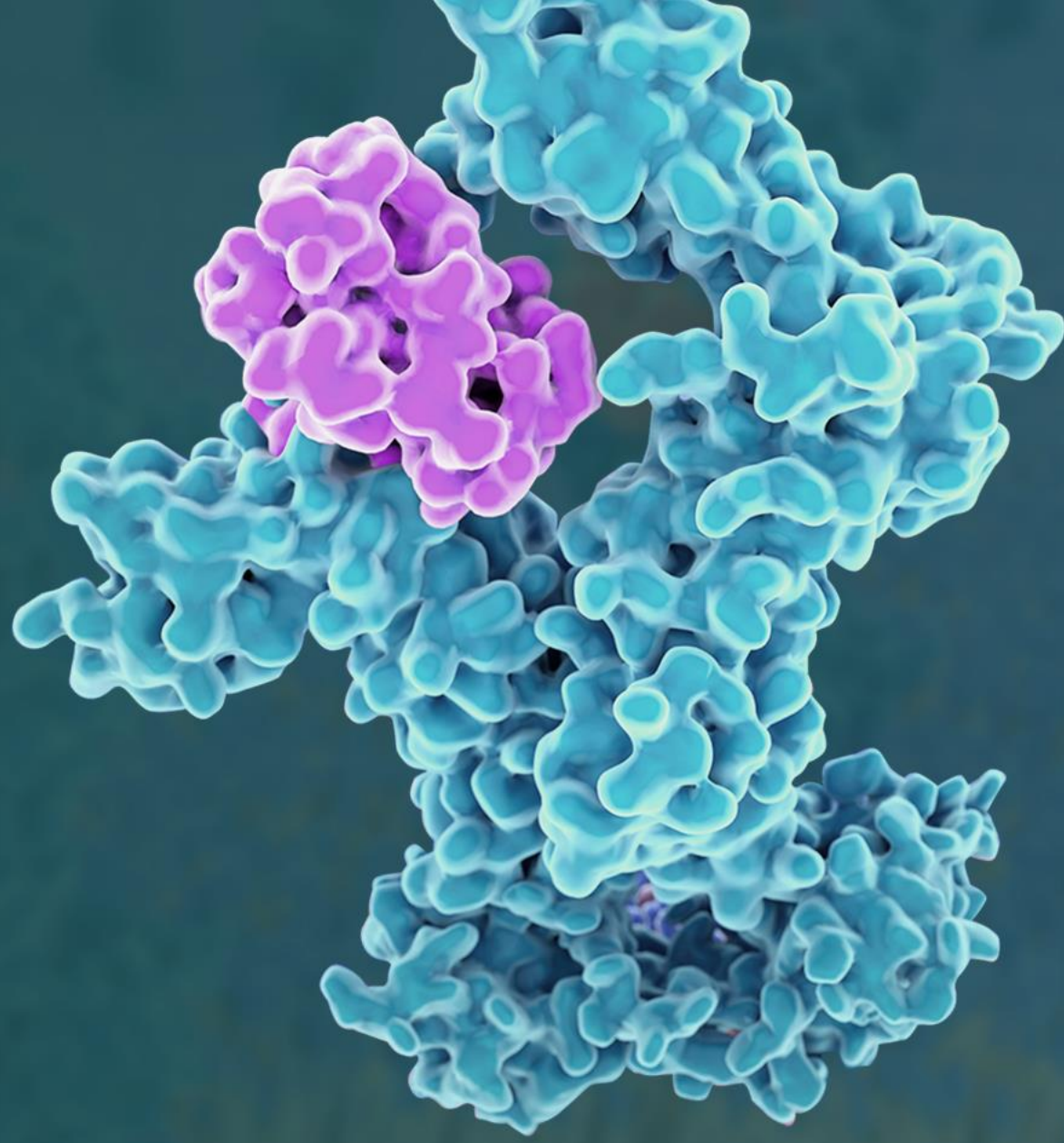
Evolutionary Cytokines Revolutionary Medicines



MEDICENNA

Corporate Overview June 2024 | TSX: MDNA | OTCQB: MDNAF

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MEDICENNA Overview

Clinical Stage Immunotherapy Company

MDNA11 – Phase 1/2

for Advanced Solid Tumors

Bizaxofusp (MDNA55) – Phase 3 Ready

for Recurrent Glioblastoma

Multiple 'Pipeline in a Product' Assets

Pre-Clinical Autoimmune, Neuromuscular, Inflammation and Oncology Assets in Deal-Heavy Spaces

TSX: MDNA | OTCQB: MDNAF

2024 Anticipated Catalysts

MDNA11
- Monotherapy Expansion Data
- KEYTRUDA® Combination Data

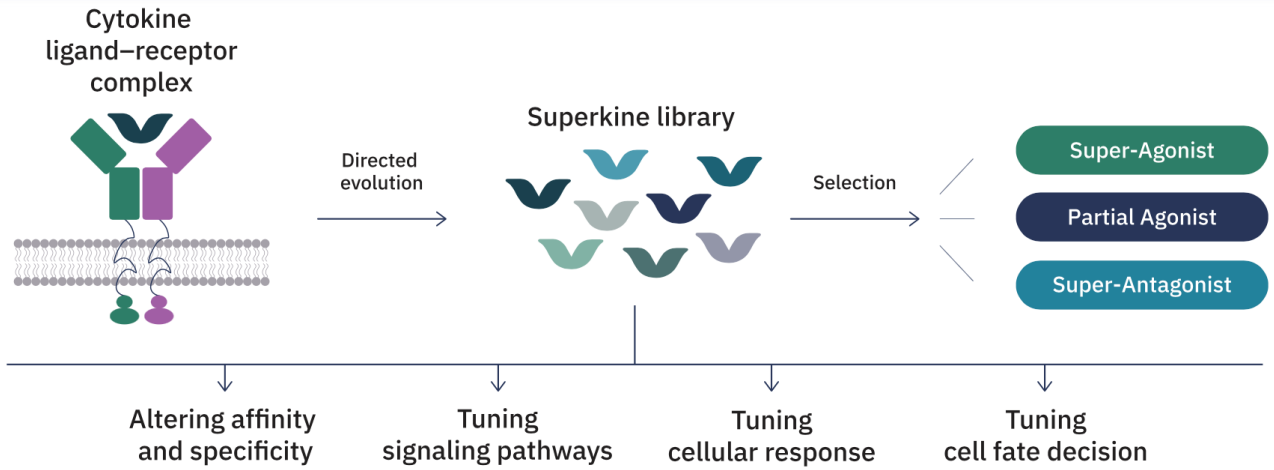
Bizaxofusp
- Breakthrough Therapy Designation
- EMA Alignment for Trial Design
- Partnership for Phase 3

Funded through 2026

Generating value by advancing Superkines

Superkine Platform

Transforming IL-2, IL-4 and IL-13 into Best-in-Class Superkines Using Directed Evolution



Our IL-2, IL-4 and IL-13 Superkines are known to modulate immune activity in many diseases, each providing "A Pipeline in a Product" opportunity

Superkine Design and Development

Generate Tunable Superkine Library

Transform interleukins using directed evolution to enhance desired properties

Enhance via Protein Fusion

To improve PK, add a second MOA, or confer new capabilities

Lead Selection & Development

Advance the most promising candidates towards clinical studies

Robust Pipeline of Next Generation Superkines

Candidate	Indication	Discovery	Preclinical	Phase 1	Phase 2	Phase 3
Bizaxofusp (MDNA55) IL-4–Toxin Fusion	Recurrent Glioblastoma (GBM)	Phase 3 Ready Asset				
MDNA11 IL-2 Super Agonist monotherapy	Melanoma, cSCC, BCC Merkel cell, MSI-H/dMMR					
MDNA11 IL-2 Super Agonist KEYTRUDA® combo	Various solid tumors					
MDNA113 Anti PD-1-IL-2 Masked BiSKIT	Various solid tumors expressing IL-13Rα2					
MDNA209 IL-2/15 Pathway Super Antagonist	Autoimmune Diseases					
MDNA413 IL-4/13 Pathway Super Antagonist	Oncology and Th2-mediated diseases					

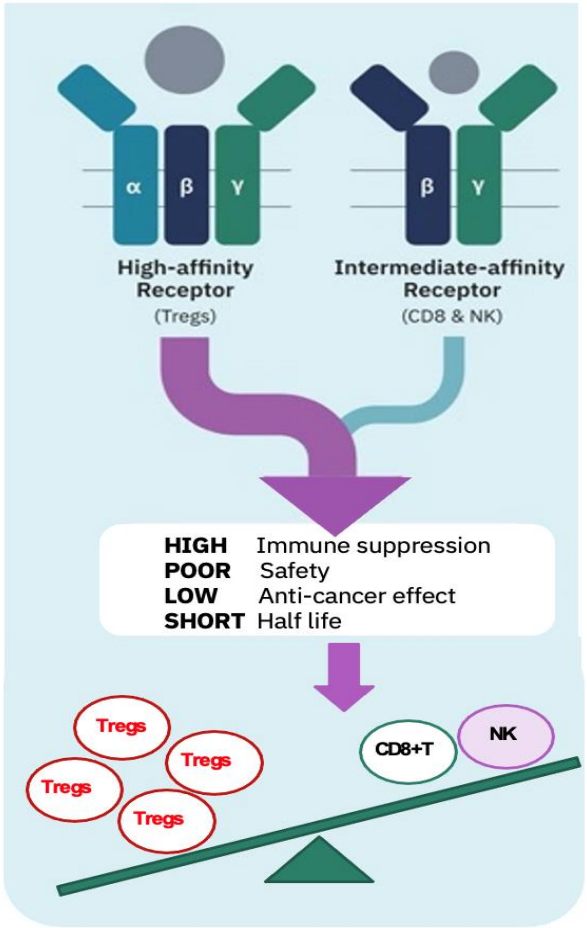
MDNA11

Clinical-Stage Asset in Phase 1/2 with a Monotherapy Treatment Arm and a Combination Arm with KEYTRUDA®

MEDICENNA

MDNA11: The Need for a Safe and Effective IL-2 Immunotherapy

PROLEUKIN® (*Iovance*) rHIL-2



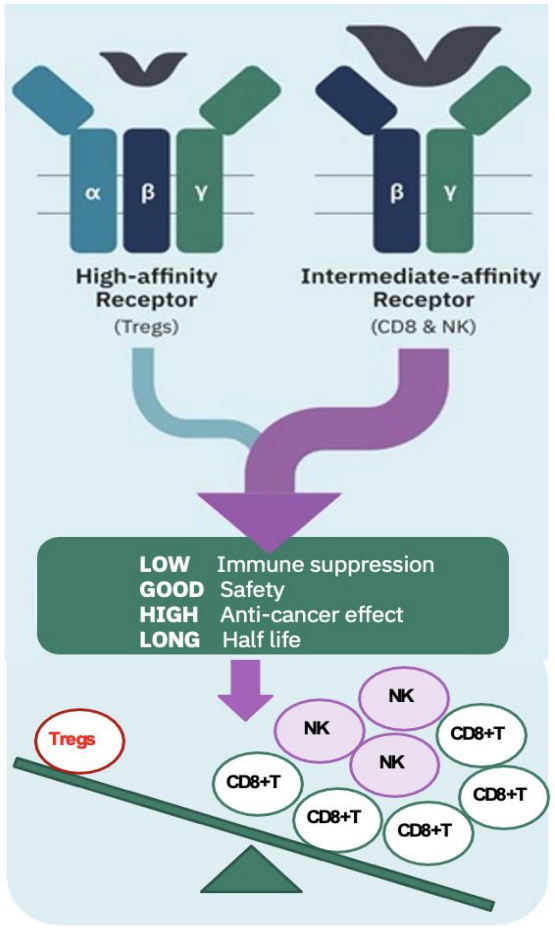
Approved in the 1990s:

- Metastatic melanoma
- Renal cell carcinoma

Limited Clinical Use:

- Toxicity via **IL-2Rα**
- Requires ICU administration
- Frequent dosing every 8 hours for up to 5 days

MDNA11



Single Agent Activity:

- 4 partial responses in on-going Phase 1/2
- 100% target lesion reduction
  - Pancreatic
  - Melanoma
- Desirable Safety
- Dosed every two weeks

