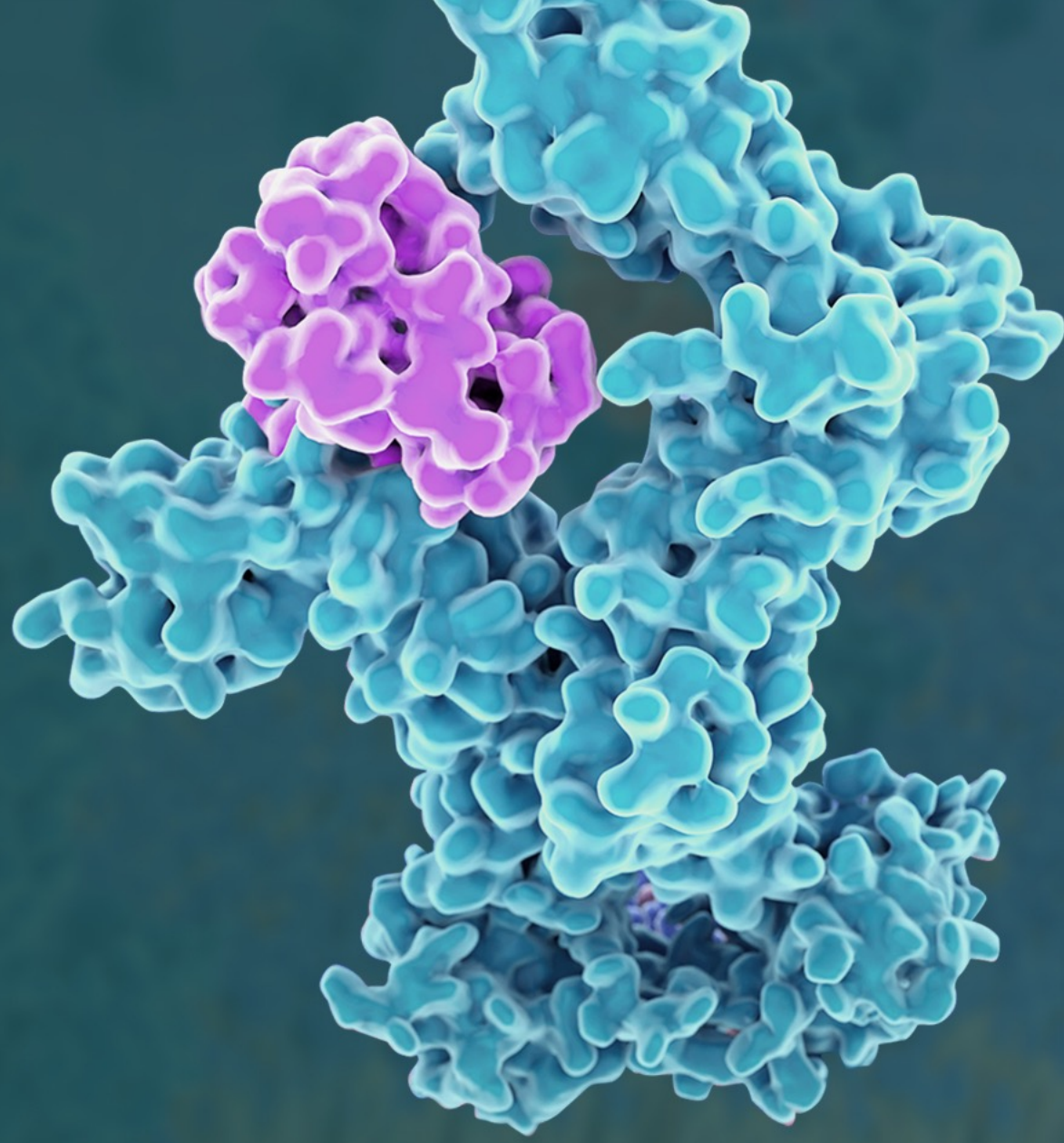
Q2, 2023

Evolutionary Cytokines Revolutionary Medicines



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Investment Highlights

Regular Clinical Data Updates from MDNA11 Program Expected

Superkine Platform:
Drug Discovery Engine

Directed evolution **enhances the desired properties** of IL-2, IL-4, & IL-13 to generate Superkines

Protein fusion can **improve PK, add an MOA, or confer new capabilities** to Superkines

IL-2, IL-4 , & IL-13 are known to modulate immune activity against **2,000 different diseases**

MDNA11: "Beta-only" & Long-acting IL-2 Super-agonist in Phase 1/2

Super-agonist against IL-2R, a **clinically validated anti-cancer target**

Enhanced IL-2Rβ binding and lack of IL-2Rα affinity position MDNA11 to be **best-in-class**

Clinical data updates expected **at regular intervals**

MDNA55: Phase 3 Ready Empowered IL-4 Superkine

Targeting recurrent glioblastoma, the most aggressive form of brain cancer

Phase 2b data show **~100% improvement in median OS** vs. a matched external control arm

Pursing a **partnership** to advance development

BiSKIT Platform:
Bifunctional **S**uper**K**ines for **I**mmuno**T**herapy

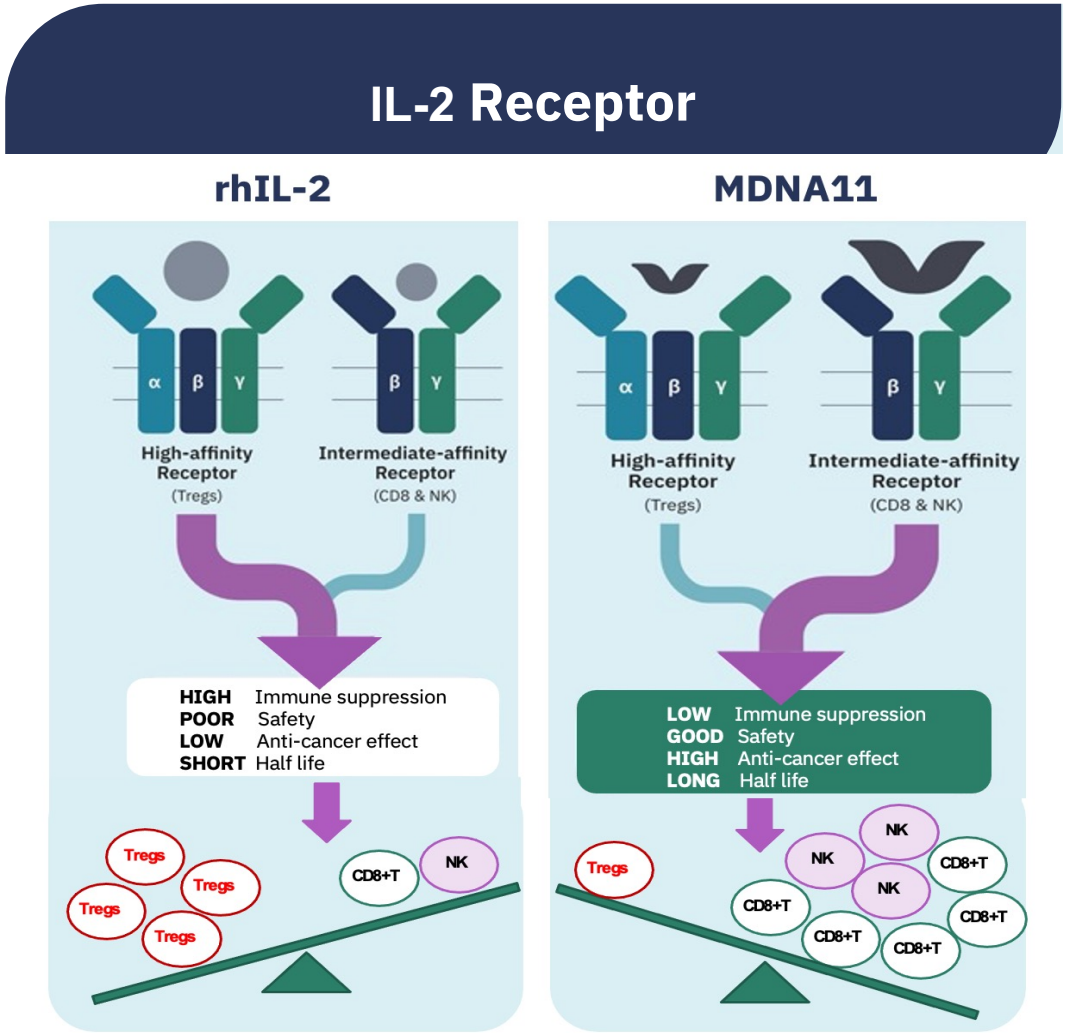
Fusion of two Superkines or a Superkine and an antibody (e.g. a checkpoint inhibitor)

