MEDICENNA

Master the Signal.
Navigate Complexity.
Create Cures.

Pipeline positioned for multiple near-term catalysts

TSX: MDNA | OTCQX: MDNAF

Sepetmber 2026

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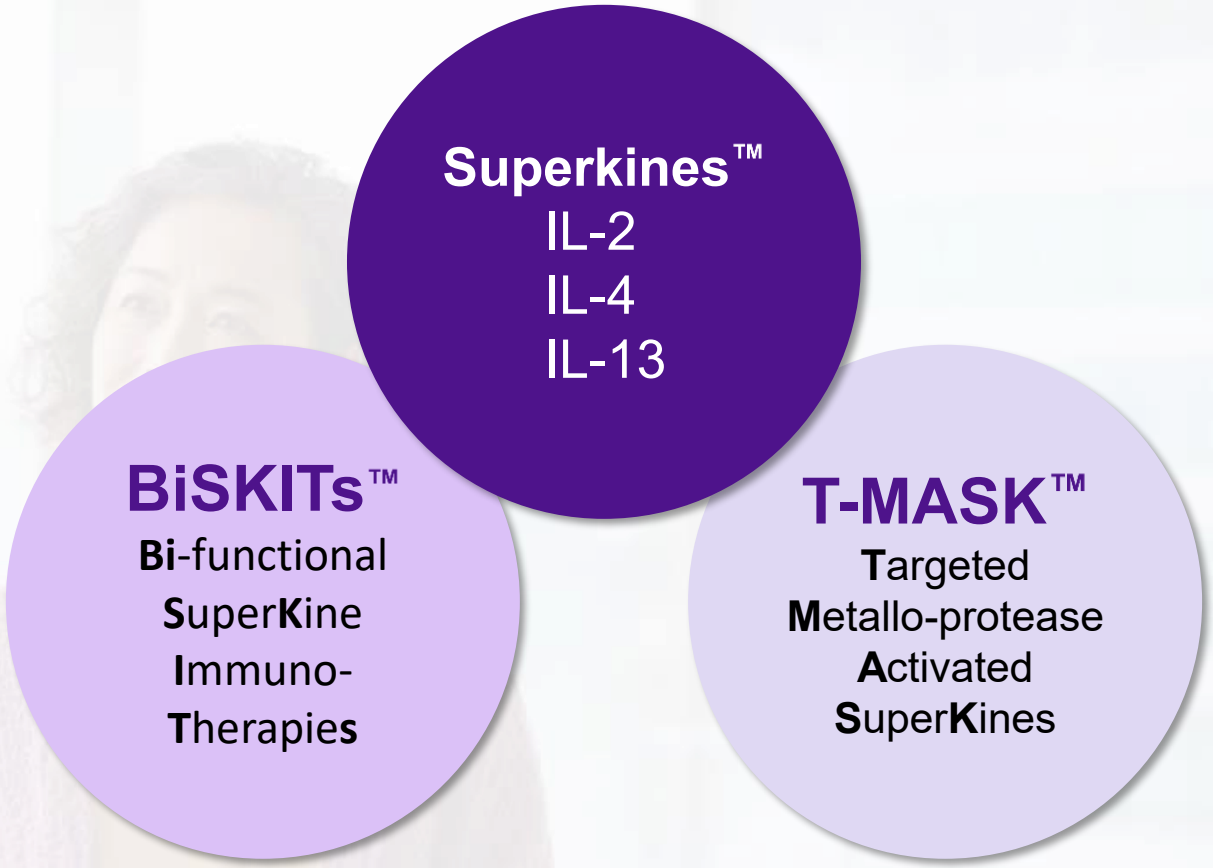
Superkines: Harnessing the Immune System to Improve Patient Outcomes

MISSION

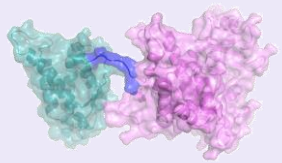
DELIVERING THE NEXT WAVE OF IMMUNOTHERAPIES

to transform the lives of people living with cancer, autoimmune, and inflammatory diseases



Advancing best-in-class and/or first-in-class immunotherapies

A Clinical Stage Immunotherapy Company Developing Engineered Cytokines

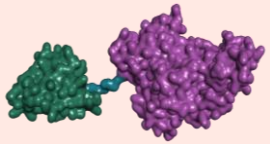


Phase-3 Ready

Bizaxofusp (MDNA55)

IL-4R Targeted Therapy

- 118 patients treated to-date
- 2x median overall survival in recurrent glioblastoma, the deadliest brain cancer
- Pursuing partnerships to commence Phase 3 in 2027
- Fast Track (FDA) and Orphan Drug Designation (FDA/EMA)

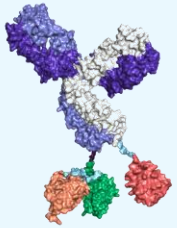


Phase 1/2

MDNA11

Long-acting IL-2 Superkine

- ~150 patients treated to-date
- 30-40% overall response rate in 2L/3L checkpoint-resistant cancers
- ABILITY-1 Phase 1/2 Enrollment Completion Q3 2026, Oral Topline Data Presentation Q4 2026
- NEO-CYT Phase 1b Interim Data Q4 2026



IND-enabling

MDNA113

Tumor-activated PD-1 x IL-2

- Non-human primate studies ✓
- AACR 2026: enhanced therapeutic window vs. competing IL-2$^{\alpha\text{-bias}}$ design
- IND-enabling studies to complete in Q4 2026 and planning for Phase 1 studies underway

Lead Programs: Upcoming Value Inflection Milestones

	Q4 2026	2027
Bizaxofusp (MDNA55)	rGBM Oral Presentation	Plan/Commence Phase 3
MDNA11	ABILITY-1: Topline Oral Presentation NEO-CYT: Interim Data	Plan/Commence Phase 2 Registrational Trial
MDNA113	Complete IND-enabling studies	File IND/Commence Phase 1 Trial

Balanced Pipeline of Registrational, Clinical, and Pre-Clinical Programs

CANDIDATEa	INDICATION	PRECLINICAL / PHASE 1 / PHASE 2 / PHASE 3	PARTNER
Bizaxofusp IL-4-Toxin Fusion	Recurrent Glioblastoma (rGBM)		
MDNA11 IL-2 Super Agonist	Various solid tumors	**MDNA11 monotherapy** **MDNA11 + KEYTRUDA®** *ABILITY-1: Phase 1/2 in various cancers*	MERCK
		MDNA11 + OPDIVO® ± YERVOY® *NEO-CYT: Phase 1b in Neoadjuvant Melanoma*	Fondazione Melanoma
MDNA113 anti-PD-1 x IL-2 Masked Bispecific	Various solid tumors expressing IL-13Rα2		
MDNA209 CD122 Antagonist Blocking IL-2/IL-15	Autoimmune diseases		
MDNA413 IL-4/13 Pathway Super Antagonist	Inflammatory diseases		