MDNA11: A Long-Acting Non-α, Enhanced-β, IL-2 Super Agonist

Superior selectivity with enhanced 'β-only' pharmacology

Improved PK profile

Non-α

↓ Tregs
↑ Safety

Enhanced-β

↑ Effector Cell Activation

↑ T Cell Memory Response

↓ NK Cell Exhaustion

Albumin Fusion

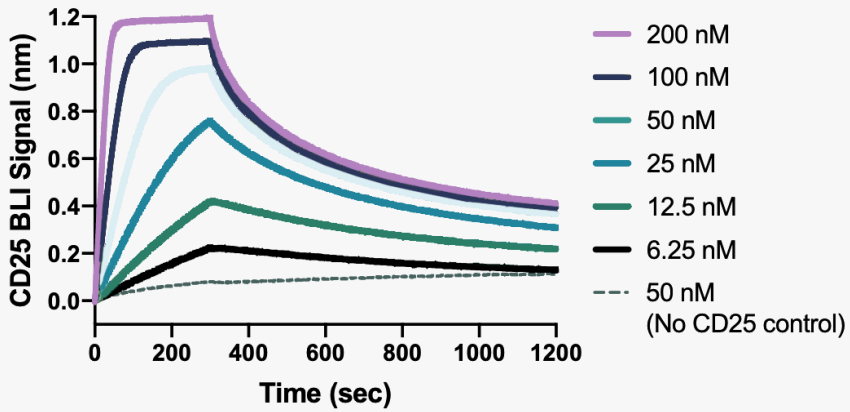
↑ Half Life
↑ Tumor Accumulation

Differentiated Features vs. PROLEUKIN® Demonstrate Best-in-Class Potential

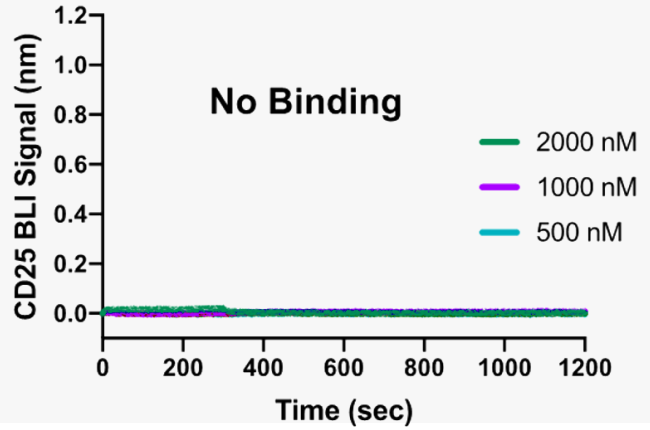
MDNA11 Selectively Binds IL-2Rβ vs. rhIL-2

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

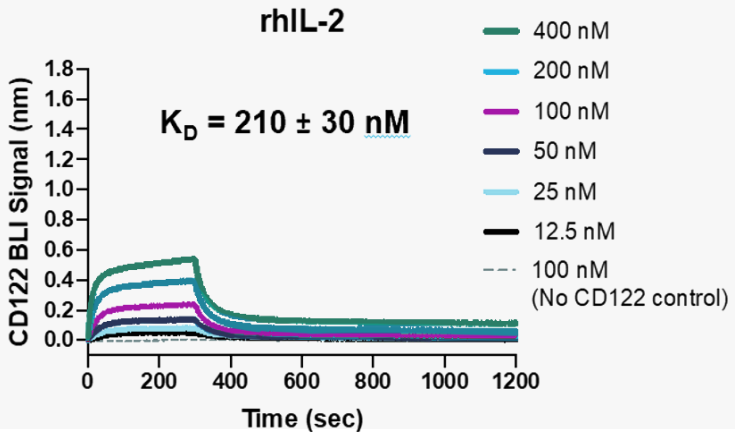
rhIL-2 – IL-2Rα Binding



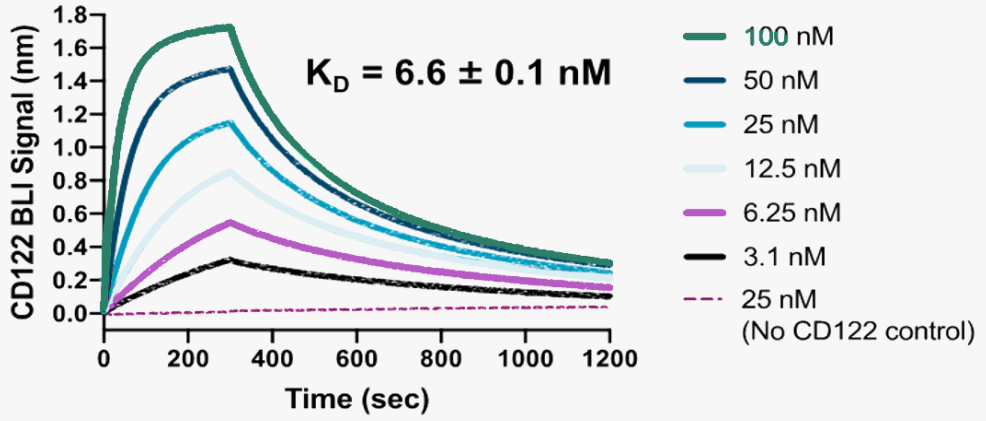
MDNA11 – IL-2Rα Binding



rhIL-2 – IL-2Rβ Binding



MDNA11 – IL-2Rβ Binding



MDNA11: Best-in-Class Potential

	MDNA11	Proleukin[1]	NKTR-214	SAR'245[2]	ALKS 4230[3]	WTX-124[4]	XTX202[5] discontinued mono	STK-012[6]	TransCon IL-2β/γ[7]
No binding to IL-2Rα	√	✗	✗	√	√	✗	√	✗	Minimal binding
Enhanced IL-2Rβγ Binding	√	✗	✗	✗	✗	✗	✗	✗	✗
QW, Q2W or Q3W Dosing	√	✗	√	√	✗	√	√	√	√
Tumor Accumulation	√	✗	✗	✗	✗	√	✗	✗	✗
No Pegylation Liabilities	√	√	✗	✗	√	√	√	✗	✗
Durable Single-Agent Activity	√	√	✗	✗	?	?	✗	?	?

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

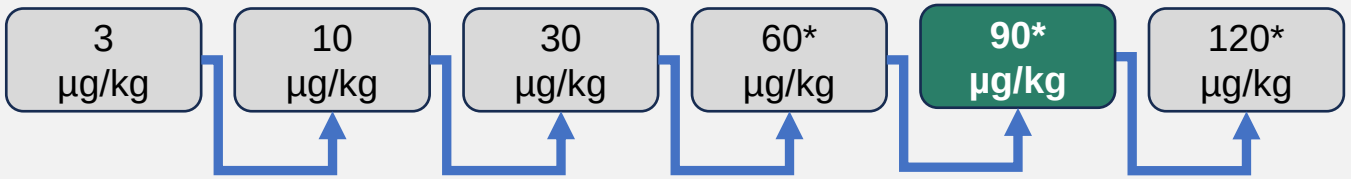
[1]Nature Rev. Drug Discovery 2021; [2] Nature Comm 2021 Ptacin; 3 JITC 2020 Lopes; 4 Cancer Immunol Res 2022 Nirschl; [5]ASCO 2021 O'Neil; [6]AACR 2024 Izar; [7]J Immunother Cancer 2022 Rosen and Company's Oncology Program Update on 5/31/23. Additional information from https://clinicaltrials.gov/

ABILITY Phase 1/2 Study: Dose Expansion & Combination with KEYTRUDA®

Global, Multi-Center, Open-Label Study Underway

MDNA11 Monotherapy Dose Escalation (IV Q2W)

- Modified 3+3 design
- Identify monotherapy Recommended Dose for Expansion (RDE)



* Step-up dosing (SUD)

Monotherapy Dose Expansion (Phase 2)

- MDNA11 @ RDE (90 µg/kg Q2W) in selected checkpoint inhibitor (CPI) resistant solid tumors:
  - Melanoma
  - Non-melanoma skin cancer (cSCC, BCC, MCC)
  - MSI-H/dMMR tumors

MDNA11 (Q2W) + Pembrolizumab (Q6W) Dose Escalation

Select PD1/L1 refractory and CPI-naive indications

- Identify combination RDE (cRDE) for MDNA11

Combination Dose Expansion (Phase 2)

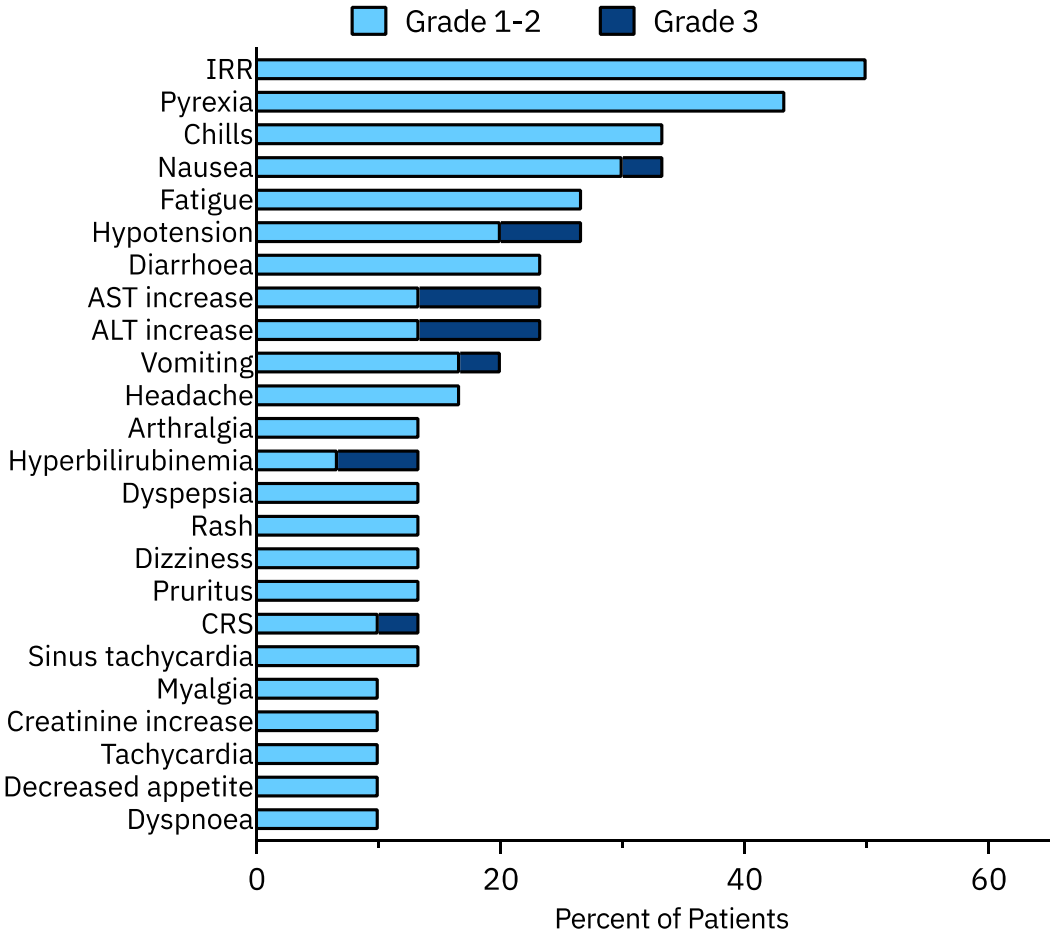
- MDNA11(Q2W, cRDE) + Pembrolizumab (400 mg, Q6W)
- Melanoma and other select advanced solid tumors

ABILITY-1: **A** **B**eta-only **IL**-2 **I**mmuno**T**herap**Y** Study

RDE, recommended dose for expansion; cRDE, combination recommended dose for expansion

Desirable Safety Profile Across All Doses in Monotherapy Escalation

Most Common Treatment Related Adverse Events (TRAEs in ≥10% of Patients)



	No. (%) of Patients	
	All Grades (N=30)	Grade 3 (N=30)
All AEs	30 (100%)	20 (66.66%)
Treatment related AEs	30 (100%)	11 (36.6%)
All SAEs	12 (40%)	8 (26.6%)
Treatment related SAEs	9 (30%)	5 (16.6%)