Incorporate **two synergistic MOAs** into a single molecule

MDNA11

“Beta-only” & Long-acting IL-2 Super-Agonist for Solid Tumors

Targeting IL-2 Receptor Subunits in Cancer Therapy



The IL-2 receptor (IL-2R) consists of three subunits

- IL-2Rα (CD25)
- IL-2Rβ (CD122)
- IL-2Rγ (CD132)

Stimulation of IL-2Rβ

- Key for the activation of cancer killing immune cells such as CD8+ T cells, naïve T cells, and NK cells.

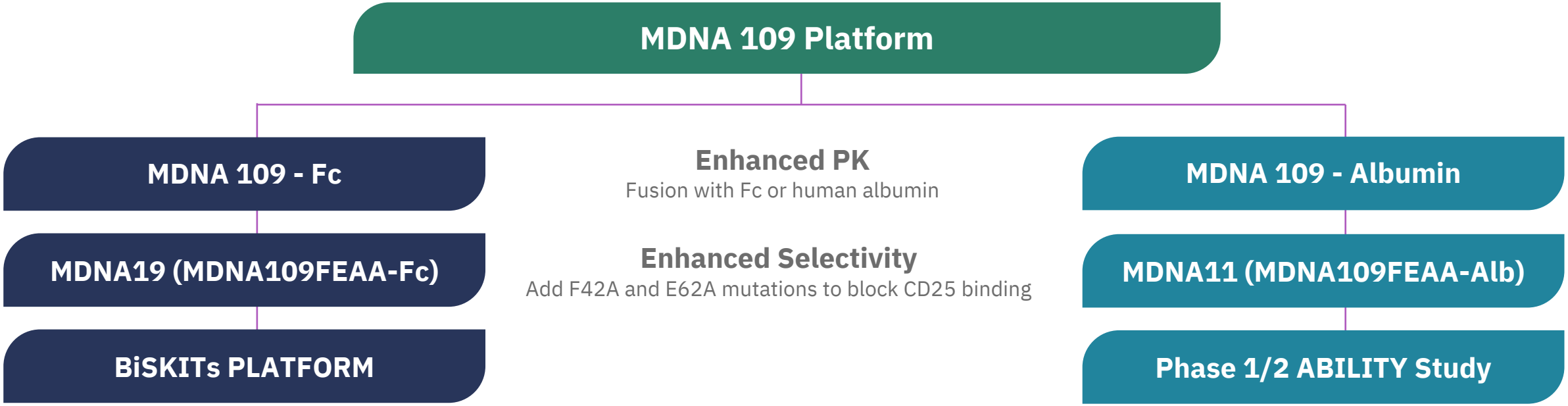
Stimulation of IL-2Rα

- Leads to activation of immunosuppressive Tregs, which abrogate the anti-tumor response
- Causes extreme toxicity

Proleukin (recombinant human [rh] IL-2), which selectively stimulates IL-2Rα, is approved for the treatment of metastatic melanoma and renal cell carcinoma

Engineering MDNA109 to Extend PK & Enhance Receptor Selectivity

Enhanced IL-2Rβ Binding and Abolish IL-2Rα Binding; Fusion to Albumin to Extend Half-Life and Bioavailability

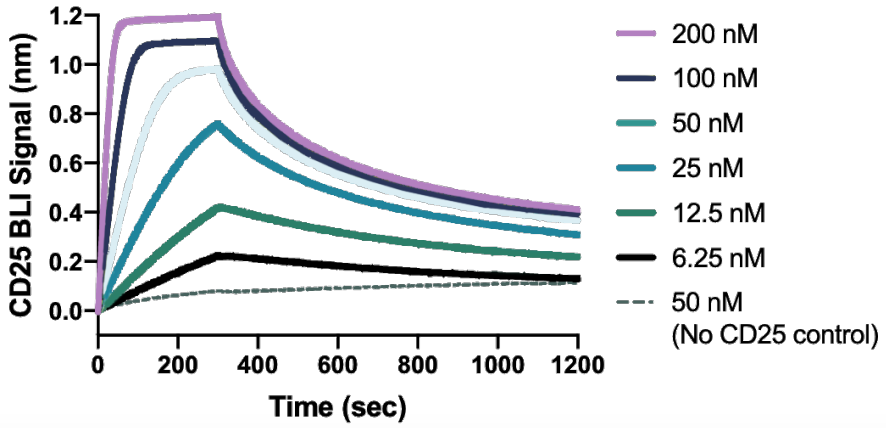


	Enhanced affinity for IL-2Rβ	IL-2Rα affinity abolished
	K_D(nM)	K_D(nM)
rhIL-2	210	24
MDNA11	6.6	No binding

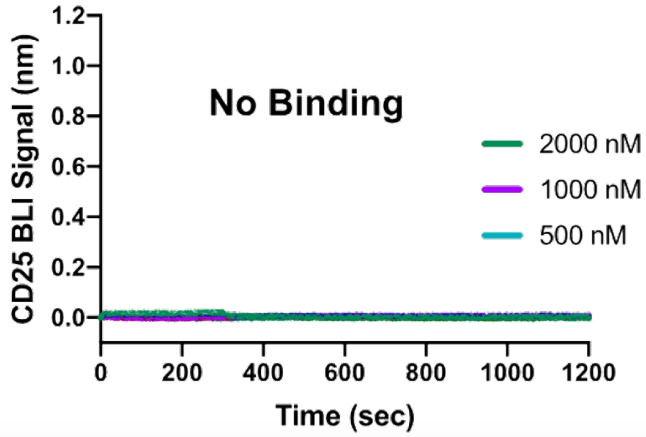
MDNA11's IL-2 Binding is Highly Differentiated vs. rhIL-2

No IL-2Rα (CD25) Binding and Enhanced Affinity and Selectivity for IL-2Rβ (CD122) Compared to rhIL-2