Bizaxofusp (MDNA55)

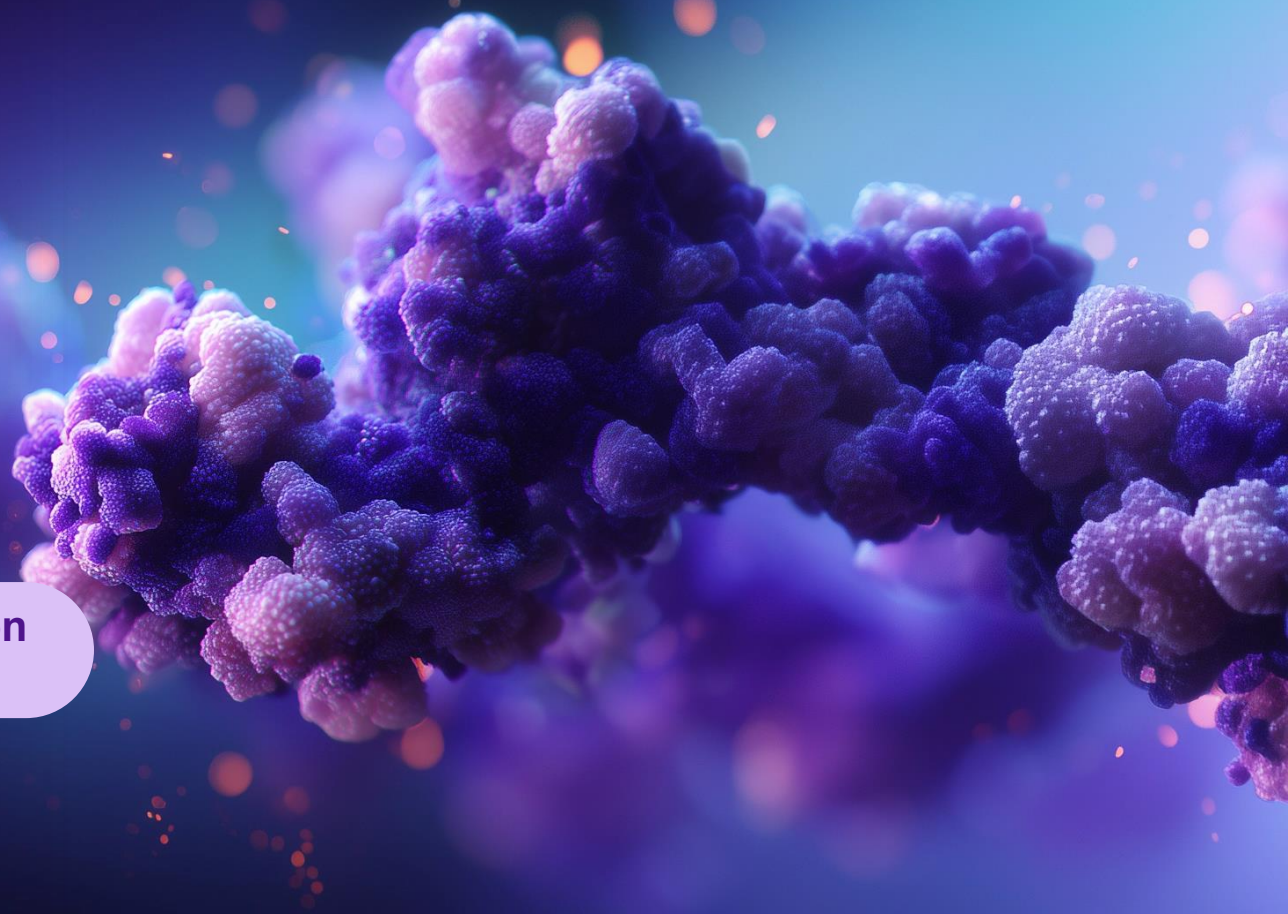
A Phase 3-ready IL-4R-targeted therapy for glioblastoma (GBM)

Doubled median overall survival in Phase 2b

Fast Track Designation

Orphan Drug Designation

✓ FDA alignment on Phase 3 Design



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Treatment Paradigm for GBM has NOT Changed in Decades & GBM is Uniformly Fatal

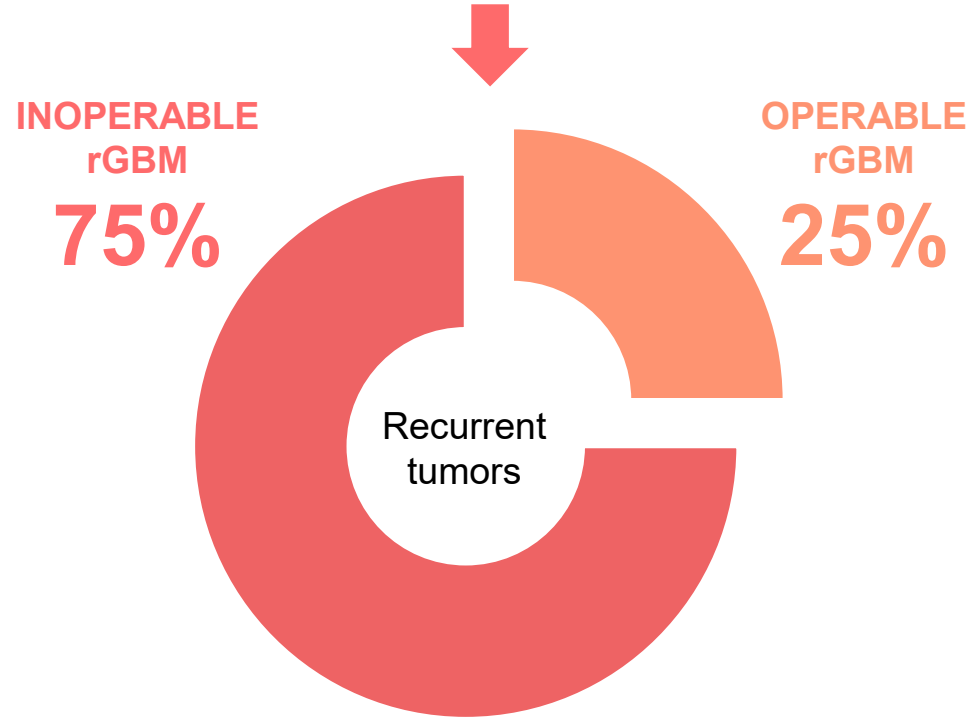
Patient Journey

Diagnosis → **Surgery** → **Radiotherapy** + **Chemotherapy** → **Adjuvant Chemotherapy**