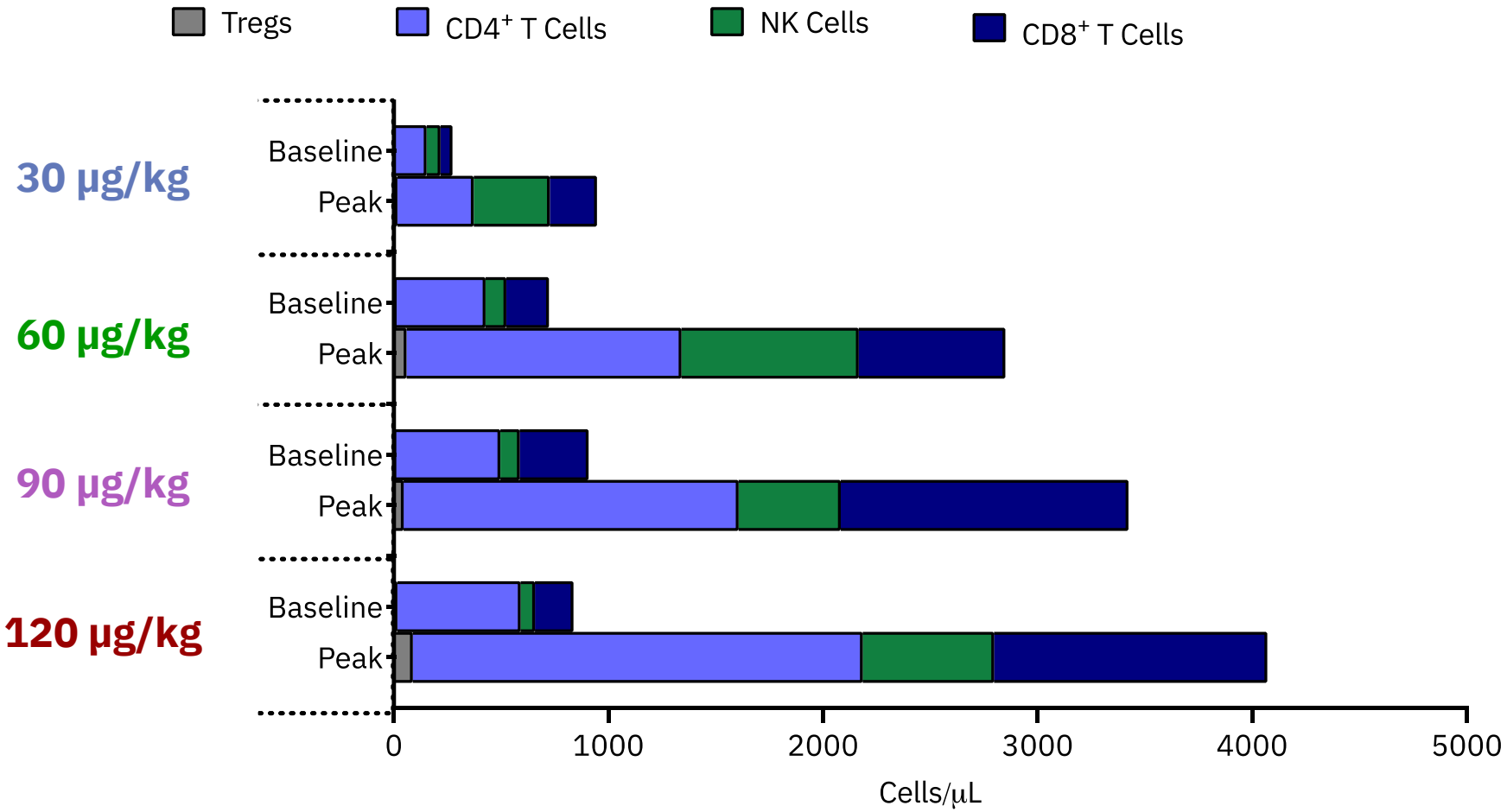
- **No dose limiting toxicity (DLT)**
- No grade 4 or 5 TRAE
- 96.3% of TRAEs were grade 1-2; majority resolved within ≤72 hours
- Grade 3 LFT elevations were asymptomatic and transient; resolved prior to next scheduled dose
- Grade 3 hypotension seen in patients with baseline adrenal insufficiency

Median duration of treatment is 10 weeks (1- 90 weeks)

IRR, Infusion Related Reaction

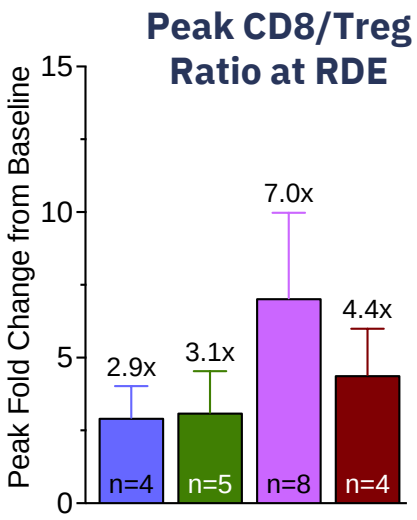
MDNA11 Preferentially Expands Circulating Effector Immune Cells

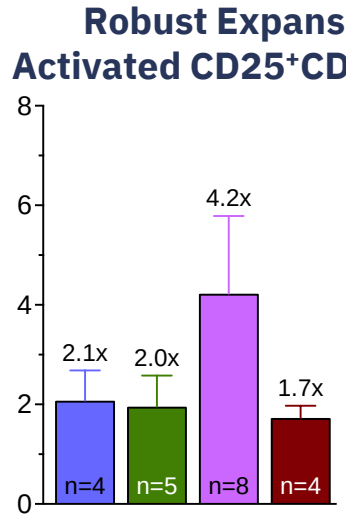
CD8⁺ T Cells Demonstrate the Most Expansion Compared to Baseline

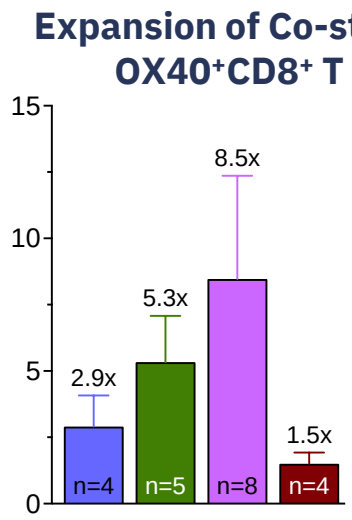


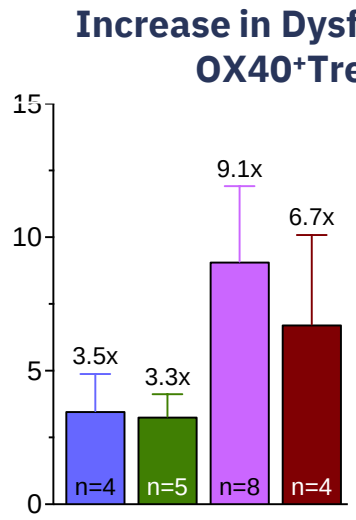
Immune cells were assessed by flow cytometry and the numbers were calculated based on the absolute lymphocyte count
Peak values are from day 8 post treatment following dose 1, 2 or 3
Tregs: $CD4^+CD25^+ FOXP3^+$, NK Cells: $CD3^- CD56^+$

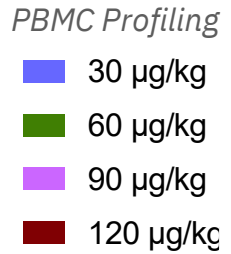
Optimal Immune Response: Sustained Effector Cell Expansion with Repeat Dosing and Enhanced Stemness, Activation, and Memory

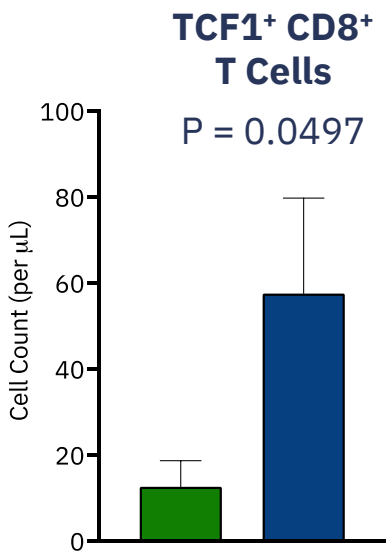


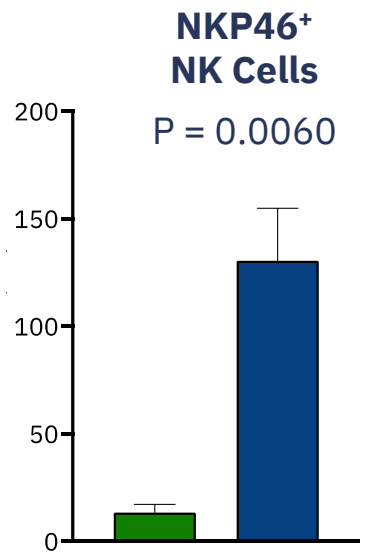


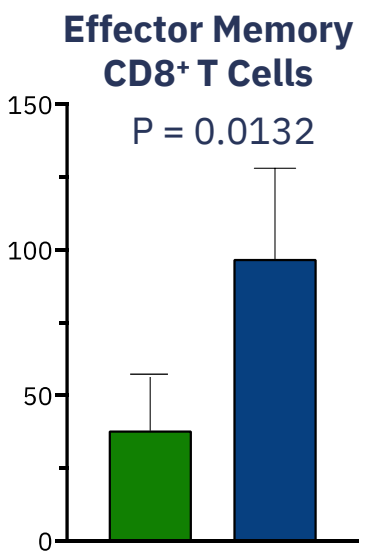


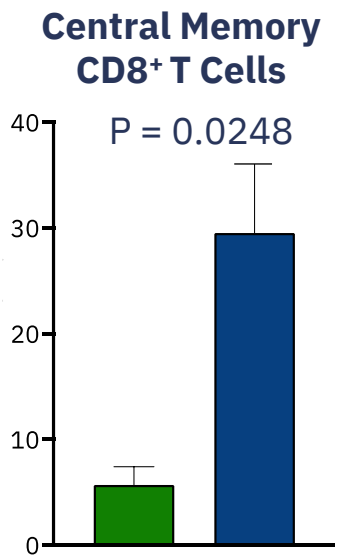












MDNA11: 90 µg/kg, N=5

Baseline

On-treatment

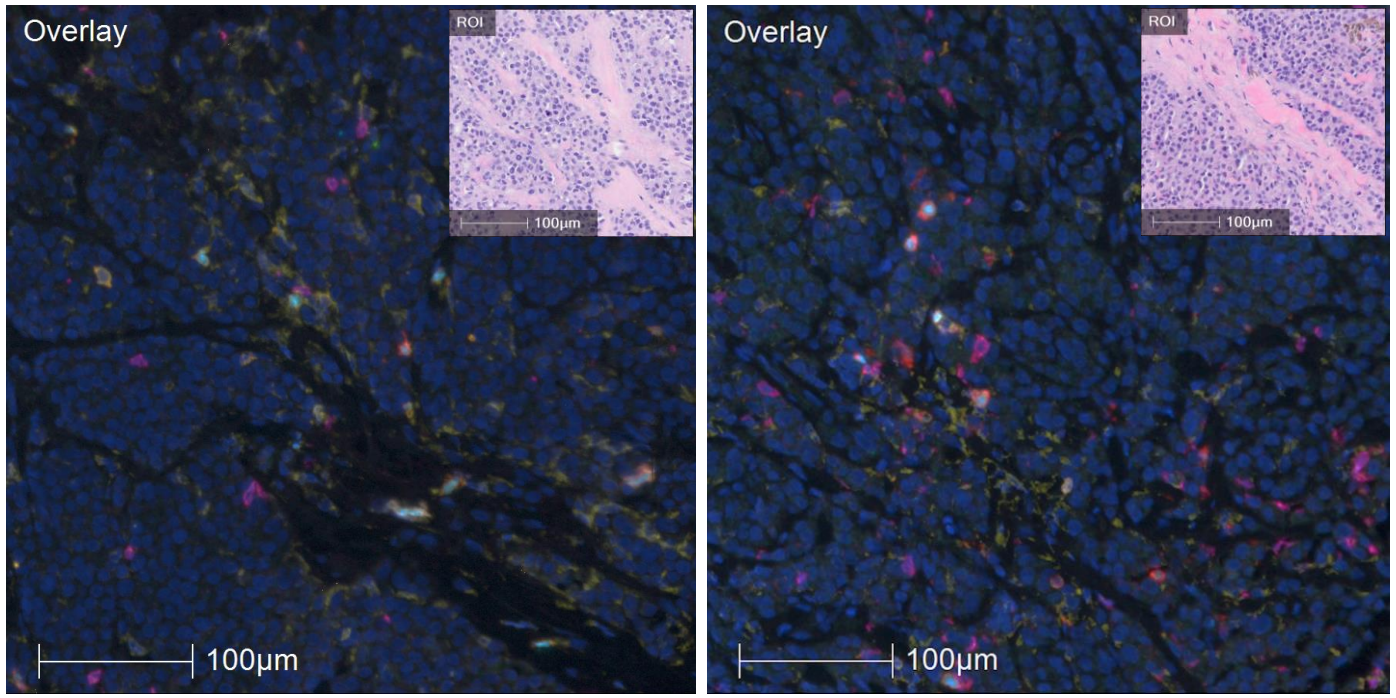
Increased Tumor Infiltrating CD8⁺ T and NK Cells