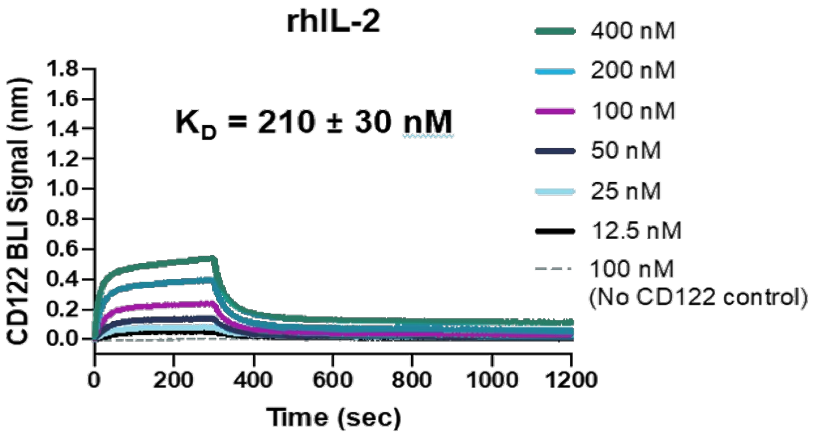
rhIL-2 – IL-2Rα Binding



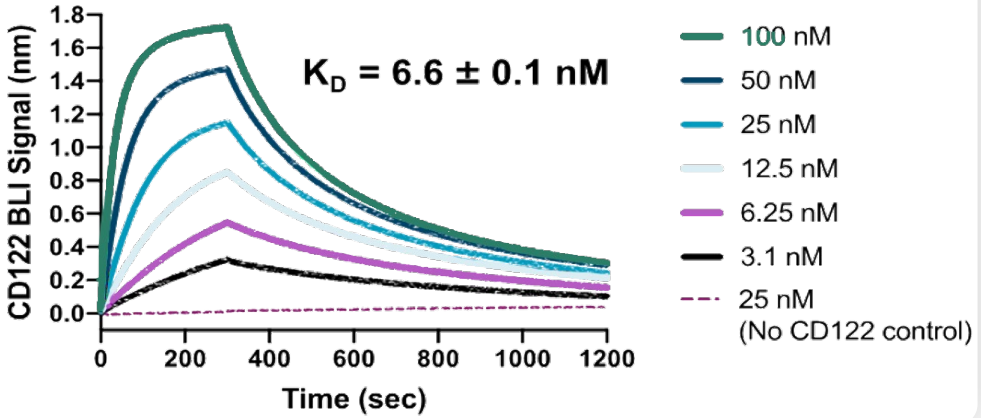
MDNA11 – IL-2Rα Binding



rhIL-2 – IL-2Rβ Binding

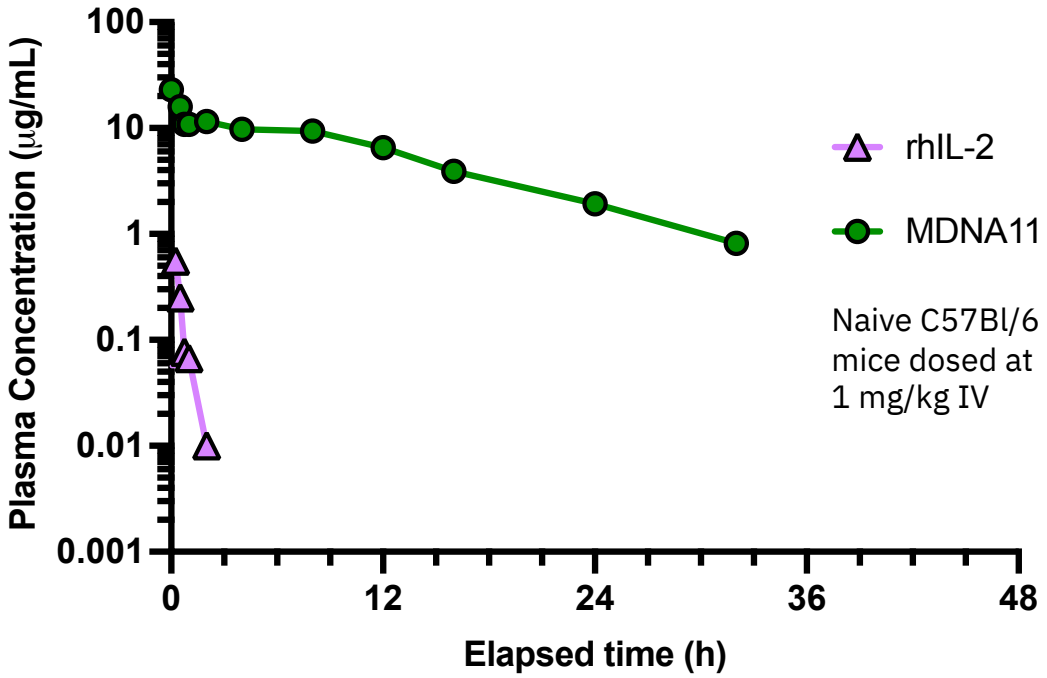


MDNA11 – IL-2Rβ Binding



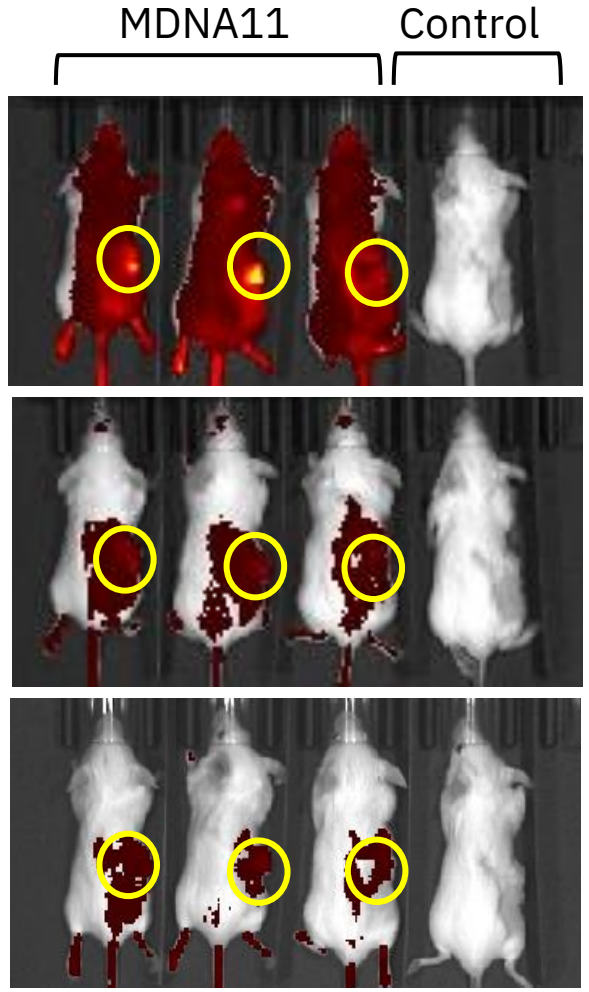
MDNA11 Durably Accumulates In Solid Tumors In Vivo

PK Profile in Mice



	C_{max} (µg/mL)	AUC (µg.hr/mL)	T_{half} (hr)
rhIL-2	5.77	1.07	0.28
MDNA11	23.02	182.3	6.83

MDNA11 Imaging in CT26 Tumor Model



MDNA11 labelled with VivoTag800; IV dosing (1 mg/kg); Tumor size: 150-200 mm^3

- **Tumor exposure of MDNA11 is > 15x longer than its serum half-life**

MDNA11 –Best in Class Potential

MDNA11's strong anti-tumor activity, preliminary safety profile and convenient outpatient dosing regimen paves the way for a potential best-in-class therapy with significant commercial potential

	MDNA11	Proleukin[1]	NKTR-214	SAR'245[2]	ALKS 4230[3]	WTX-124[5]	XTX202[6]	STK-012[7]
No binding to IL-2Rα	√	✗	✗	√	√	✗	√	✗
Enhanced IL-2Rβγ Binding	√	✗	✗	✗	✗	✗	✗	✗
QW, Q2W or Q3W Dosing	√	✗	√	√	✗	Unknown	√	√
Tumor Accumulation	√	✗	✗	✗	✗	✗	✗	✗
No Pegylation Liabilities	√	√	✗	✗	√	√	√	✗
Pipeline Potential	√	√	✗	✗	✗	✗	✗	√

[1] Nature Rev. Drug Discovery (2021). [2] Ptacin et al., Nat Comm (2021). [3] Lopes et al., JITC (2020). [5] Nirschl et al, Cancer Immunol Res (2022). [6] O'Neil et al., ASCO (2021). [7] Oft et al, AACR (2021). Additional information from https://clinicaltrials.gov/