70-85% of patients

*55% of GBM Temodar-Resistant**

100%
of patients
RELAPSE



Median overall survival for **inoperable rGBM** is **7 months**[1]

In Phase 2b, high dose Bizaxofusp (MDNA55) DOUBLED median overall survival in inoperable rGBM to
13.5 months

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[1]Karschnia et al. *Neuro-Oncology*, Volume 25, Issue 9, September 2023

Bizaxofusp: A Multi-Pronged Molecular Trojan Horse

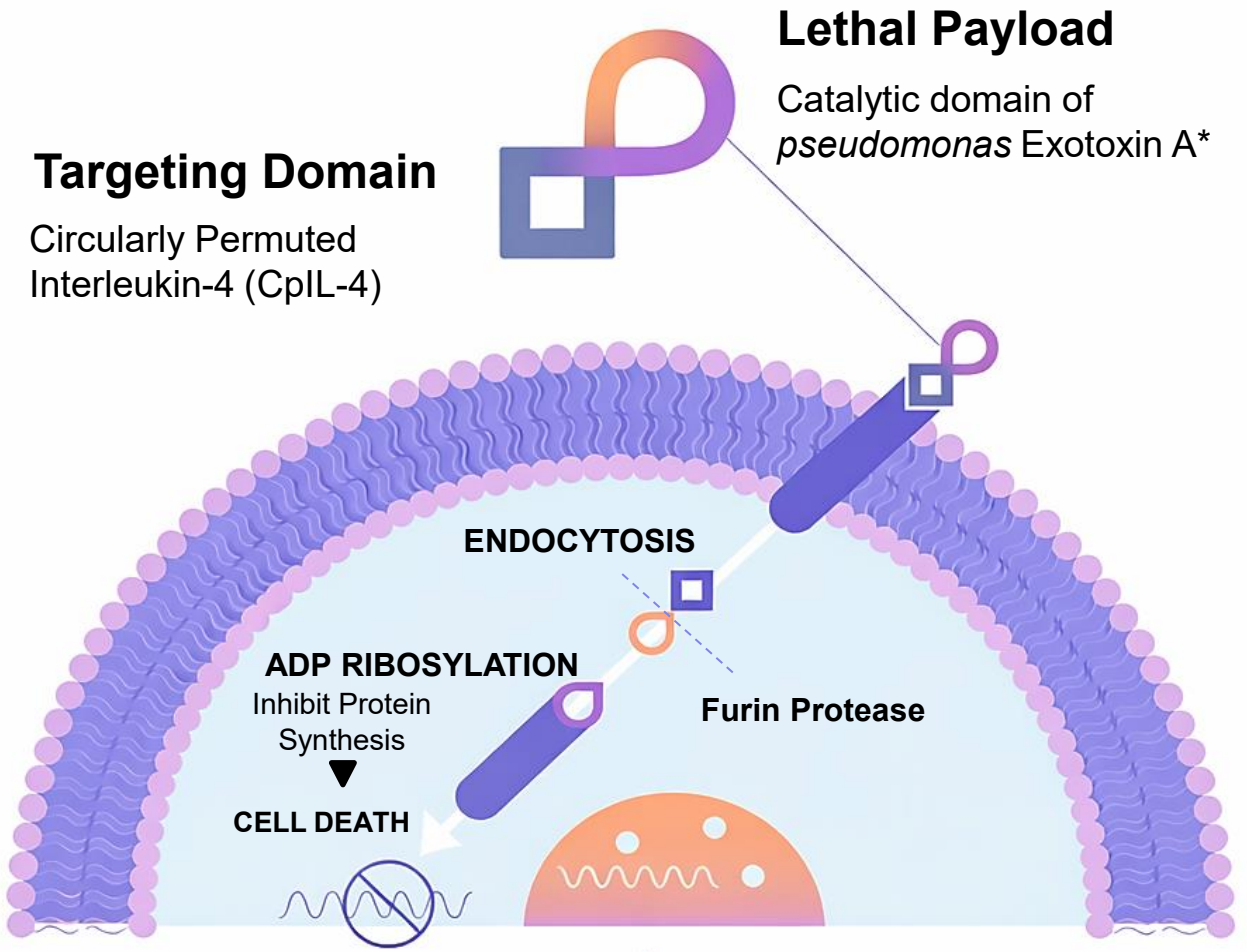
A first-in-class phase 3-ready IL-4 superkine for recurrent GBM

By-Passes Blood-Brain Barrier
Intra-tumoral administration **avoids systemic toxicity**

Highly Selective for IL-4 Receptor
IL-4 receptor is expressed in brain tumors, **but not in healthy brain cells**

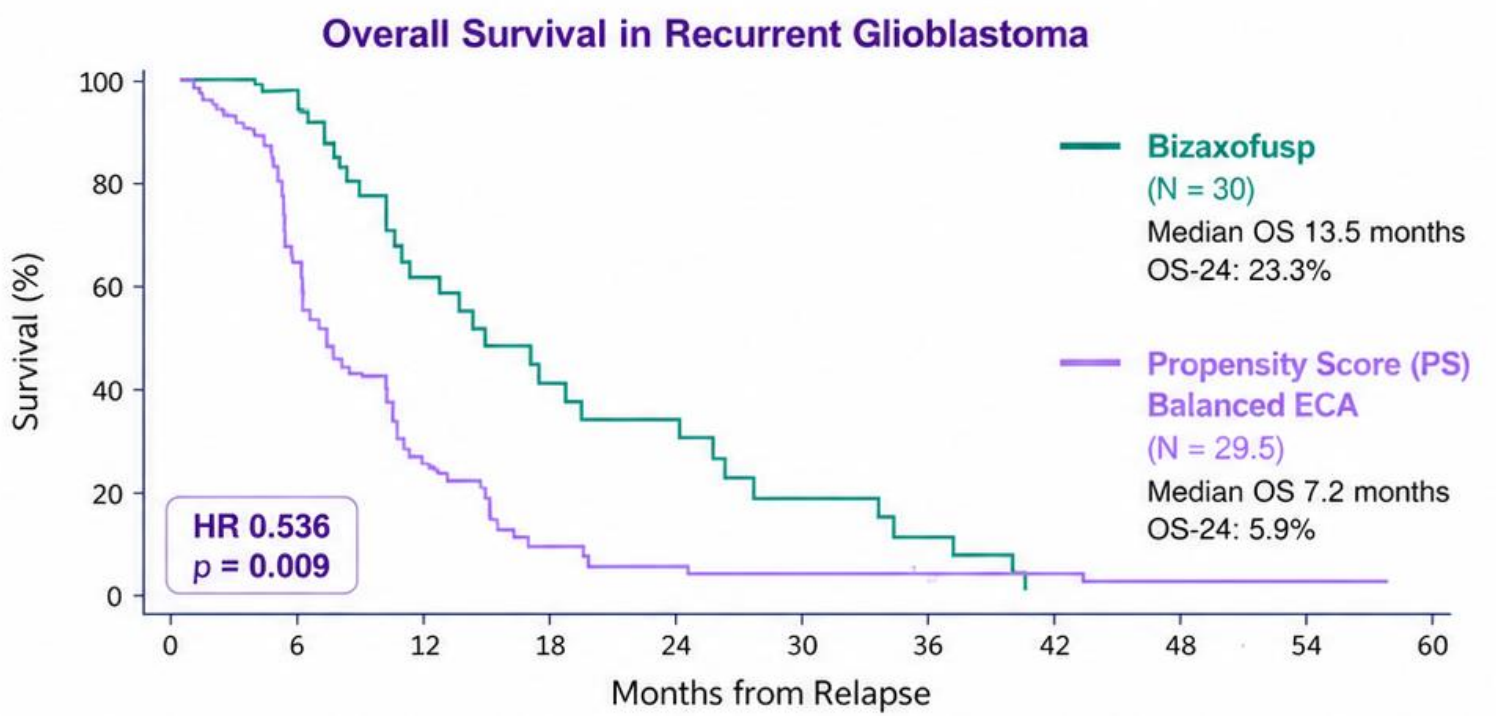
Disrupts the Tumor Microenvironment
Eliminates IL-4 receptor positive MDSCs, removing their immunosuppressive effect