Cutaneous melanoma at 10 µg/kg MDNA11, Q2W

Disease Progression at week 12

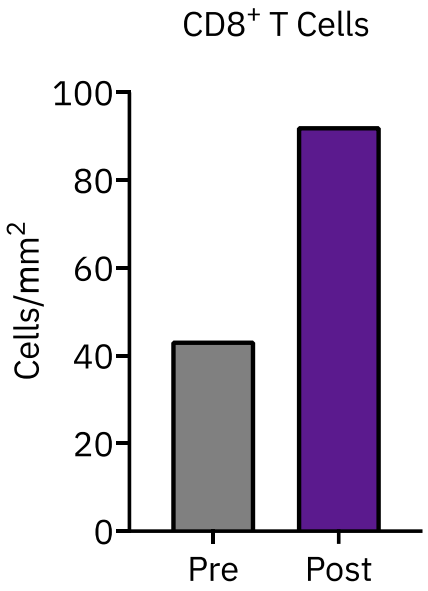
Pre-treatment

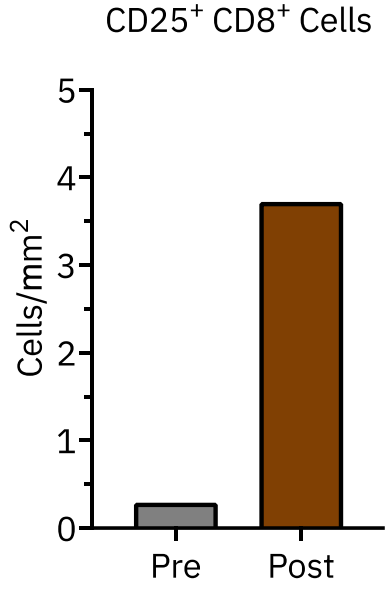
Post-treatment (Week 7)

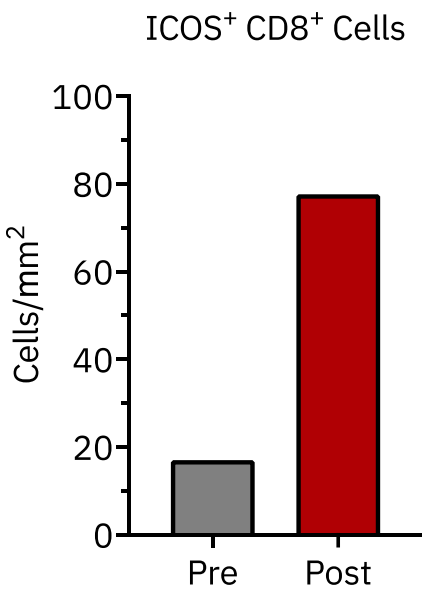


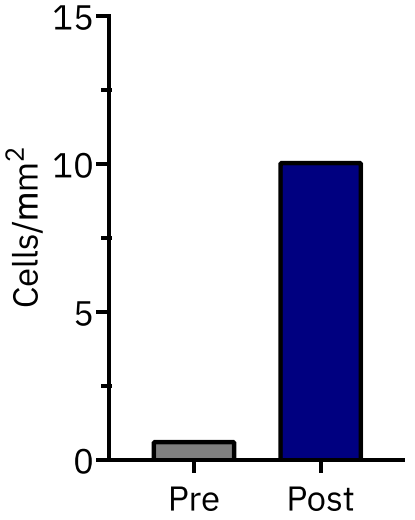
CD8 CD56 CD25 ICOS DAPI

multiplex immunofluorescence (mIF)









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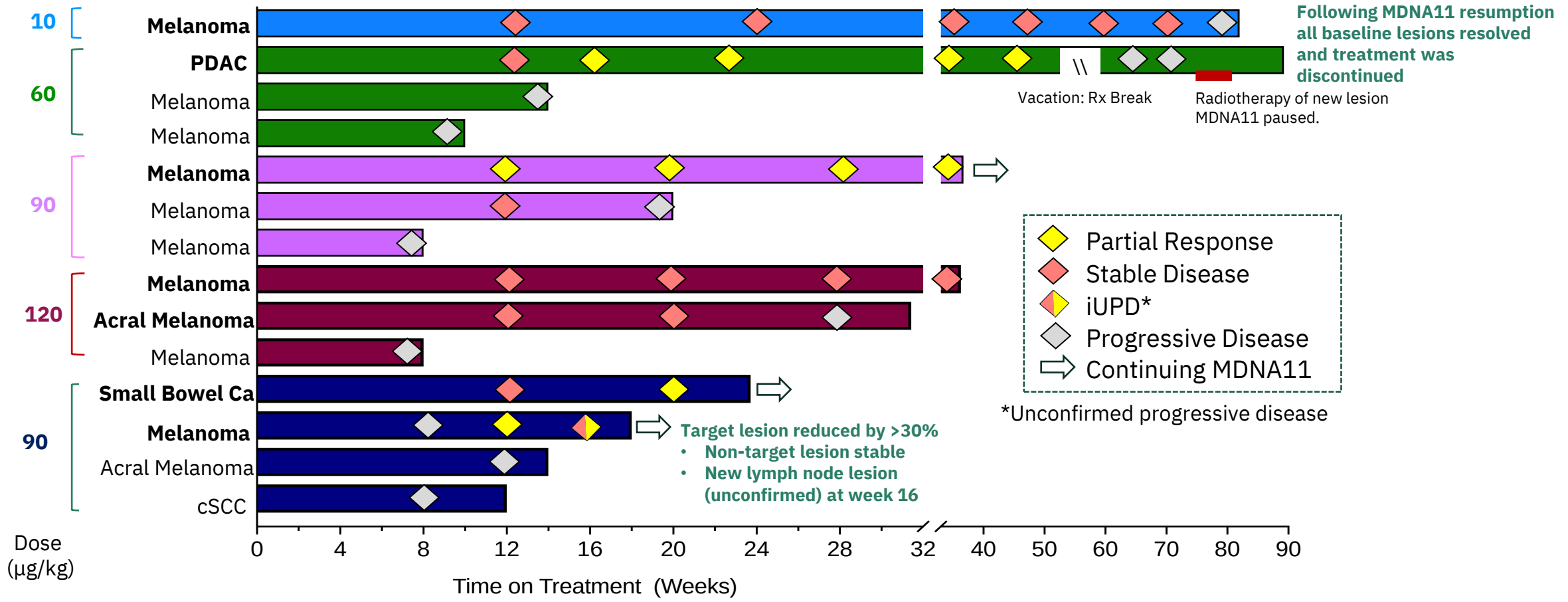
Monotherapy: Shows Durable Tumor Response in High-Dose Phase-2 Eligible Patients Resistant to Checkpoint Inhibitors

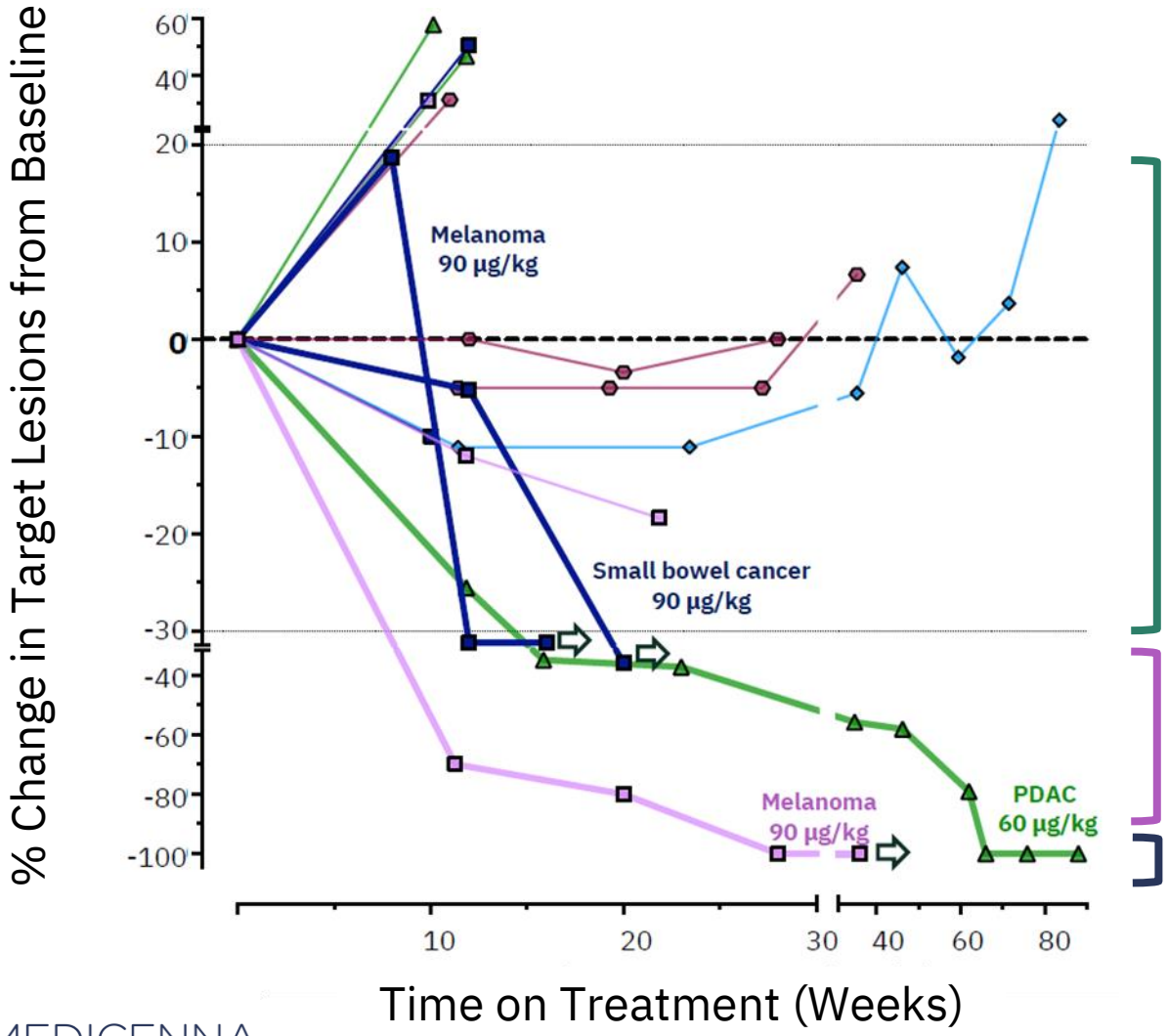
Response Rate (4PR): 28.6% | Clinical Benefit Rate (4PR + 3SD >24 weeks): 50%



Efficacy evaluable patients
Cut-off date: 22-Mar-2024

4 Partial Responses, Including 100% Reduction of Target Lesions in 2 Patients

Response Rate (4/14 PR): 28.6% | Clinical Benefit Rate (4 PR + 3 SD >24 weeks): 50%



Stable Disease (SD)

Partial Response (PR)

100% Reduction of Target Lesions

- 10*µg/kg
- 60 µg/kg
- 90 µg/kg
- 120 µg/kg
- 90 µg/kg (Expansion)
- Continuing MDNA11

*Intra-patient dose escalation: 10, 30, 60 & 90 µg/kg

No DLTs in Dose Cohort 1 of Combination Escalation with Pembrolizumab

Dose Cohort 2 is Enrolling at the Next Higher Dose of 90 µg/kg Following Absence of Any DLTs at 60 µg/kg

Cohort	MDNA11 Target Dose (Q2W)	Pembrolizumab Dose (Q6W)	Status
Cohort 1	60 µg/kg (Priming 2 x 30 µg/kg)	400 mg	3 Patients : No DLT
Cohort 2	90 µg/kg (Priming 30, 60 µg/kg)	400 mg	**Enrolling**