Phase 1/2 ABILITY Study Schema: Enrolling Dose Level 6

MDNA11

Monotherapy Dose Escalation

N ~ 24: Select tumors

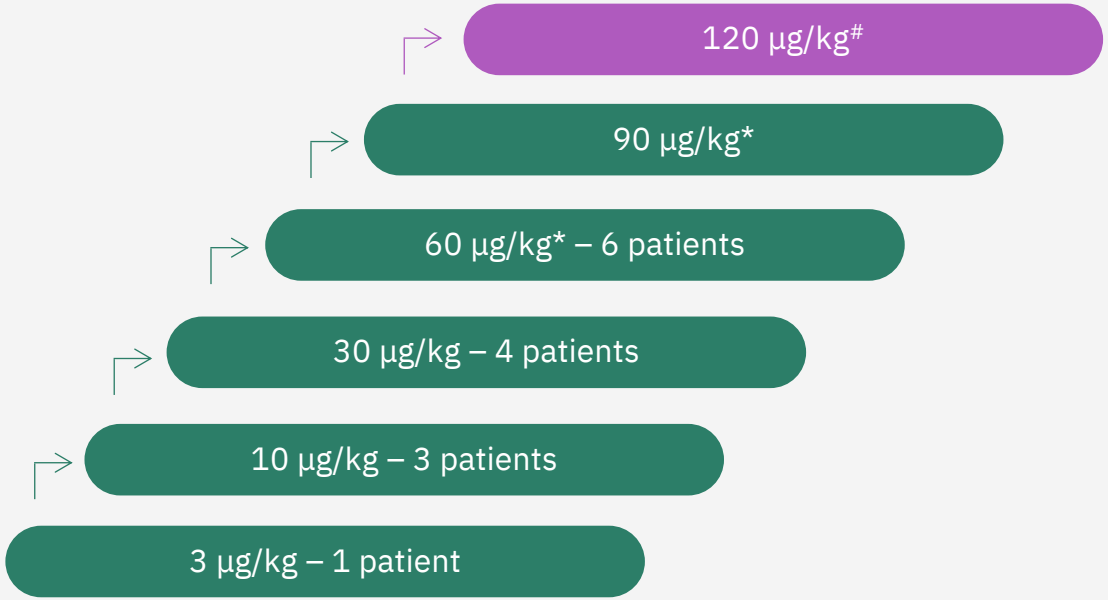
IV Infusion, Q2W

Modified, accelerated 3+3 design

Intra-patient dose escalation permitted on sponsor approval

DLT assessment

Identify RP2D



MDNA11 Monotherapy Dose Expansion

N~ 40: (Melanoma and other select tumors)

MDNA11 administered alone at RP2D via IV infusion Q2W

Further evaluation of safety and tolerability

Signals of anti-tumor activity

MDNA11 + Pembrolizumab Dose Expansion

N~ 40: (Melanoma and other select tumors)

Safety run-in

MDNA11 administered at RP2D in combination with pembrolizumab via IV infusion

Signals of anti-tumor activity

*Step-up dosing utilized: two priming doses of 30µg/kg given before target dose.
#Step-up dosing utilized: 30, 60, and 90 µg/kg priming doses given before target dose.

Patients in Dose Escalation Cohorts Heavily Pre-treated

All patients have advanced solid tumors and failed prior therapy

Demographics/Performance	
Median age (range), years	**63 (27-78)**
Male (%)	**11/14 (79%)**
Baseline ECOG = 0	**10/14 (71%)**
Baseline ECOG = 1	**4/14 (29%)**

Prior Systemic Therapies	
Prior Lines of Therapy: 1-2	**9/14 (64%)**
Prior Lines of Therapy: 3-4	**5/14 (36%)**
Prior use of immunotherapy	**11/14 (79%)**
Prior use of targeted therapy	**4/14 (28%)**
Prior use of chemotherapy	**7/14 (50%)**

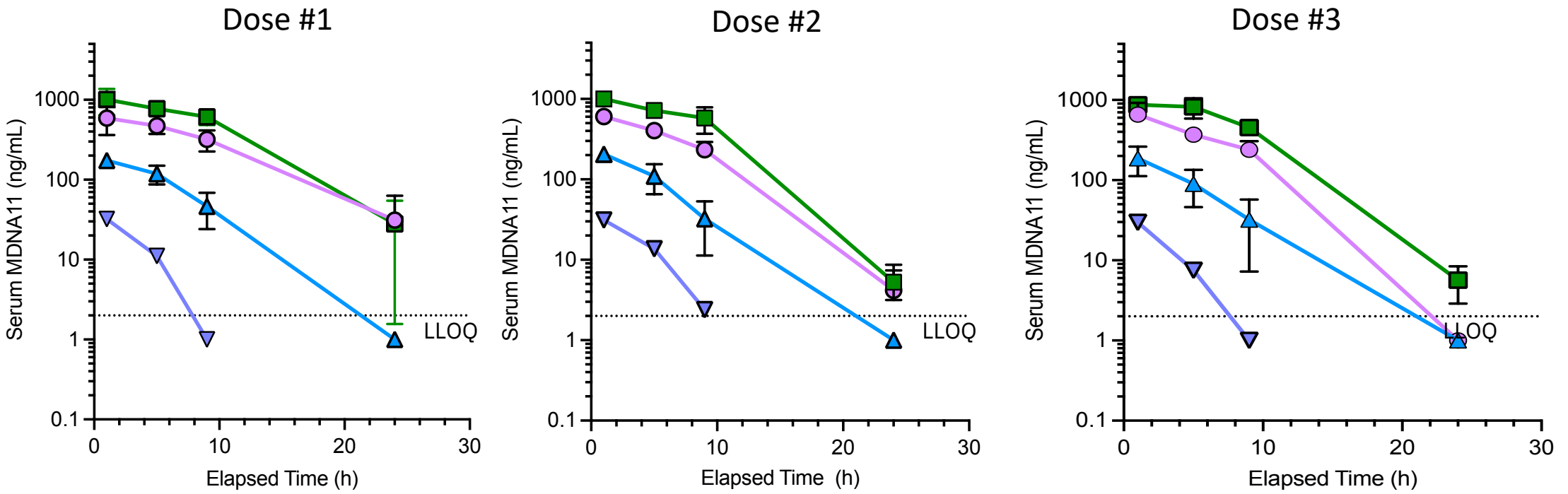
Primary Cancer Diagnosis	
Melanoma	**7/14 (50%)**
Renal Cell Carcinoma (non-clear cell)	**1/14 (7%)**
Pancreatic Ductal Adenocarcinoma (PDAC)	**2/14 (14%)**
Sarcoma	**2/14 (14%)**
Squamous Cell Carcinoma	**1/14 (7%)**
Gastro-esophageal Adenocarcinoma	**1/14 (7%)**

Data from all patients

enrolled in Cohorts 1-4

MDNA11 PK Profile in Cancer Patients

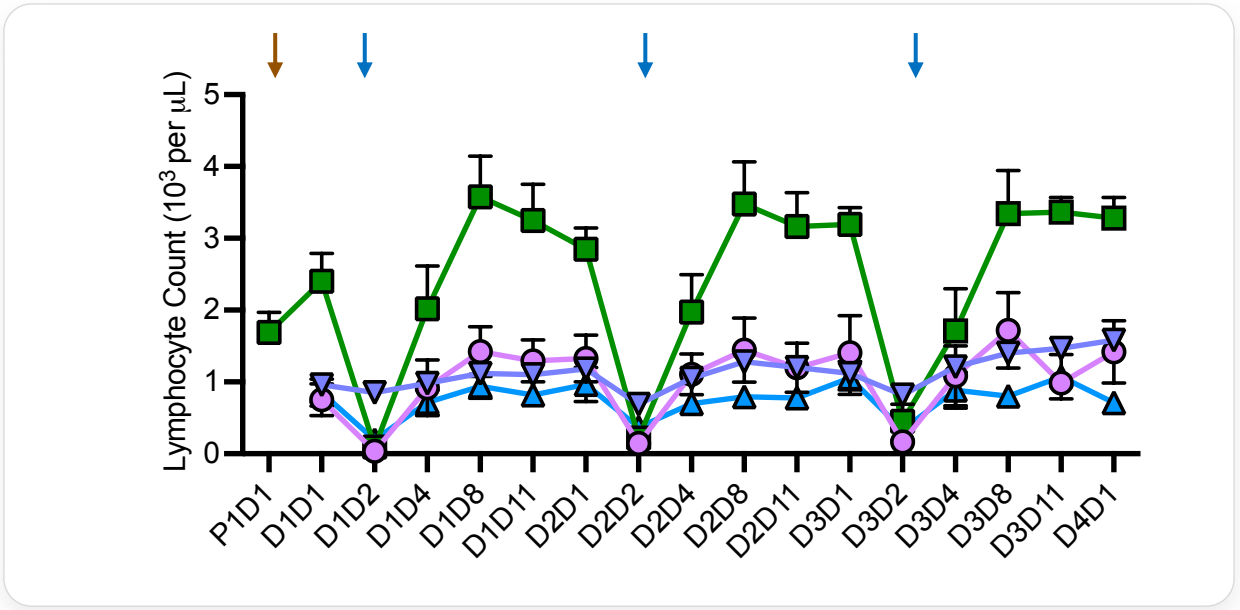
- MDNA11 PK exhibits saturable rapid clearance and a slower parallel linear clearance process
- Dose-dependent increase in exposure (C_{max} and AUC_{last})
- Variability is low between Dose 1-3, suggesting that there is no clinically significant ADA response