Sustained anti-tumor immunity
Immunogenic cell death primes long-term anti-tumor immunity



MDSCs, myeloid-derived suppressor cells

Single Bizaxofusp Treatment: Doubled Median Overall Survival in Phase 2b



13.5 months
Median Overall Survival

vs 7.2 months*
External Control Arm (ECA)

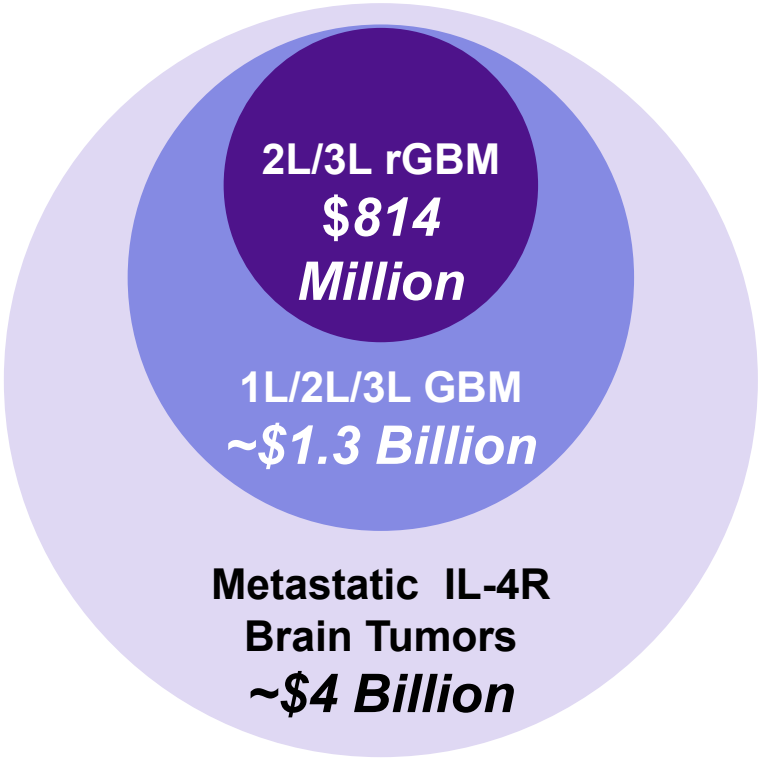
HR 0.536
p=0.009

~2x median OS in rGBM

*Patients with non-resectable rGBM live 7 months on average: Karschnia et al. *Neuro-Oncology*, Volume 25, Issue 9, September 2023

Bizaxofusp has $1.3B Annual GBM Sales Potential and $4B in other Brain Cancers

Projected Peak Sales[1]



	2L/3L rGBM	Non-resectable GBM	Metastatic IL-4R Brain Tumors *Renal | Breast | Colon | Leptomeningeal*
Total market *(patients)*	~19,000 annually (US/EU)	~22,000 annually (US/EU)	~76,000 annually (US/EU)