DLT period: First priming dose to 21 days from target dose (49 days from first priming dose)

Cohort 1: MDNA11 60 µg/kg (Q2W) + Pembrolizumab 400 mg (Q6W)		
Patient ID	**Age/ Sex**	**Primary tumor**
Patient 1	59/F	Ovarian SCC
Patient 2	59/F	NSCLC
Patient 3	52/F	MSS Colorectal Cancer

- No DLTs
- No grade 4/5 TRAEs
- No treatment related SAEs
- Only one grade 3 TRAE (Transient WBC count decrease on day 2 of priming dose; No associated clinical sequalae)

MDNA11: A Potential Best-In-Class IL-2

High Dose Phase-2 Eligible Patients

4/14 **Partial Responses**

29% **Overall Response Rate**

50% **Clinical Benefit Rate**

- ✓ Desirable Monotherapy Safety Profile
- ✓ Dosing Every 2 Weeks
- ✓ Preferential Expansion of Circulating $CD8^+$ T and NK cells

Best-in-Class Potential

- ✓ Durable Responses
- ✓ *Complete Remission Continues in PDAC Patient ~4 Months After Treatment*
- ✓ *Sustained 100% Target Lesion Reduction in Melanoma Patient*
- ✓ 2/2 PRs in MSI-High Patients

Key Features

- ✓ Increased Immune 'Stemness'
- ✓ Enhanced Central and Effector Memory Compartments
- ✓ Boost tumor infiltration of functionally active $CD8^+$T and NK cells

Bizaxofusp (MDNA55) for Recurrent GBM

A Phase 3-Ready Asset with Orphan Drug Status, Fast Track Status and an FDA-Endorsed Pivotal Phase 3 Trial Design

Pursuing a Development and Commercial Partnership

MEDICENNA

Bizaxofusp: A Significant Market Opportunity for Brain Cancer

Bizaxofusp

GBM is the most aggressive primary brain tumor

100% of patients relapse following standard of care

rGBM is uniformly fatal with median OS (mOS) of 6-9 months

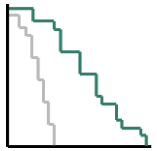
Bizaxofusp Targets IL-4R: overexpressed in GBM and TME but not healthy brain tissue

Compelling Results

Single intra-tumoral treatment

By-passes the blood brain barrier

No systemic toxicity



Significant survival benefit vs. matched control arm

Strict inclusion criteria

Phase 3 Ready

FDA-endorsed Phase 3 design, utilizing an ECA

Preparing for Phase 3

Pursuing a Partnership

Has FDA Fast-Track Designation

FDA's Project Orbis allows for swift international adoption

Value Creation

$800M Market Opportunity for rGBM (US/EU)

Follow-on Applications Upwards of $4B

1st line for non-resectable GBM
IL-4R expressing metastatic brain tumors

12 Years Market Exclusivity

ADC, antibody drug conjugate; OS, overall survival

Bizaxofusp: A Molecular Trojan Horse

A First-in-Class Phase 3-ready Empowered IL-4 Superkine for rGBM

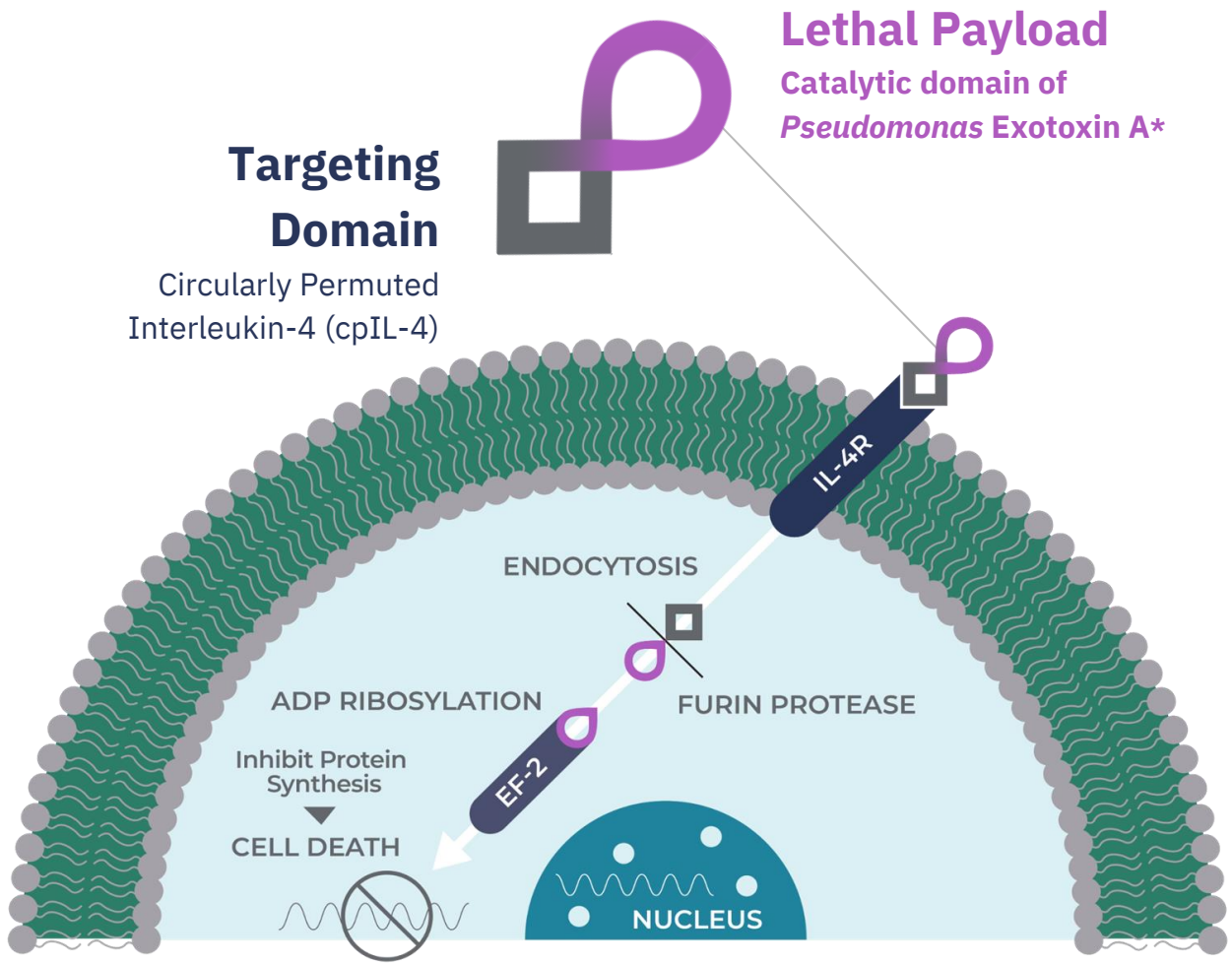
Approach By-Passes BBB
Single intra-tumoral CED infusion **avoids systemic toxicity** and achieves tumor control

Targets IL-4R
Receptor is expressed in brain tumors and immunosuppressive, non-malignant TME, but not in healthy brain cells

Highly Selective
Avoids off-target toxicity

Disrupts the TME
Targets IL-4R positive MDSCs in GBM unblinds the immunosuppressive TME

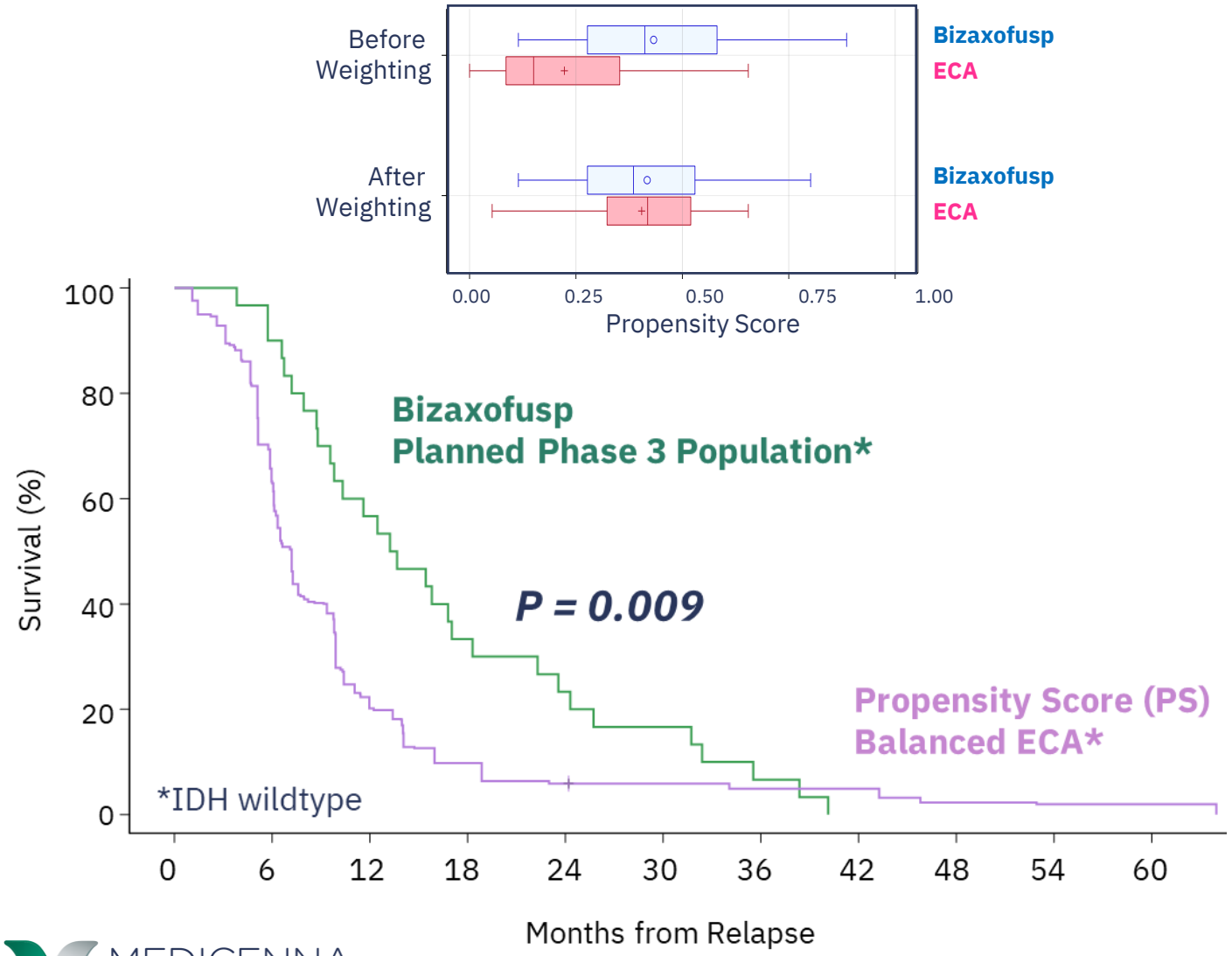
Causes Immunogenic Cell Death
Sustained anti-tumor immunity remains after clearance of bizaxofusp



BBB, blood-brain barrier; CED, convection enhanced delivery; TME, tumor microenvironment; MDSCs, myeloid-derived suppressor cells