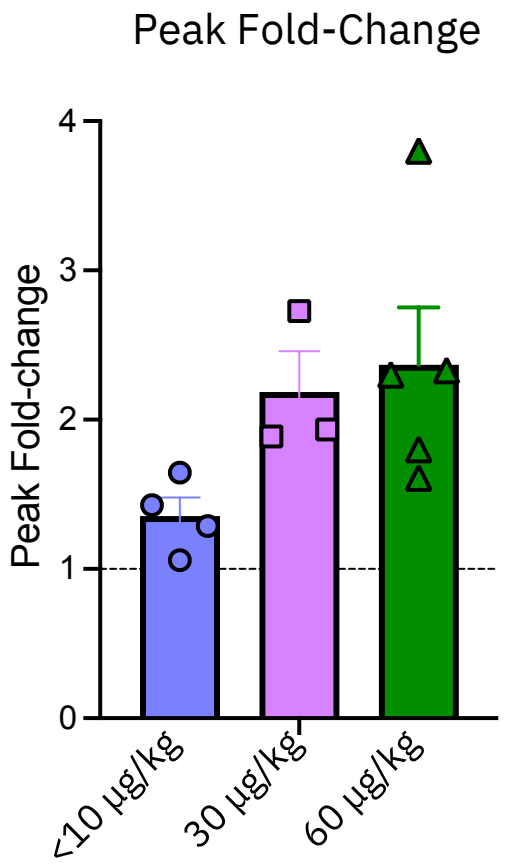
LLOQ = lower limit of quantification
Values < LLOQ plotted as 0.5 x LLOQ

MDNA11 Induced Lymphocyte Expansion

Expansion of cancer killing immune cells



	Average AUC (day.10³ cells/µL) (Average of Dose 1 & 2)
< 10 µg/kg	3
30 µg/kg	4.8
60 µg/kg	12.2



Peak fold-change relative to baseline.

Graph shows mean ± SEM

For < 10 µg/kg and 30 µg/kg, peak data for Dose 3

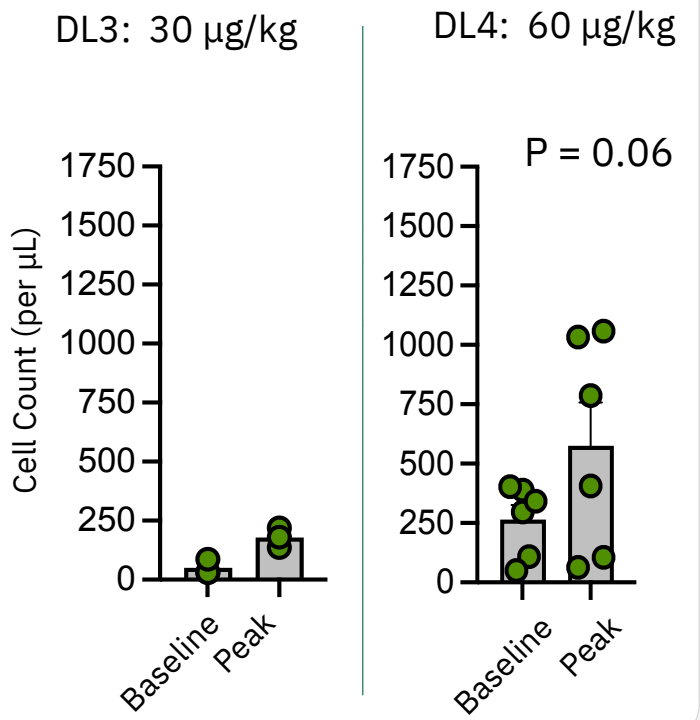
For 60 µg/kg, peak data for Target Dose 1

DL4 patients received 2 priming doses (30 µg/kg Q2W) prior to target dose (60 µg/kg Q2W)
Graph shows mean ± SEM. AUC measured as area between minimum lymphocyte count values

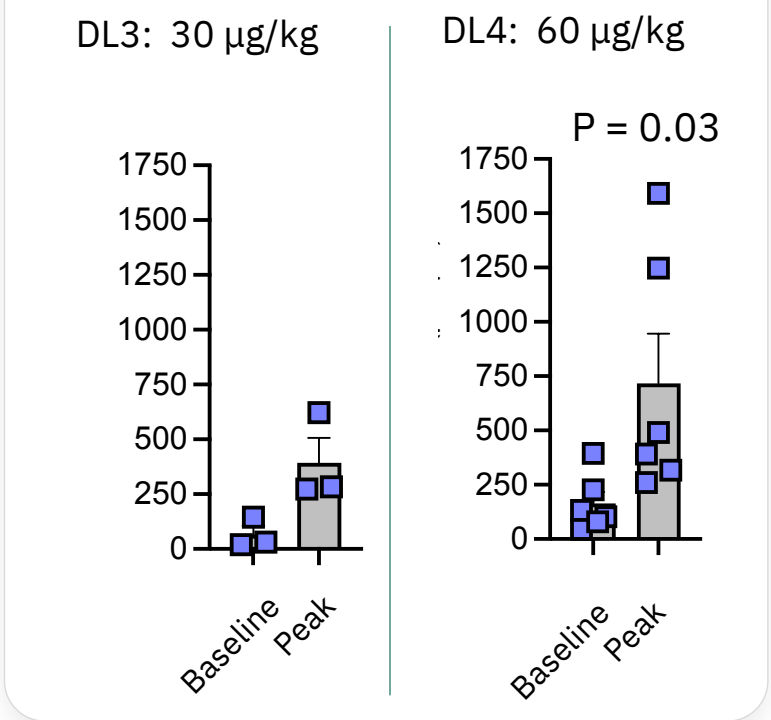
MDNA11 Preferentially Expanded CD8+ T & NK Cells Over Tregs

Peak fold change in cell count

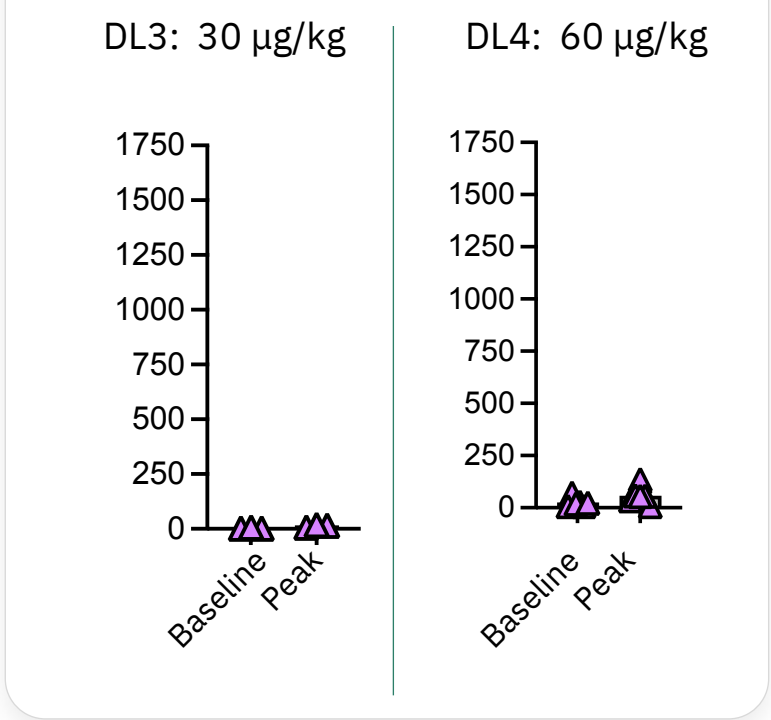
CD8+ T Cells



NK Cells



Tregs



Peak fold-change relative to baseline
Patients received 2 priming 30 µg/kg doses (Q2W) prior to the targeted 60 µg/kg (at 3rd administration).
Data shown for 30 µg/kg cohort are based on 3rd administration for comparison