IL-4R Over-expressing Metastatic Brain Tumors

- **Renal Cancer** ~6,000
- **Breast Cancer** ~47,000
- **Colon Cancer** ~23,000

[1] Source: Primary research, Triangle Insights Group

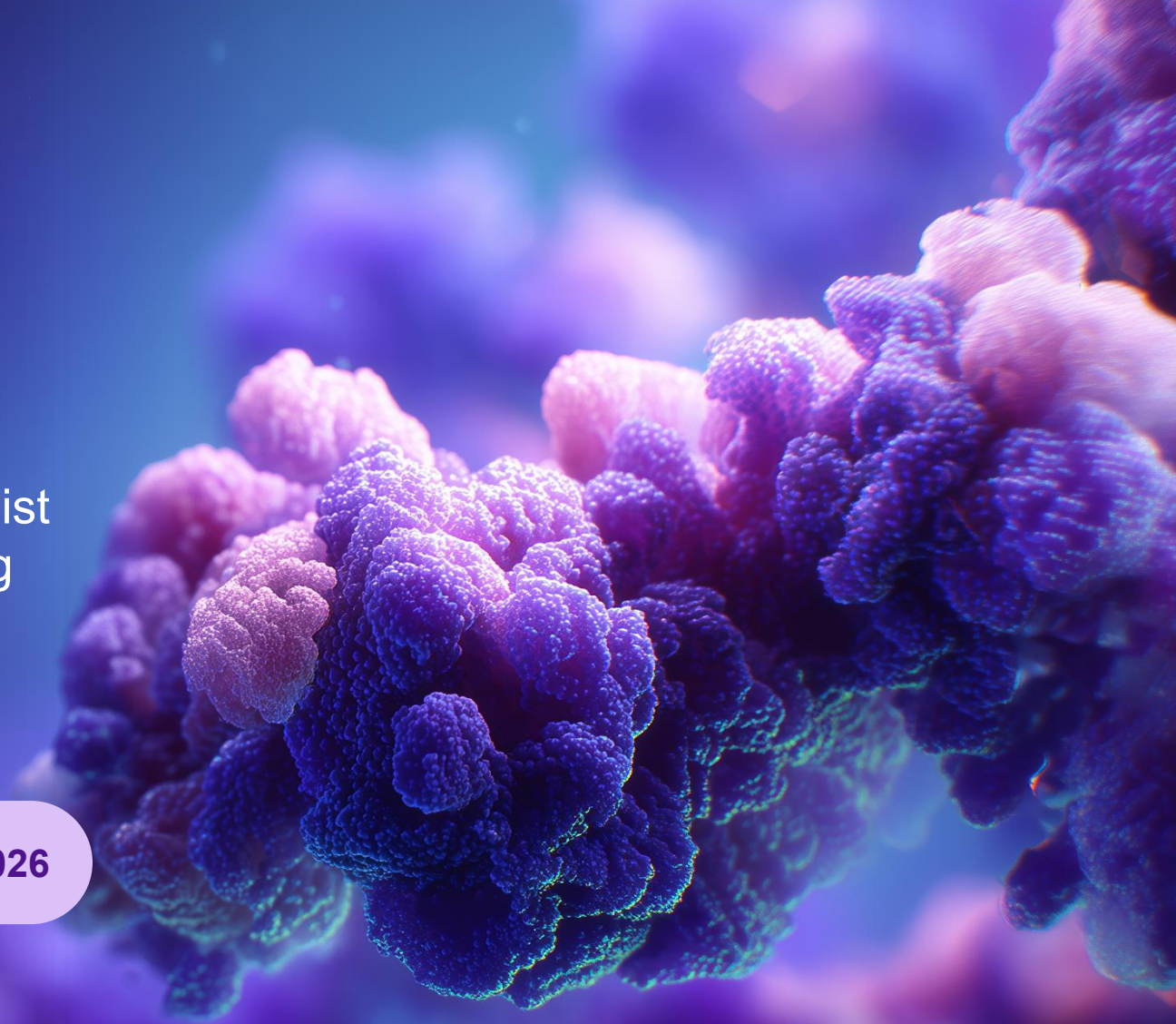
MDNA11

A long-acting, β-enhanced, not-α IL-2 superagonist designed to preferentially activate cancer-fighting immune cells

ABILITY-1
Phase 1/2

NEO-CYT
Phase 1b

Data Updates Q4 2026



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MDNA11 is a Differentiated Next-Gen IL-2 with Best-in-Class Potential

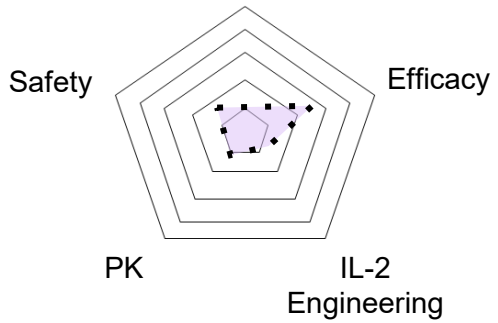
WILD-TYPE IL-2

1998

PROLEUKIN® For injection (aldesleukin) Recombinant IL-2

- An IL-2 agonist, was the first-ever immunotherapy approved for kidney cancer and melanoma
- Limited clinical utility because of short half-life, toxicity

THERAPEUTIC WINDOW



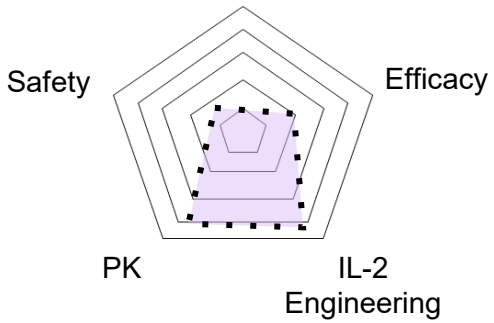
2ND GENERATION IL-2

2015 2017 2018

Roche Bristol Myers Squibb sanofi

- 2nd generation programs discontinued, due to poor efficacy

THERAPEUTIC WINDOW



NEXT-GENERATION IL-2

Present

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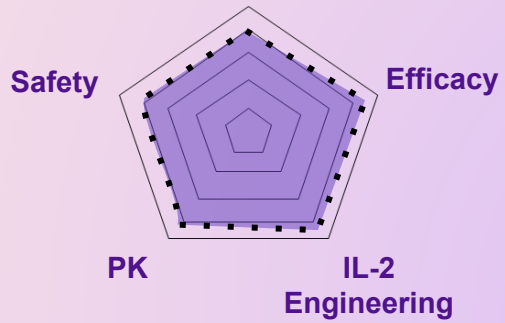
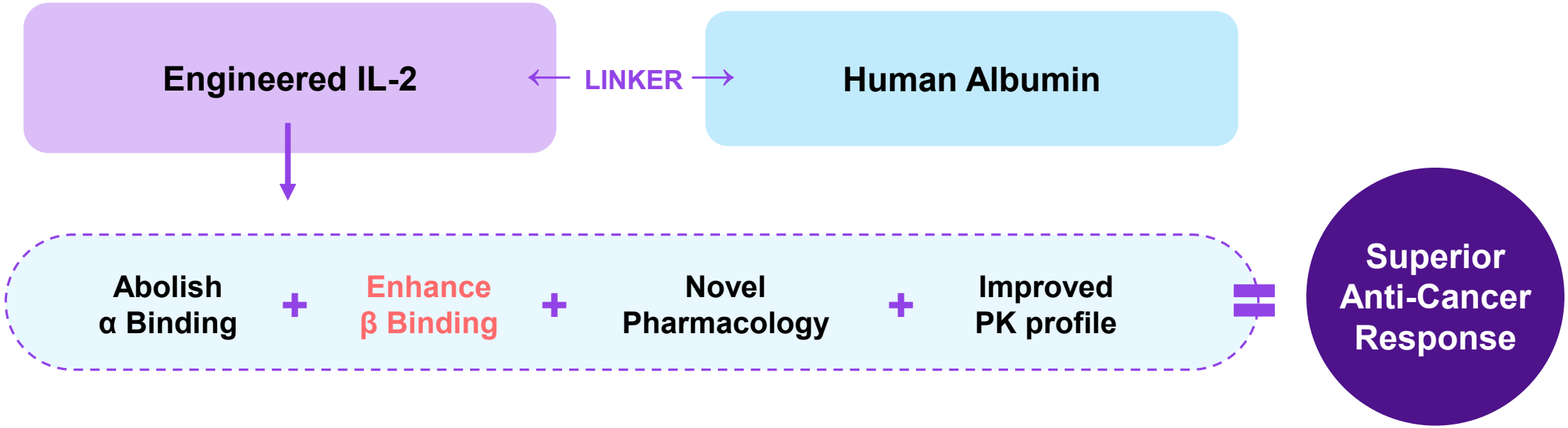
- **ABILITY-1 Study (in Collaboration with Merck):** Phase 1/2 trial ongoing for various cancers in combination with Merck's checkpoint inhibitor pembrolizumab
- **NEO-CYT Study (funded by Fondazione Melanoma):** Randomized Phase 1b trial ongoing in melanoma patients prior to surgery