Bizaxofusp Significantly Increased Median Overall Survival

OS Increased by 180% at 1 Year | OS at 2 Years Improved by 290%

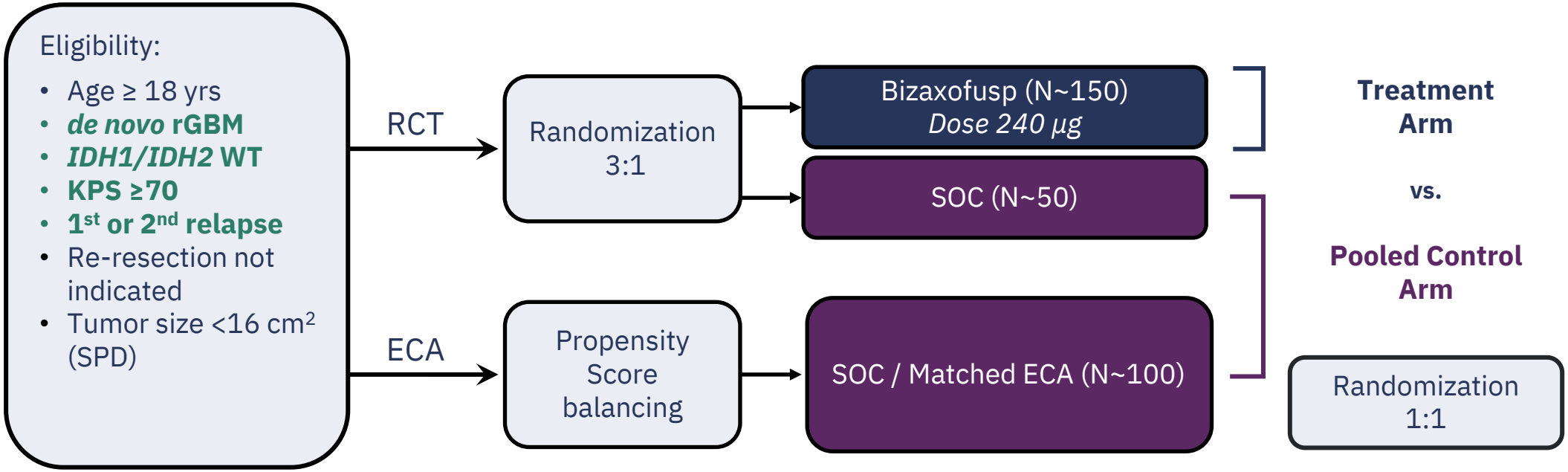


	PS Balanced ECA (N = 29.5)	Bizaxofusp (N = 30)
OS-12	20.2%	56.7%
OS-18	9.8%	33.3%
OS-24	5.9%	23.3%
OS-30	5.9%	16.7%
mOS (months)	7.2	13.5
p-value*	**0.009**	
HR* (95 % CI)	**0.536 (0.344, 0.834)**	

*Log-rank test

FDA Endorsed Phase 3 Trial Design

Hybrid with ECA: The First Time FDA has Endorsed Inclusion of an ECA in a Phase 3 Trial for Brain Cancer



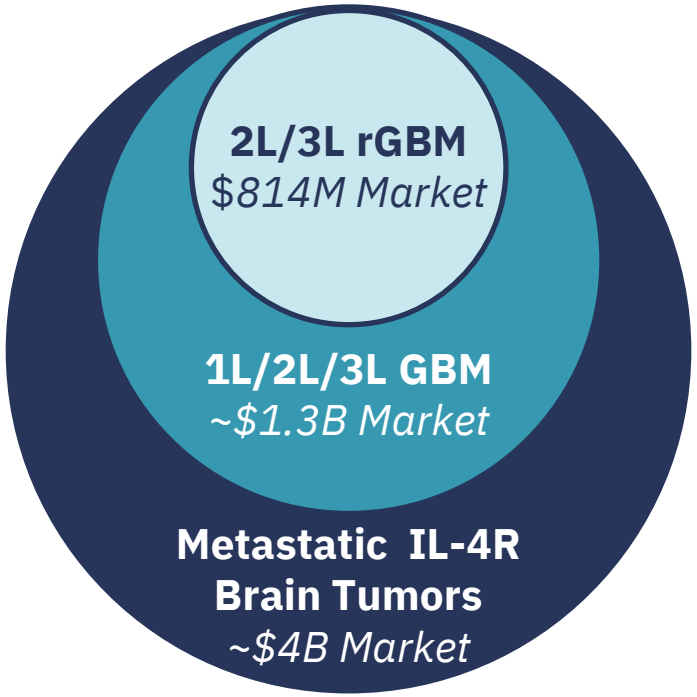
SOC therapies allowed:
- Bevacizumab (Avastin®)
- Lomustine (CCNU, CeeNU®, Gleostine™)
- Temozolomide (Temodar®)
- Tumor Treating Fields (Optune®)
- Radiation Therapy

Primary Endpoint:
- **OS**

Assumptions:
- **Effect size = 4.6 months in mOS**
- 90% power
- HR of Bizaxofusp vs. pooled control = 0.65
- 2-sided alpha = 0.05

Primary Research Confirms $800M Market for rGBM in US and EU

Potential $4 Billion market for follow-on IL-4R adult metastatic brain tumors indications



Near-term

2L/3L rGBM

Total market
~10,000 annually (US/EU)

Catalysts
- Partnering
- Breakthrough Therapy Designation
- EMA Alignment

Medium-term

Non-resectable GBM

Total market
~18,000 annually (US/EU)

Catalysts
- Robust uptake from 2L/3L rGBM market

Longer-term

Metastatic IL-4R Brain Tumors

Renal | Breast | Colon | Leptomeningeal

Total market:
~76,000 annually (US/EU)

Catalysts
- Follow-on studies in other tumors

Several Precedent Market Transactions have Demonstrated the Potential for Medicenna's Pre-Clinical Assets

Pre-clinical assets

MDNA113 | Anti PD-1-IL-2 Masked BiSKIT

MDNA209 | IL-2/15 Super Antagonist

MDNA413 | IL-4/13 Super Antagonist

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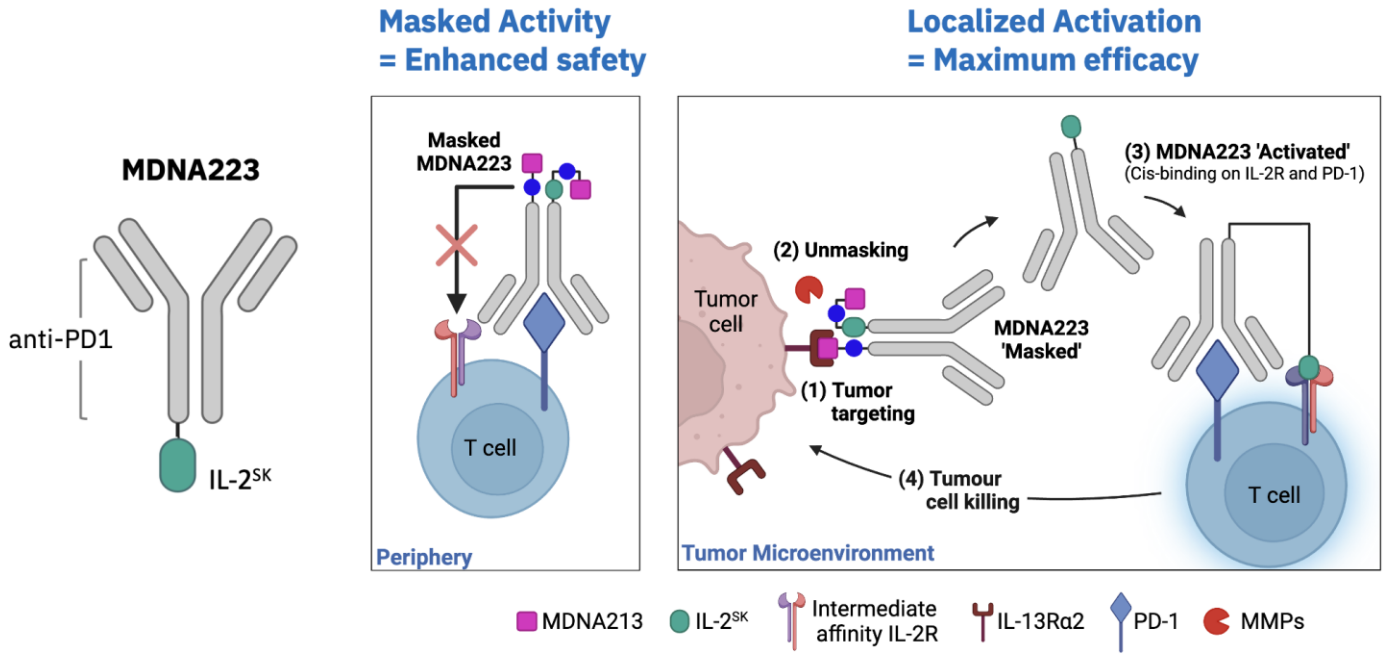
MDNA113: An Anti PD-1-IL-2 Masked BiSKIT for Cancer

Masked Superkines: Increased Safety, Maintaining Anti-Tumor Efficacy

Roche
ACQUIRED
GOOD
$250M
Sep 2022

Targeting IL-13Rα2 Positive Cancers: Annual World-Wide Incidence > 2M



- **Designed to facilitate cis-binding to IL-2R and PD1 on immune cells**
- **Selectively targets IL-13Rα2 on solid tumors via MDNA213**

A potential solution to the 2028 expiration of "Big Pharma"s anti-PD-1 IP

MDNA209: An IL-2/IL-15 Pathway Antagonist

A Novel Mechanism for Treating Autoimmune Diseases

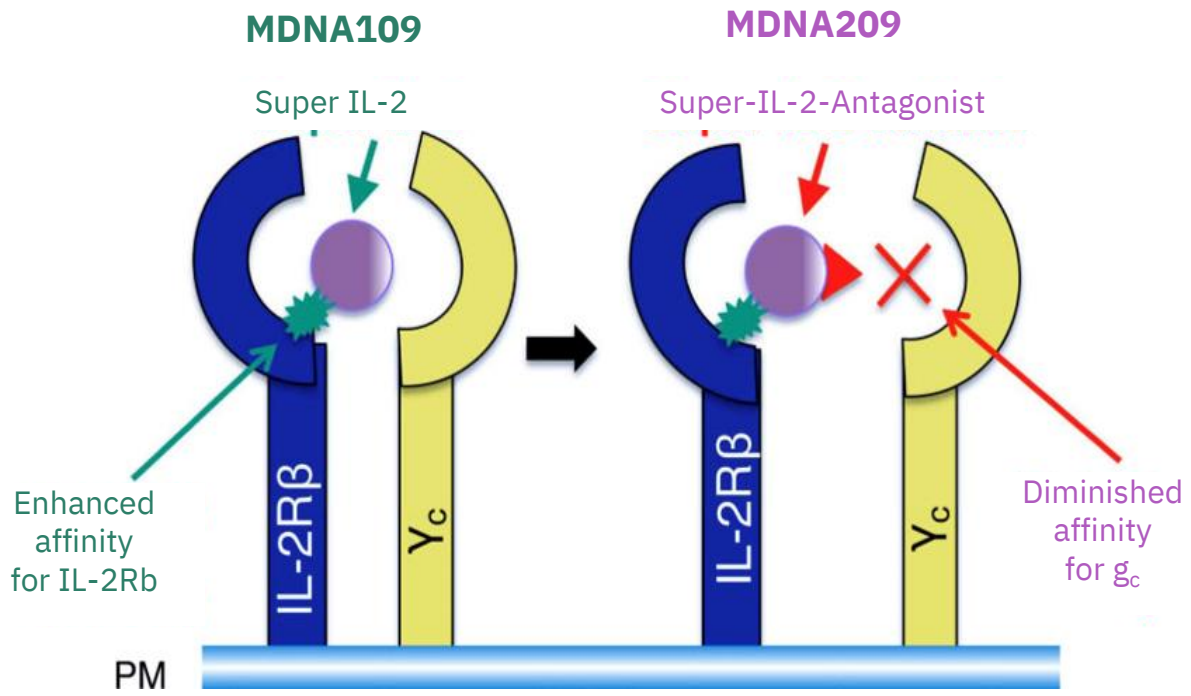
NOVARTIS

ACQUIRED

Calypso biotech

$425M
Jan 2024

Targeted Mutations Transformed IL-2 into a High-Affinity
IL-2/IL-15 Receptor Antagonist



