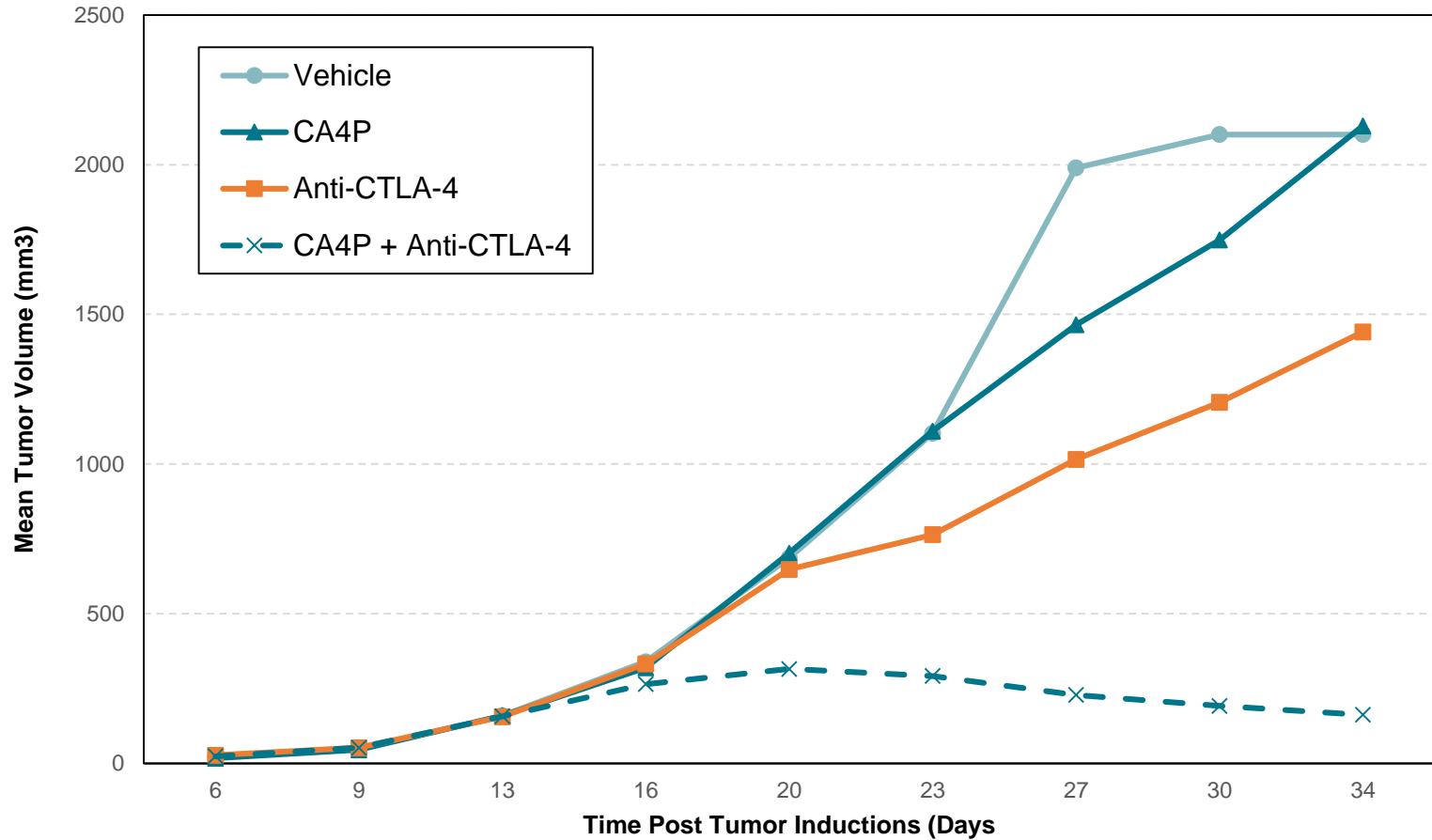
Initial Tumor Volume = ~50 mg



Animals tumor free at study completion: 2/8 in anti-CTLA4 group vs 7/8 in CA4P plus anti-CTLA4 group

CT-26 Colon Model

Initial Tumor Volume = ~150 mg



Summary Immuno-oncology Data

- CA4P increases the efficacy of checkpoint inhibitors
- Effects in both small (~50 mg) and large (~250 mg) tumors
- Further studies planned

Finances

- Stock traded on OTCQX Market: MATN
- \$5 million cash at 30Jun2017
 - Limited cash runway into 4Q2017
 - Expect additional meaningful clinical data in the near term
 - FOCUS – interim analysis 3
 - OX1222 – final data from cohort 5
 - No preferred stock or debt outstanding
- 26.5 million shares outstanding
- S-1 Registration Statement filed recently with SEC
 - HC Wainwright engaged as agent

Investment Highlights

- Orphan oncology focused biopharmaceutical company
- Anti-vascular approach to targeting cancer
- Two compounds in active clinical development
 - CA4P – platinum-resistant ovarian cancer (prOC)
 - OXi4503 – acute myeloid leukemia (AML)
 - Additional attractive indications can be pursued
- Optimal results with combination therapy
 - prOC – with anti-angiogenic agents
 - AML – with antimetabolic agents
- CA4P increases efficacy of checkpoint inhibitors in preclinical studies

Key Near-term Milestones

- Phase 2/3 FOCUS (prOC) study – 3rd interim analysis
- Phase 2/3 FOCUS (prOC) study – 4th interim analysis
- Phase 1b OX1222 (AML) study – Cohort 5 final data



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