THERAPEUTIC WINDOW



MDNA11: A Unique ‘β-enhanced Not-α’ IL-2 Albumin-fused Superkine



DECREASED Tregs

IMPROVED Safety

INCREASED Effector Cell Activation

IMPROVED T Cell Memory Response

HIGHLY Effective Against MHC I–Deficient Tumors

DECREASED NK Cell Exhaustion

INCREASED Half-Life

INCREASED Tumor Accumulation

IMPROVED Localization in Tumor Draining Lymph Nodes

Medicenna's β-enhanced IL-2 Approach: Validated by Independent Labs Worldwide

Synergy with mRNA Cancer Vaccines

Science Advances

AAAS

Ugur Sahin's lab

BIONTECH

Armored CAR-T

Cancer Immunology Research

Yina Huang's lab

DARTMOUTH

Tumor-triggered IL-2 Production By CAR-T

Science

Wendell Lim's lab

UCSF

Tumor-Selective Immune Amplifier

Cell

Ido Amit's lab

WEIZMANN INSTITUTE OF SCIENCE

Synergy with STING Agonist

PNAS

David Raulet's lab

Berkeley UNIVERSITY OF CALIFORNIA

Boost TILs inside TME

nature cell biology

Yang-Xin Fu's lab

UTSouthwestern Medical Center

Reverses NK Cell Exhaustion

JCI The Journal of Clinical Investigation

David Raulet's lab

Berkeley UNIVERSITY OF CALIFORNIA

Targeted & Conditional Activation

nature communications

Hua Peng's and Yan-Xin Fu's labs

UTSouthwestern Medical Center

Armed Oncolytic Viruses

frontiers in Immunology

Akseli Hemminki's Lab

UNIVERSITY OF HELSINKI

MDNA11 Aims to Address Unmet Needs in Patients Resistant to Checkpoint Therapy

Approved Checkpoint Therapy	KEYTRUDA®	OPDIVO®	LIBTAYO®	TECENTRIQ®	IMFINZI®
2025 Revenue / Loss of Exclusivity*	**$30B** / 2028	**$12B** / 2028	**$2B** / 2035	**$6B** / 2030	**$7B** / 2031

~$60B annual sales of checkpoint inhibitors…

but only ~30% of patients benefit

MDNA11's anti-tumor activity has been observed in difficult-to-treat checkpoint resistant advanced tumors

Single Agent Activity
36% ORR

N=14 in 2L/3L Tx or as next-line following checkpoint resistance

Combination with KEYTRUDA®
43% ORR

N=14 in 2L/3L Tx or as next-line following checkpoint resistance

Data cut-off: December 2nd, 2025, Presented at ESMO-IO 2025

* Anticipated loss of exclusivity for each agent, respectively

Two Ongoing Clinical Trials Designed to Inform Registrational Development

ABILITY-1 evaluating MDNA11 after checkpoint therapy
NEO-CYT evaluating MDNA11 before surgery in earlier-stage melanoma

ABILITY-1

NCT05086692

Phase 1/2 Trial in Advanced Solid Tumors

- ~150 patients treated to date: MDNA11 monotherapy and in combo with KEYTRUDA®
- Phase 2 expansion enrollment anticipated to complete in Q3 2026: MSI-H, Melanoma, MSS Endometrial, TMB-H/MSS GI Cancers
- Focused on 2L/3L Tx setting following checkpoint resistance to guide phase 2 registrational studies

Q4 2026: Topline Data Oral Presentation

NEO-CYT

EUCT 2024-519010-31-00

Phase 1b Trial in High Risk Surgically Resectable Stage III Melanoma

- ~80 patients to be enrolled, randomized to MDNA11 + OPDIVO® ± YERVOY®
- Major pathologic response is primary endpoint in patients with melanoma treated prior to surgery (neoadjuvant)
- Rapid randomized data in earlier line setting to guide registrational development

Q4 2026: Interim Data Presentation

MDNA113

A first-in-class tumor-targeted and tumor-activated anti-PD-1 x IL-2 bifunctional superkine

IND-enabling studies underway

First-in-class bifunctional

IL-13Rα2 anchoring

Conditional Activation

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‘Anti-PD-1 Bispecifics’ Have Emerged to Deal with the 2028 Patent Cliff of the World’s Best-Selling Cancer Therapies

Summit therapeutics | Akesobio

Ivonescimab

MERCK | 礼新医药 LaNova Medicines

LM-299

BIONTECH | Bristol Myers Squibb™

BNT327

Pfizer | 三生制药 3SBIO INC.

SSGJ-707

abbvie | RemeGen Biosciences

RC148

Takeda | Innovent

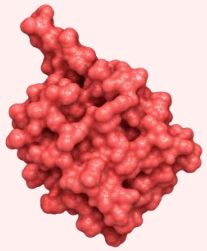
TAK-928

The Space has Seen ~$38B USD Aggregate Transaction Value Over the Past 24 months

- PD-(L)1 x VEGF combinations dominate early wave of transactions
- PD-1 x IL-2 emerging as next frontier

MDNA113: A Differentiated First-in-Class, Tumor Anchored Anti-PD1 x IL-2 Bi-functional Molecule

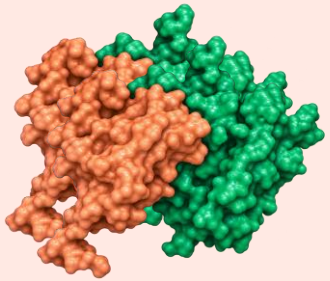
1 **IL-13Rα2 tumor targeting**



Binds to IL-13Rα2 expressing tumors and anchors the drug in the TME

+

2 **Clinically Validated IL-2**



IL-2 is masked peripherally and activated at the tumor

Unique: Dual conditional activation MoA

+

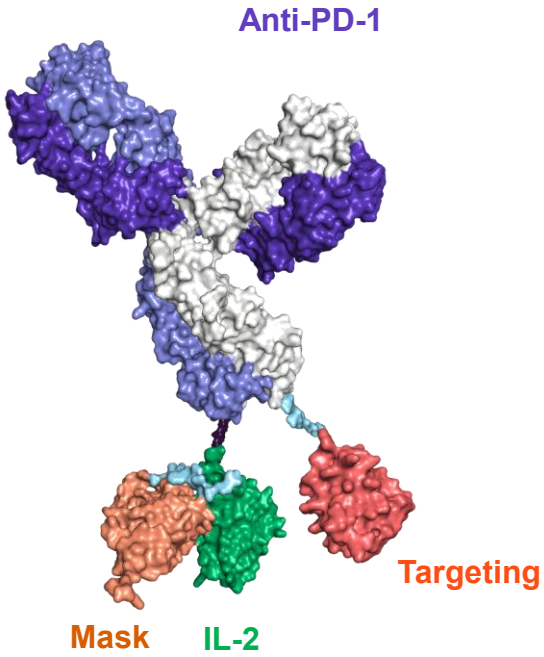
3 **Commercially Validated anti-PD1**

Once activated:

PD-1 prevents T-cell exhaustion and IL-2 activates T-cells

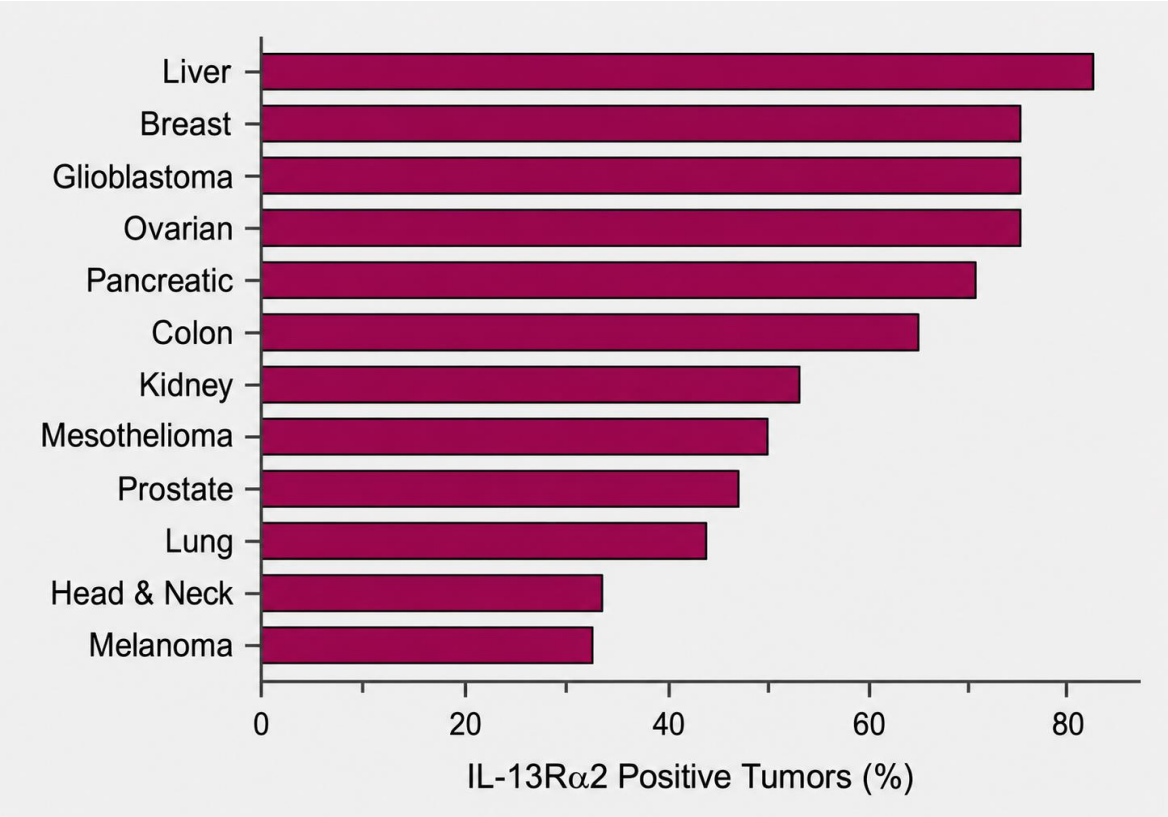
=

MDNA113



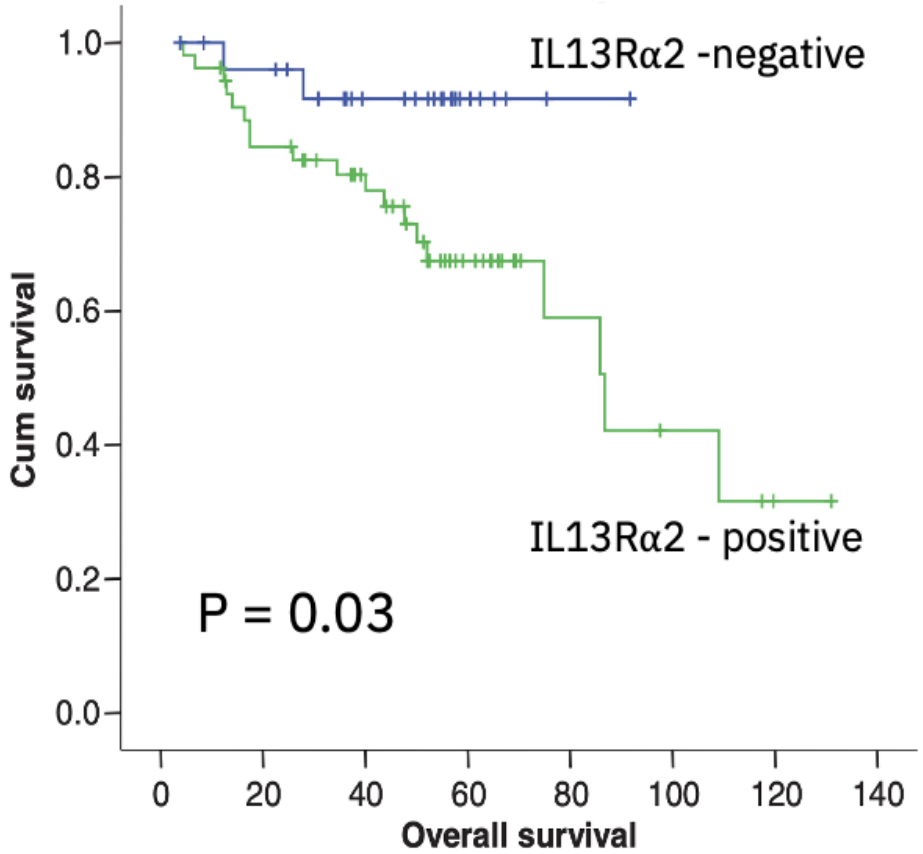
First-in-Class: MDNA113 Has a Significant Market Opportunity

>2 Million Tumors Express IL-13Rα2 Every Year



1. Hou et al., J Cancer Res & Clinical oncol (2009); 2. Papageorgis et al., Br Cancer Res (2015); 3. Joshi et al., Cancer Res (2000); 4. Kioi et al., Cancer (2006); 5. Shimamura et al., Clin Cancer Res (2010); 6. Barderas et al., Cancer Res (2012); 7. Kang et al., J Per Med (2021); 8. Oncomine Cancer MicroArray (OMCA Database); 9. Nagai et al., Cancer Reprots (2023); 10. Xiw et al., Oncotarget (2015); 11. Kawakami et al., Clin Cancer Res (2003); 12. Beardi et al., Clin Cancer Res (2013)