MDNA11 Single Agent Safety Profile Across All Cohorts

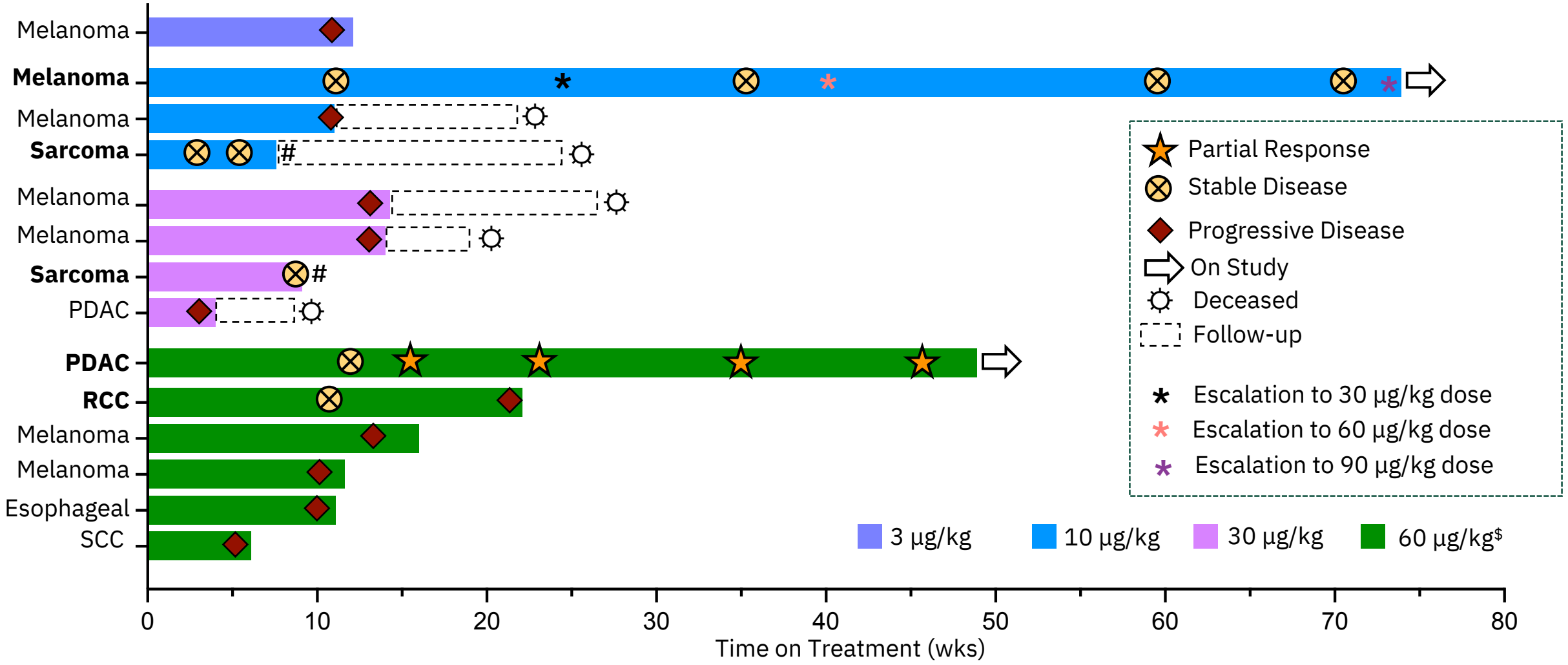
Preferred Term	Cohort 1 (3 µg/kg) N = 1	Cohort 2 (10 µg/kg) N = 3	Cohort 3 (30 µg/kg) N = 4	Cohort 4 (60 µg/kg) N = 6	Total N = 14
All Grades (> 20%)					
Infusion related reaction##	1 (100%)	2 (66.6%)	3 (75%)	5 (83.3%)	11 (78.6%)
Nausea		2 (66.6%)		5 (83.3%)	8 (57.1%)
Pyrexia		1 (33.3%)	2 (50%)	4 (66.6%)	7 (50%)
Fatigue		2 (66.6%)	2 (50%)	1 (16.6%)	5 (35.7%)
Diarrhea		1 (33.3%)	1 (25%)	2 (33.3%)	4 (28.6%)
Chills		1 (33.3%)	1 (25%)	1 (16.6%)	3 (21.4%)
Headache			1 (25%)	2 (33.3%)	3 (21.4%)
Grade 3-4 (> 5%)					
Alanine aminotransferase increase				1 (16.6%)*	1 (7.1%)
Blood bilirubin increase				1 (16.6%)*	1 (7.1%)
Hypotension			1 (25%)#		1 (7.1%)
Lymphocyte count decrease		1 (33.3%)$	1 (25%)$		2 (14.2%)

* Transient elevations resolving within 3-4 d; # Patient with adrenal insufficiency; $ Transient expected lymphopenia immediately after MDNA11 administration; ## Infusion related reaction mostly comprised fever, tachycardia and chills

- **Majority of AEs were Grade 1-2 (92%) and transient, resolving within 1-2 days**