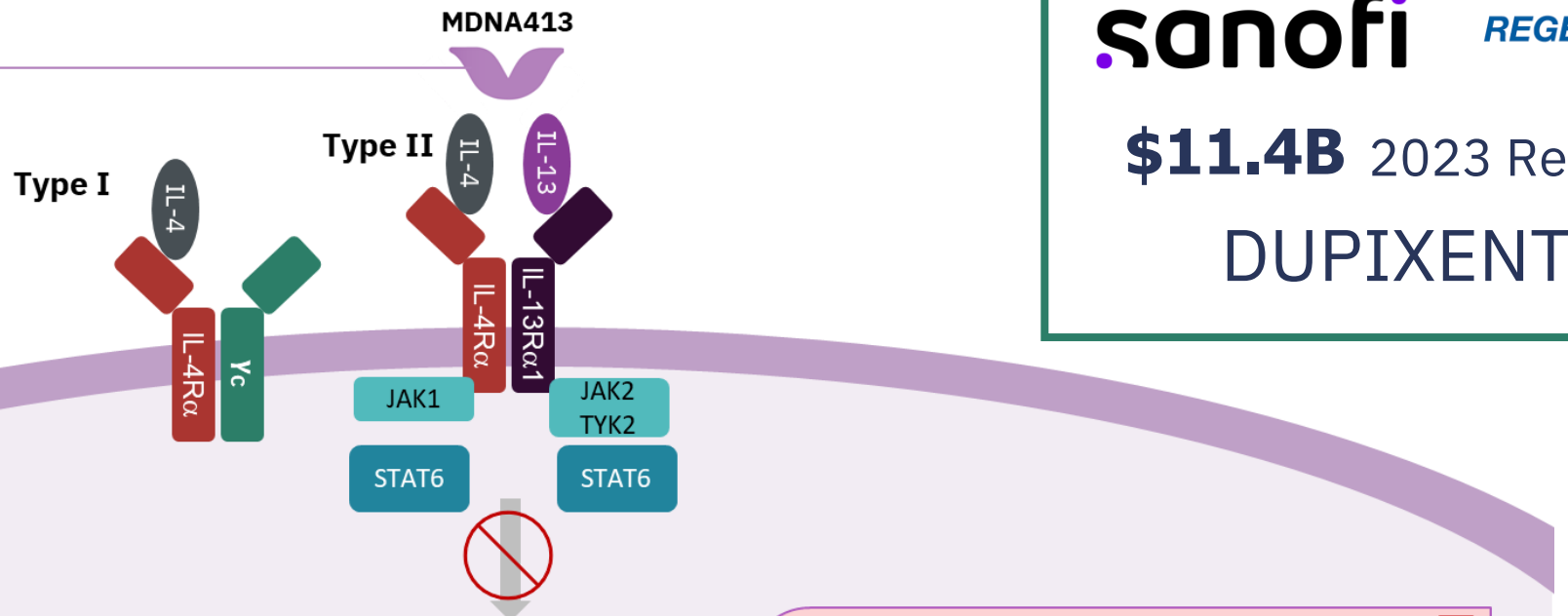
- **Mutations ablate γ_c-binding**
- **Dominant negative inhibition of effector CD4, CD8 and NK cells**

MDNA413: A Highly Selective IL-4/IL-13 Pathway Super-Antagonist

The Potential Topical or Aerosolized Administration for Chronic Inflammatory Diseases

MDNA413
Type II IL-4R Antagonist

- High affinity inhibitor of IL-13Rα1
- Preserves endogenous type I IL-4R signaling
- Potential to synergize with anti-IL-4Rα inhibitors
- Fc added to extend half-life



Cancer
- Skewing towards M2a TAMs
- Promotion of MDSCs
- Pro-tumor TME
- Promotes tumor growth and metastasis

Th2-Mediated Diseases
- Activation of myeloid cells and non-hematopoietic cells (i.e., nerve fibers)
- Promotes pathogenesis of airway inflammation, AD, EoE, itch, and other allergic indications

sanofi REGENERON

$11.4B 2023 Revenue

DUPIXENT®

Catalysts and Financials

Expected Milestones and Events

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2024 Anticipated Milestones & Upcoming Events

2024 Timeline

2024 H1

2024 H2

MDNA11

- Expanded Clinical Sites and Combo Enrolment
- Complete Monotherapy Escalation Data
- Initial Monotherapy Expansion Data
- Initial Combination Escalation Data
- Topline Monotherapy Expansion Data
- Additional Combination Escalation Data
- Preliminary Combination Expansion Data

Bizaxofusp (MDNA55)

- Breakthrough Therapy Designation
- EMA Alignment for Phase 3 Design
- Secure Partnership and Commence Phase 3

Potential Upcoming Events

Confirmed	Confirmed	Planned	Planned	Planned
April 5-10	May 31, June 1	Sep 4 - 7	Nov 6 - 10	Dec 4 - 5
AACR American Association for Cancer Research	SACHS ASSOCIATES 10TH ANNUAL ONCOLOGY INNOVATION FORUM 31st of May 2024; 2024 ASCO ANNUAL MEETING	The Promise of Interleukin-2 Therapy. For autoimmune and inflammatory diseases, allergy, transplantation and cancer	Society for Immunotherapy of Cancer SITC 2024 NOV. 6-10 | HOUSTON	IMMUNOTHERAPY 10 YEARS 2024 BRIDGE

Evolutionary Cytokines Revolutionary Medicines

Superkine Platform

Medicenna's Drug Discovery Engine

- ✓ 2 First-in-Class Clinical Stage Assets
  MDNA11 | Bizaxofusp (MDNA55)

- ✓ Robust Oncology & Autoimmune Pipeline
  BiSKITs | MDNA113 | MDNA 209 | MDNA413 | MDNA134

Next Generation **Superkines**
Developing Life-Changing **Therapies**

Financial Highlights

TSX | OTCQB	MDNA | MDNAF
Headquarters	Toronto, CA
Market Capitalization	$160M CAD
Cash	$37M CAD[1,2]
Debt	$0
Basic SO	~80 Million[1,2]
Fully Diluted SO	~104 Million[1,2]
Insider Ownership	~22%[1,2]

[1] As of 3/31/2024
[2] Adjusted for recent $20M private placement by RA Capital, which included ~5M common shares and ~5M pre-funded warrants

Thank you

Investor Relations | ir@medicenna.com

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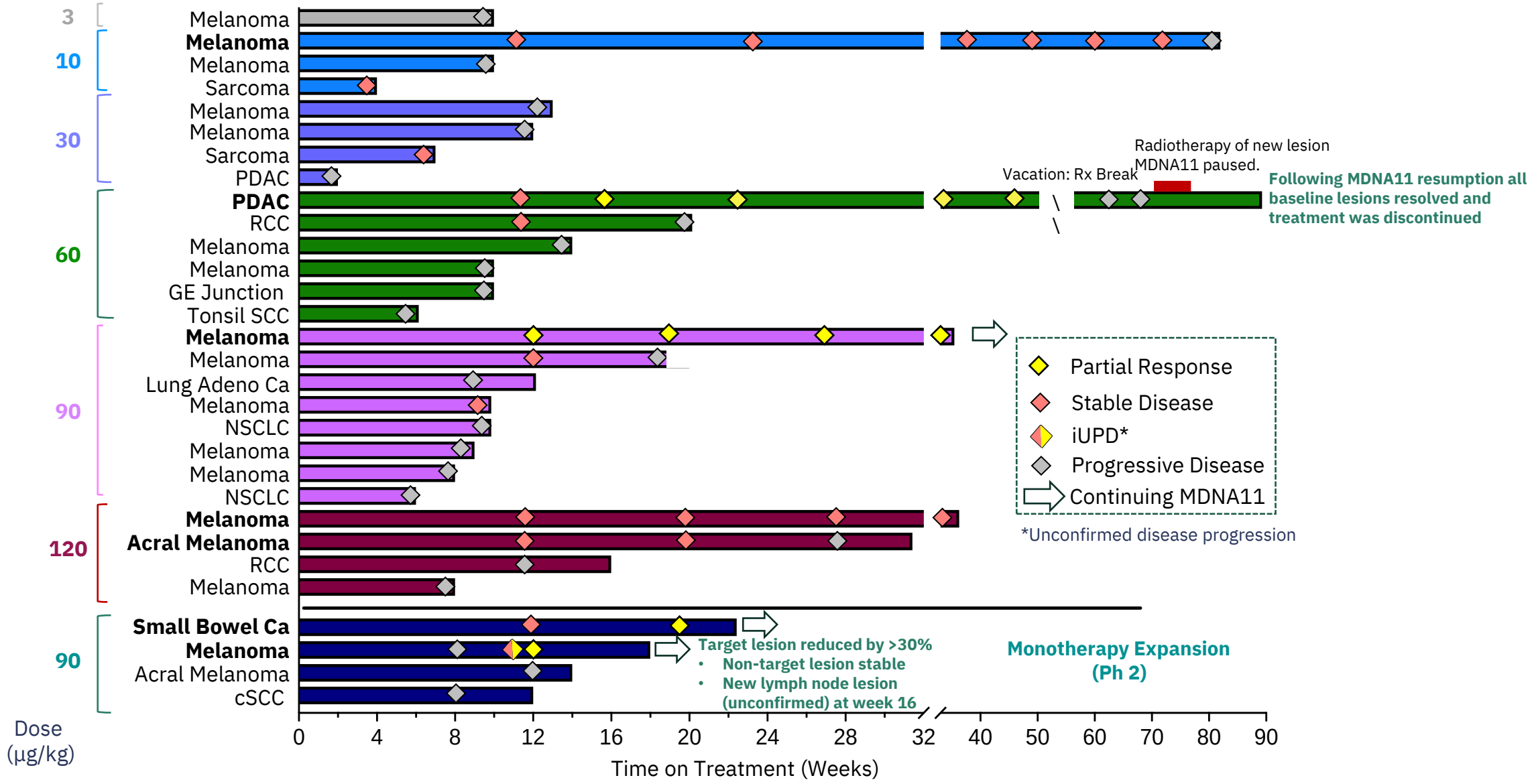
Baseline Monotherapy Patient and Tumor Characteristics

All patients have advanced solid tumors and failed prior therapies

Baseline characteristics *(as of 22-Mar-2024)*	**Escalation/Evaluation (N=30)** *Completed*	**Expansion (N=8)** *Enrolling*
Age, years: median (range)	63 (27-78)	65.5 (49-85)
Male, N (%)	22 (73.3%)	4 (50%)
Baseline ECOG = 0, N (%)	19 (63.3%)	5 (62.5%)
Baseline ECOG = 1, N (%)	11 (36.6%)	3(37.5%)
Primary Tumor Type	**N (%)**	**N (%)**
Melanoma (16 Cutaneous, 1 Mucosal and 2 Acral)	16 (53.3 %)	3 (37.5%)
Non-small Cell Lung Cancer (NSCLC)	3 (10%)	
Pancreatic Ductal Adenocarcinoma (PDAC)	3 (10%)	
Renal Cell Carcinoma (Non-Clear Cell)	2 (6.6%)	
Sarcoma (1 Pleiomorphic sarcoma and 1 Leiomyosarcoma)	2 (6.6%)	
Ovarian Cancer	2(6.6%)	
Cutaneous Squamous Cell Carcinoma		2 (25%)
Basal Cell Carcinoma		1 (12.5%)
Tonsillar Squamous Cell Carcinoma	1 (3.3%)	
Small Bowel Cancer		1 (12.5%)
Gastro-esophageal/Gastric Adenocarcinoma	1 (3.3%)	1 (12.5%)
Prior Systemic Therapies	**N (%)**	**N (%)**
Prior Lines of Therapy: 1-2	22 (73.3%)	6 (75%)
Prior Lines of Therapy: 3-4	8 (26.6%)	2 (23%)
Immunotherapy	22 (73.3%)	8 (100%)
Targeted Therapy	5 (16.6%)	1 (12.5%)
Chemotherapy	15 (50 %)	2 (25%)

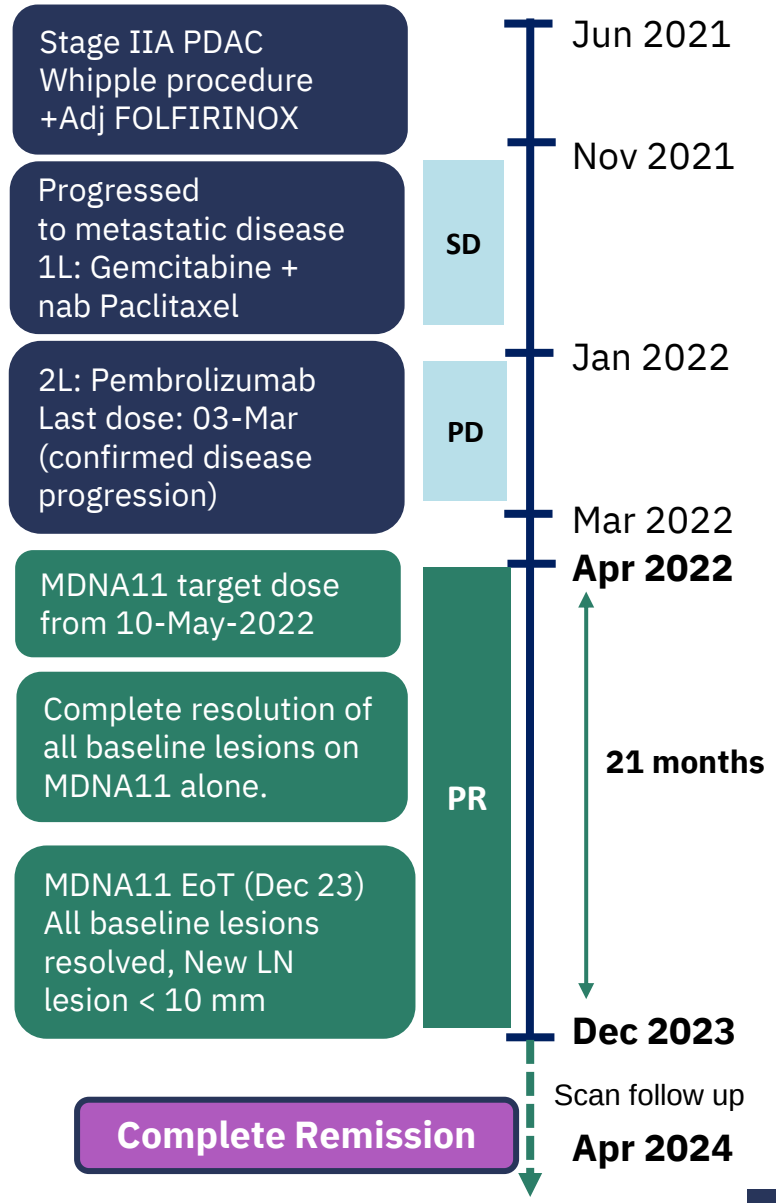
MDNA11: Duration & Response (N=30), All Dose Cohorts



Complete Remission in Patient with Pancreatic Cancer (MSI-H)

Complete Remission Sustained ~4 months After Stopping Treatment

Timepoint	Target Lesions Response (% change from baseline)	Non-Target lesions Response	New lesions	Overall response (RECIST1.1)
Screening	TL-1- Hepatic lesion TL-2-Hepatic lesion	Hepatic lesion	N/A	N/A
Week 12	-25.5%; SD	Non-CR/Non-PD	No	SD
Week 16	-34.8%; PR	Non-CR/Non-PD	No	PR
Week 35	**-55.1%; PR**	**CR**	**No**	**PR**
Treatment break for vacation (week 55-62); New LN Lesion Appeared on Vacation; MDNA11 resumed from week 63				
Week 62	-79%; PR	CR	+ (LN lesion) 17 mm	PD
Week 66	**-100%; CR**	**CR**	**+ (LN lesion) 19 mm**	**PD**
Treatment break; single cycle of radiotherapy for new LN lesion (Week 67-73); MDNA11 resumed from week 73				
Week 76	-100%; CR	CR	NE; 12 mm	NE
Week 88	**-100%; CR**	**CR**	**NE; <10 mm**	**NE**
End of MDNA11 treatment at week 90				
Week 104 (~ 4 months from EoT)	**-100%; CR**	**CR**	**<10 mm**	**Remains in Complete Remission**



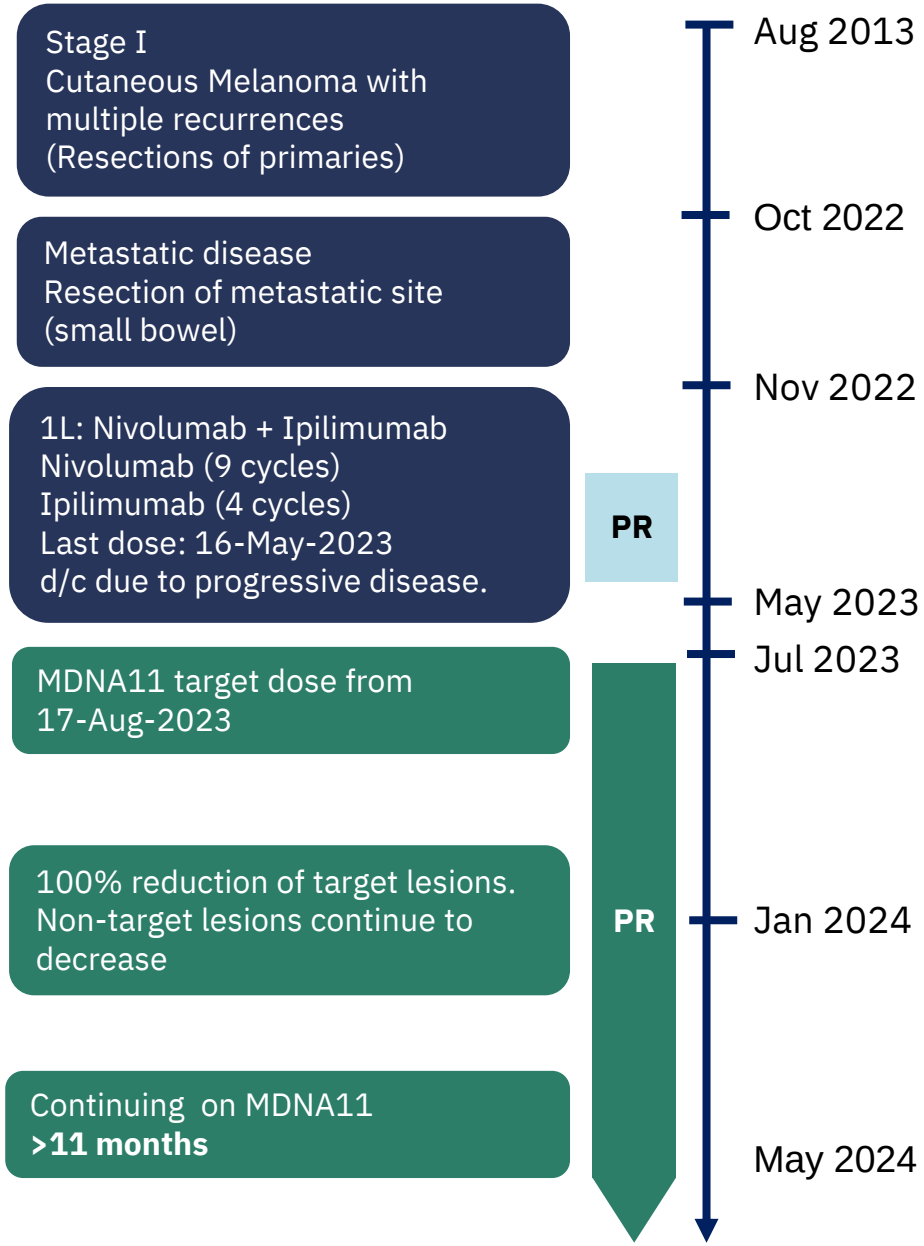
TL, target lesion | LN, lymph node | EoT, end of treatment
SD, stable disease | PR, partial response | CR, complete response

Sustained Partial Response with 100% Reduction of Target Lesions

Sustained Response in Melanoma Patient on MDNA11 (90 µg/kg)

Timepoint	Target Lesions Response (% change from baseline)	Non-Target Lesions Response	New Lesions	Overall Response (RECIST1.1)
Screening	Peritoneal Nodule	Multiple Peritoneal Nodules	N/A	N/A
Week 12	-70%; PR	Non-CR/ Non-PD	No	PR
Week 20	-80%; PR	Non-CR/ Non-PD	No	PR
Week 28	**-100%; CR**	Non-CR/ Non-PD*	No	PR
Week 36	**-100%; CR**	Non-CR/ Non-PD*	No	PR
Week 44	**-100%; CR**	Non-CR/ Non-PD*	No	PR

*Non-Target Lesions continue to decrease



PR, partial response | CR, complete response

MDNA11: Extensive Independent Validation of IL-2 Superkine Platform

Author/Publication	Title	MDNA109 Platform
Gao, Yu et al, JCI 2023	Implication of 99mTc-sum IL-2 SPECT/ CT in immunotherapy by imaging of tumor--infiltrating T cells	SumIL2-Fc in article is MDNA109FA-Fc (Long acting “not-alpha” variant)
Bae, J et al., Nature Cell Biology 2022	IL-2 delivery by engineered mesenchymal stem cells re-invigorates CD8+ T cells to overcome immunotherapy resistance in cancer	sIL-2 in article is MDNA109FA-Fc (Long acting “not-alpha” variant)
Allen, GM et al., Science 2022	Synthetic cytokine circuits that drive T cells into immune-excluded tumors	sIL-2 in article is MDNA109
Brog, RA et al , Cancer Immunology Research 2022	Superkine IL2 and IL33 armored CAR T cells reshape the tumor microenvironment and reduce growth of multiple solid tumors	Super 2 in article is MDNA109 (variant D10)
Merchant, R et al, JITC 2022	Fine-tuned long-acting interleukin-2 superkine potentiates durable immune responses in mice and non-human primate	MDNA11 in article is MDNA109FEAA-Albumin (Long acting “not-alpha” variant)
Wolf, NK et al, PNAS 2022	Synergy of a STING agonist and an IL-2 superkine in cancer immunotherapy against MHC I–deficient and MHC I+ tumors	H9-MSA in article is MDNA109-MSA (Long acting version fused to mouse albumin)
Hsu, EJ et. al., Nature 2021	A cytokine receptor-masked IL2 prodrug selectively activates tumor-infiltrating lymphocytes for potent antitumor therapy	SumIL2-Fc in article is MDNA109FA-Fc (Long acting “not-alpha” variant)
Quixabeira, D et al., Front. Immuno., 2021	Oncolytic Adenovirus Coding for a Variant Interleukin 2 (vIL-2) Cytokine Re-Programs the Tumor Microenvironment and Confers Enhanced Tumor Control	vIL-2 in article is MDNA109
Sun, Z et. al., Nature 2019	A next-generation tumor-targeting IL-2 preferentially promotes tumor-infiltrating CD8+ T-cell response and effective tumor control	SumIL2-Fc in article is MDNA109FA-Fc (Long acting “not-alpha” variant)
Ardolino, A et al., JCI 2015	Cytokine therapy reverses NK cell anergy in MHC-deficient tumors	H9 in article is MDNA109
Zitvogel, L and Kroemer, G, JCI 2014	Cytokines reinstate NK cell–mediated cancer immunosurveillance	H9 in article is MDNA109
Levin, AM et al., JCI 2012	Exploiting a natural conformational switch to engineer an Interleukin-2 superkine	Super-2 and H9 in article is MDNA109

Bizaxofusp (MDNA55): Publications

Author/Publication	Title
Sampson JD et al, Neuro Oncology 2023	Targeting the IL4 receptor with MDNA55 in patients with recurrent glioblastoma: Results of a phase IIb trial
Bagley SJ, Neuro Oncology, 2023	Editor's Choice Editorial: Phase II trials in the era of glioblastoma immunotherapy: New mechanisms of action, familiar challenges in trial design and tumor response assessment
Majumdar A et al, Statistics in Biosciences, 2022	Building an External Control Arm for Development of a New Molecular Entity: An Application in a Recurrent Glioblastoma Trial for MDNA55
Davi R et al, Neuro Oncology Advances 2021	Incorporating External Control Arm In MDNA55 Recurrent Glioblastoma Registration Trial
Rahman R et al, Lancet, 2021	Leveraging external data in the design and analysis of clinical trials in neuro-oncology
Elligson B et al, Clin. Cancer Res. 2021	Modified RANO (mRANO), Immunotherapy RANO, and Standard RANO Response to Convection-Enhanced Delivery of IL4R-Targeted Immunotoxin MDNA55 in Recurrent Glioblastoma
Mohan, S et al SNI, 2021	Multiparametric MRI assessment of response to convection-enhanced intratumoral delivery of MDNA55, an interleukin-4 receptor targeted immunotherapy, for recurrent glioblastoma
Han J. and Puri R. J Neuro-Oncology , 2018	Analysis of the cancer genome atlas (TCGA) database identifies an inverse relationship between interleukin-13 receptor α1 and α2 gene expression and poor prognosis and drug resistance in subjects with glioblastoma multiforme
Kamran N, et. al.. Mol Ther, 2017	Immunosuppressive Myeloid Cells' Blockade in the Glioma Microenvironment Enhances the Efficacy of Immune-Stimulatory Gene Therapy
Otvos B et. al., Stem Cells , 2016	Cancer Stem Cell-Secreted Macrophage Migration Inhibitory Factor Stimulates Myeloid Derived Suppressor Cell Function and Facilitates Glioblastoma Immune Evasion