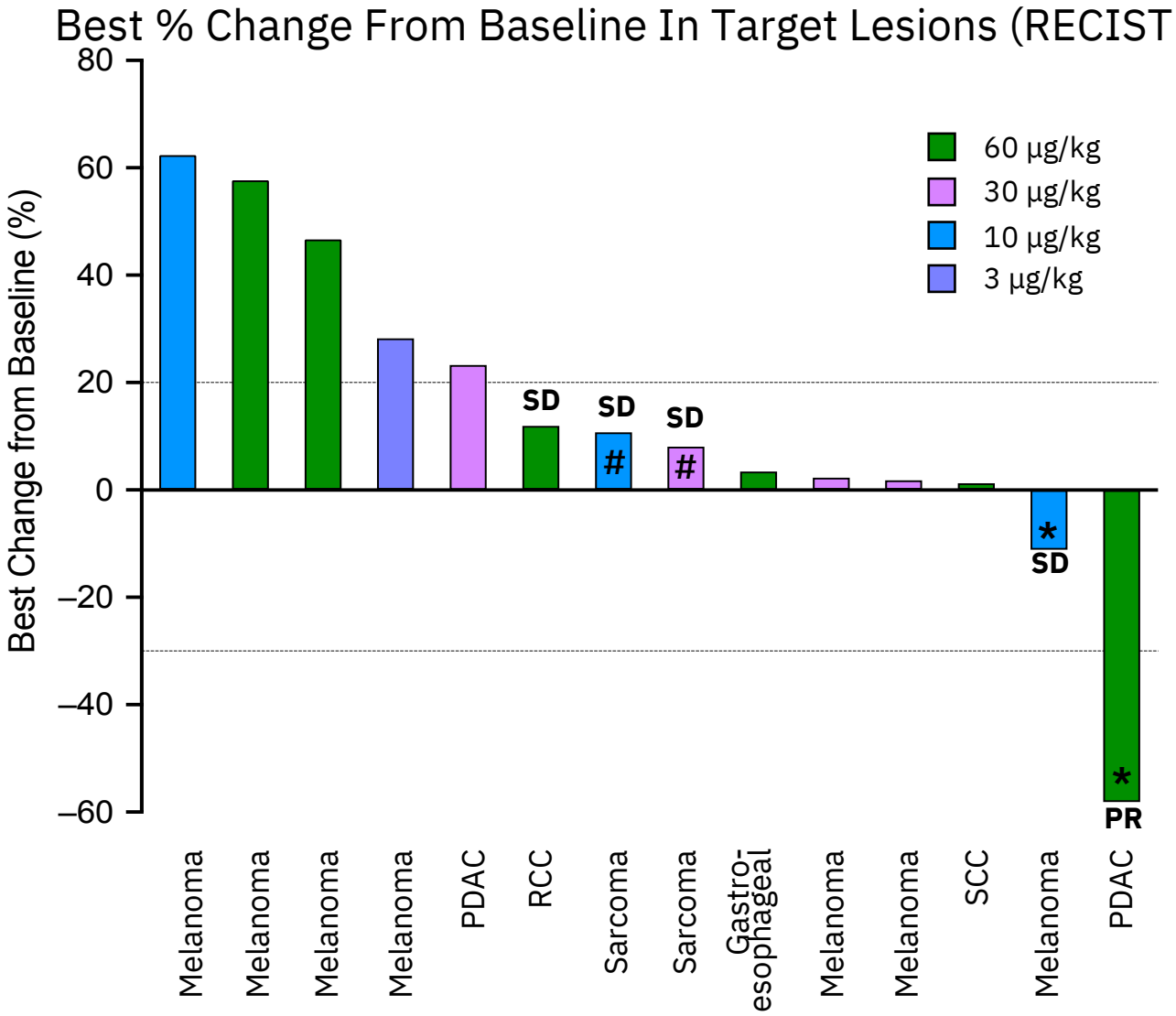
Treatment Duration and Tumor Response

Tumor control in 5 of 14 evaluable patients despite low dose levels and heavily pre-treated patients



Target lesions exhibit SD; treatment ended due to clinical progression or withdrawal; $ Patients received 2 x 30 µg/kg (Q2W) prior to target dose of 60 µg/kg

Single Agent Activity in Dose Escalation



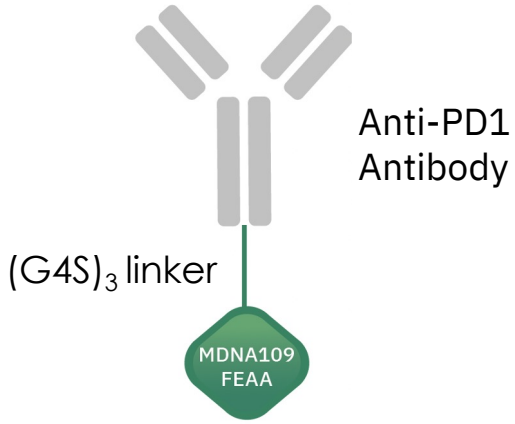
- **Confirmed partial response with MDNA11 in Cohort 4:**
  - **Continued deepening of target lesion reduction on MDNA11 treatment (59% reduction to date)**
  - **Complete regression of non-target lesion**
  - Patient with pancreatic ductal adenocarcinoma
  - Surgical resection (Whipple's procedure) June 2021
  - Adjuvant FOLFIRINOX (adjuvant): discontinued due to progression
  - Abraxane (nabpaclitaxel) & gemcitabine: discontinued due to toxicity
  - Pembrolizumab: Discontinued due to progression

* Continuing on treatment
# Target lesions exhibit SD; treatment ended due to clinical progression or withdrawal

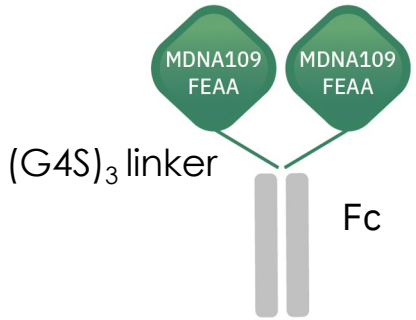
Bifunctional **S**uper**K**ines for **I**mmuno**T**herapy (BiSKIT)

Overview of Anti-PD1-IL-2 Superkine BiSKIT (MDNA223)

MDNA223

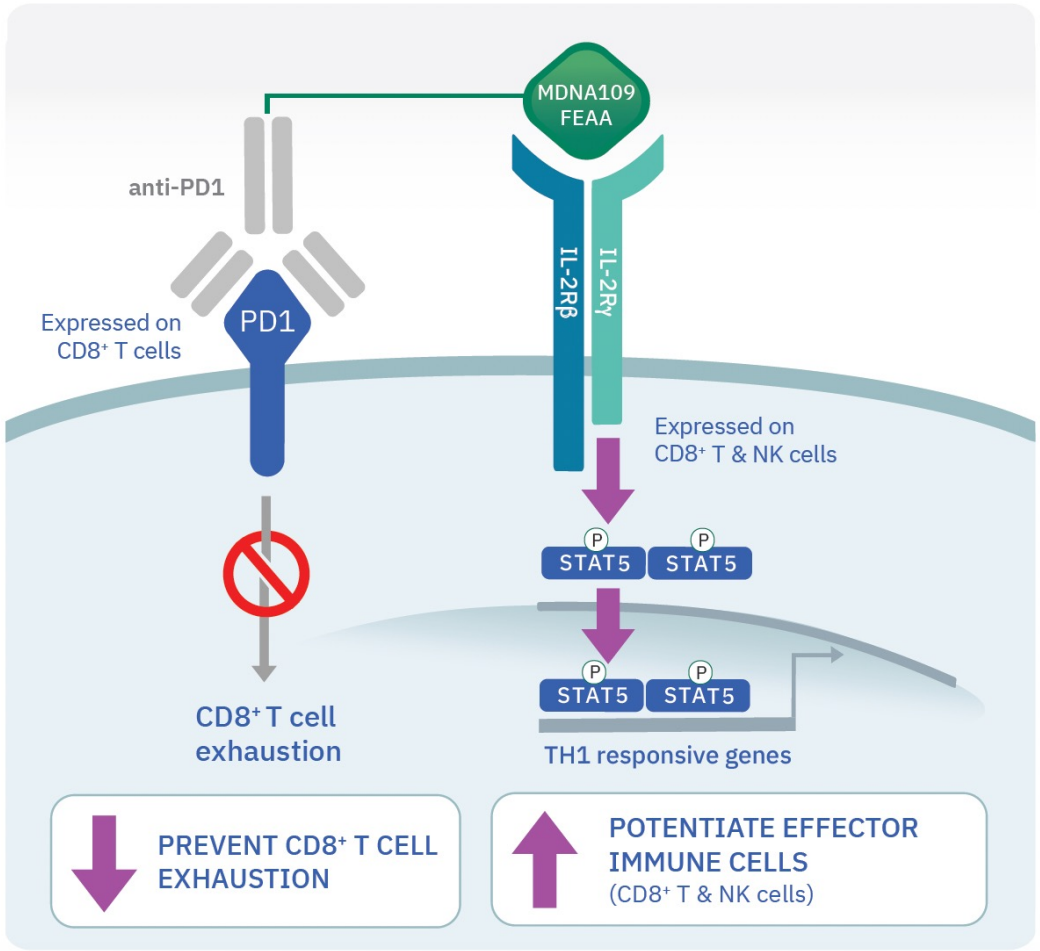


MDNA19
(MDNA109FEAA-Fc)



cis-Binding to IL-2R and PD1 on Same CD8⁺ T Cell

Anti-PD1-MDNA109FEAA **(MDNA223)**



Synchronized

IL-2R Activation
+
PD1 Blockade

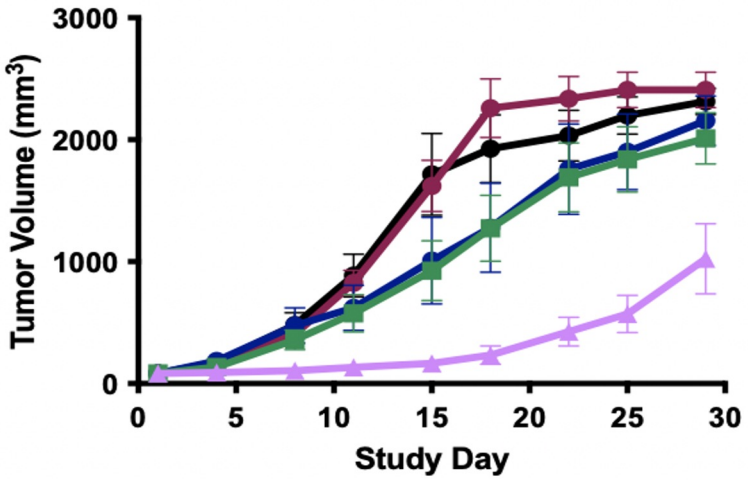
↓

Superior
Anti-Tumor
Activity

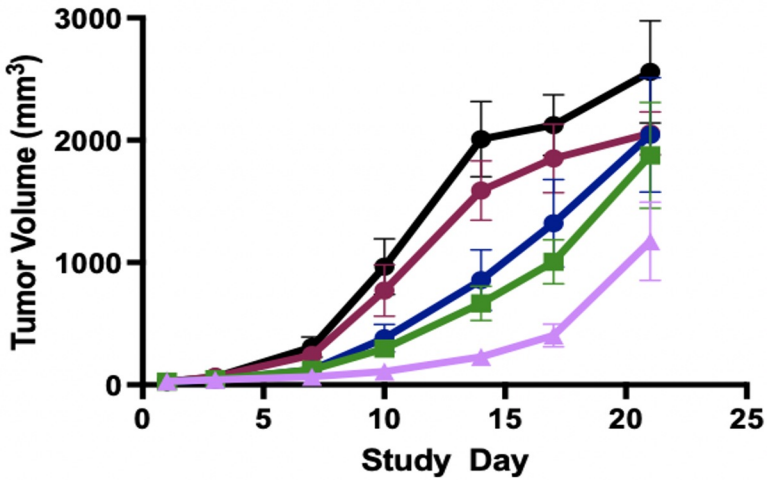
MDNA223m Demonstrated Superior Anti-Tumor Activity

MDNA223m showed higher levels of anti-tumor activity than co-administration in pre-clinical studies

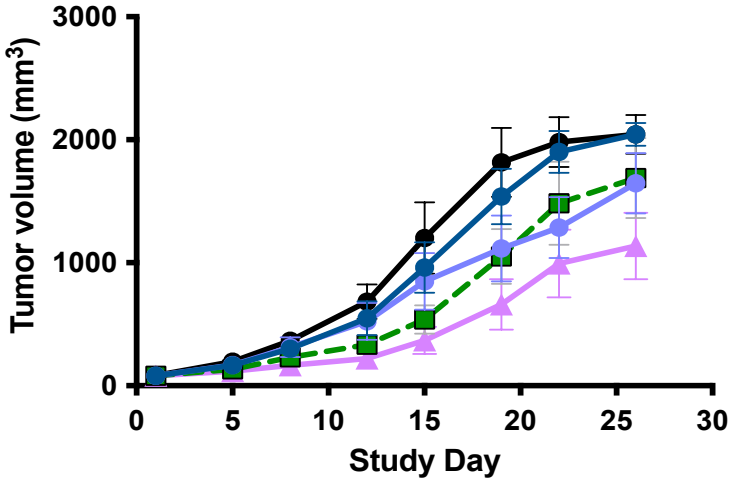
CT26 Colon Tumor Model



B16F10 Melanoma Model



E0771 Breast Tumor Model



- Vehicle
- Anti-PD1 (1.8 mg/kg)
- MDNA19 (1 mg/kg)
- Anti-mPD1 (1.8 mg/kg) + MDNA19
- MDNA223m (2 mg/kg)

- Vehicle
- MDNA19 (1 mg/kg)
- Anti-mPD1 (10 mg/kg)
- Anti-mPD1 (10 mg/kg) + MDNA19
- MDNA223m (2 mg/kg)

Treatment with molar equivalent doses of anti-PD1 (150 Kda), MDNA19 (83 Kda) or MDNA223m (165 Kda).
IP treatment QWx2 (CT26 and E0771) and QWx3 (B16F10)
Avg tumor size at initiation of dosing: 127 mm^3 (CT26), 80 mm3 (E0771) or 30 mm^3 (B16F10)

MDNA55

Empowered IL-4 Superkine Targeting Glioblastoma

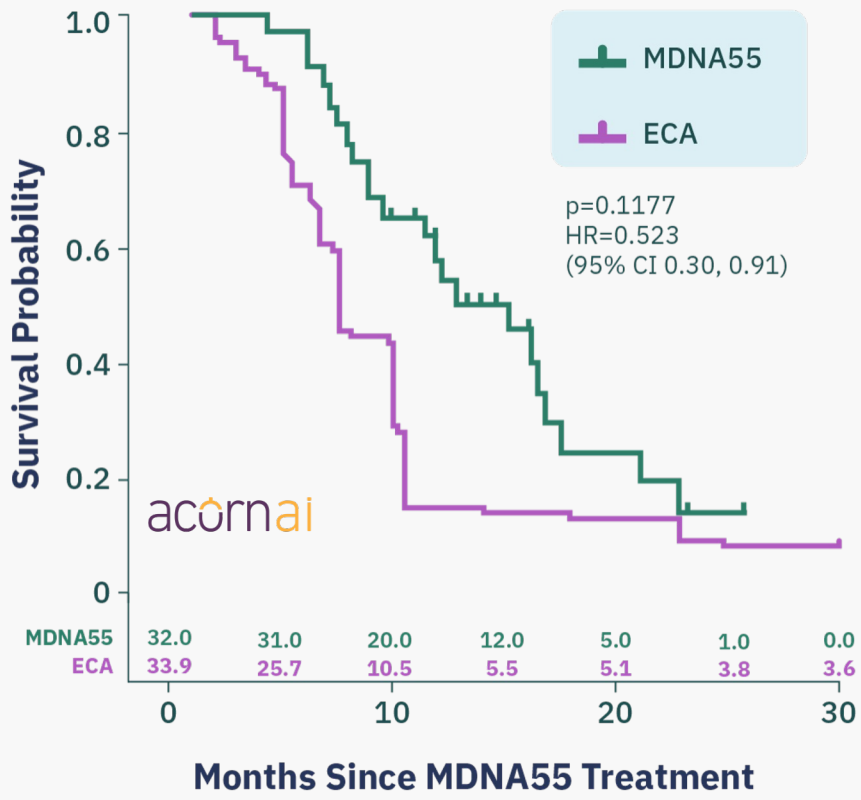
Improvement of ~ 100% in mOS vs External Control Arm (ECA)

Results*

Weighted IL4R High + IL4R Low$^{High\ Dose}$ (n=32)
mOS is 15.7 months vs 7.2 months in ECA

→ Survival time more than doubled in the IL4R High + IL4R Low$^{High\ Dose}$ group compared to ECA

IL4R High + IL4R Low$^{High\ Dose}$



*Survival was calculated from time of relapse

Upcoming Anticipated Milestones & Financial Summary

ABILITY Study Fully Funded – Cash Runway Through Q2 2024

Anticipated Milestones

Dose Escalation Cohorts Anti-Tumor Update	Activity Data **Q1 2023**	✓
Dose Escalation Cohorts Anti-Tumor Update Start of Phase 2	Activity Data **Q3 2023**	
Early Single Agent Phase 2 Anti-Tumor Update	Activity Data **Q4 2023**	
Early Phase 2 Combination Study Anti-Tumor Update	Activity Data **Q1 2024**	

Financial Highlights

Nasdaq/TSX	MDNA
Headquarters	Toronto, CA
Cash	CDN $33.6M**
Debt	$0
Preferred Shares	None
Issued and Outstanding	~70 Million*
Fully Diluted	~92 Million*

* As of February June 26, 2023. **As of March 31, 2023

Thank you

Fahar Merchant, PhD
President and CEO

Elizabeth Williams
Chief Financial Officer

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