IL-13Rα2 Expression is Associated with Poor Survival Across Various Cancers



COLON CANCER Barderas et al., Cancer Res, 2012

Targeting IL-13Rα2: MDNA113 is Designed to Overcome Limitations of Other PD-1/IL-2 Programs

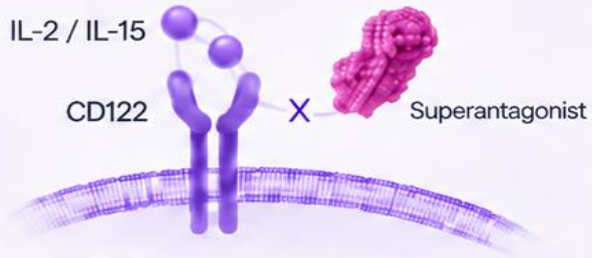
	MEDICENNA	Takeda Innovent	REGENERON	Anwita Biosciences	xilio THERAPEUTICS
PD-1 Blocking	✓	✓	✗	✓	✓
No IL-2Rα Affinity	✓	✗	✗	✓	✗
Enhanced IL-2Rβγ Affinity	✓	✗	✗	✗	✗
IL-2 Single Agent Activity in CPI Resistant Patients	✓	✗	✗	✗	✗
Tumor Targeting	✓	✗	✗	✗	✗
Conditional Activation	✓	✗	✓	✗	✓
	MDNA113 IND-enabling	**IBI363/TAK-928** Phase 2/3	**REGN10597** Phase 1	**AWT020** Phase 1	**XTX501** Phase 1

Autoimmune and Inflammatory: Expanding our Superkines Beyond Oncology

Pre-clinical

MDNA209

IL-2 / IL-15 Superantagonist



- Designed to block CD122-driven signaling
- Aims to suppress pathogenic T and NK cell activity
- Broad autoimmune / inflammatory potential
- Differentiated cytokine-based approach to IL-2 / IL-15 antagonism

Recent deal comp

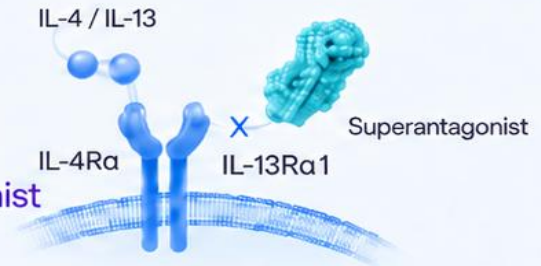
argenx acquired Forte Biosciences
FB102 anti-CD122 antibody
$2.2B total equity value | July 2026

Autoimmune disease | Inflammation | Platform optionality

Pre-clinical

MDNA413

IL-4 / IL-13 Superantagonist



- Selective Type II receptor blockade
- Potential in inflammatory disease settings
- Potential for inhaled formulation
- Creates longer-term strategic optionality

Recent deal comp

AbbVie acquired Apogee Therapeutics
APG777 anti-IL-13 antibody
$10.9B total equity value | June 2026

Inflammatory disease | Potential for inhaled formulation | Platform expansion

While near-term value is driven by Bizaxofusp, MDNA11 and MDNA113, discovery assets provide longer-term platform optionality.

Why it matters

- Extends the platform beyond oncology
- Adds pipeline breadth in immune-mediated disease
- Creates longer-term strategic optionality

Stock and Financial Information

Cash runway extends through key near-term milestones into the second quarter of calendar 2027

Capitalization Summary

TSX | OTCQX	MDNA | MDNAF
Headquarters	Toronto, CA
Market Capitalization	$40M CAD
Cash	$7M CAD[1,2]
Debt	$0
Basic SO	~92 Million[1,2]
Fully Diluted SO	~120 Million[1,2]
Insider Ownership	~20%[1,2]

[1] As of 6/30/2026 – *See Company's Q1 F2027 Financial Results and MD&A*
[2] Includes $4.44M public offering closed May 28, and 2026 Australian R&D incentive

ANALYST COVERAGE

Bloom Burton & Co.
David Martin PhD, MBA

Lucid Capital
Dev Prasad PhD, MBA

H. C. Wainwright & Co
Swayampakula Ramakanth PhD, MBA

Research Capital
Andre Uddin PhD

Upcoming Catalysts Across the Pipeline

Program	Timing	Catalyst
Bizaxofusp	Q4 2026 Ongoing	Updated Data Oral presentation Partnering and Phase 3 Planning
MDNA11	Q3 2026 Q4 2026 Q4 2026	Complete Enrollment (N=150) ABILITY-1 Topline Oral NEO-CYT Interim Data
MDNA113	H1 2027 H1 2027	IND submission Commence First-in Human Phase 1
MDNA209 / MDNA413	Ongoing	Partnering and future development to advance first-in-class programs

Takeaway

Multiple programs are approaching inflection points over next 3-6 months

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Thank you

Investor Relations ir@medicenna.com

www.medicenna.com

TSX: MDNA | OTCQX: MDNAF

Extensive Independent Validation of IL-2 Superkine Platform

Author/Publication	Title	MDNA109 Platform
von Locquenghien, M et al., Cell 2025	Macrophage-targeted immunocytokine leverages myeloid, T, and NK cell synergy for cancer immunotherapy	MiTEs (αTREM2–IL-2 H9 “superkine”; IL-2SK) in the article correspond to the MDNA109 platform (“non-α”, masked and conditionally-activated).
Gao, Yu et al, JCI 2023	Implication of ^{99m}Tc-sum IL-2 SPECT/CT in immunotherapy through imaging of tumor-infiltrating T cells	SumIL2-Fc in the article corresponds to MDNA109FA-Fc (a long-acting, “non-α” variant).
Bae, J et al., Nature Cell Biology 2022	IL-2 delivery by engineered mesenchymal stem cells reinvigorates CD8$^+$ T cells to overcome immunotherapy resistance in cancer	sIL-2 in the article corresponds to MDNA109FA-Fc (a long-acting, “non-α” variant).
Allen, GM et al., Science 2022	Synthetic cytokine circuits that drive T cells into immune-excluded tumors	sIL-2 in the article corresponds to MDNA109.
Brog, RA et al , Cancer Immunology Research 2022	Superkine IL-2– and IL-33–armoured CAR T cells reshape the tumor microenvironment and reduce the growth of multiple solid tumors	Super-2 in the article corresponds to 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 primates	MDNA11 in the article corresponds to MDNA109FEAA-Albumin (a long-acting, “non-α” 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 the article corresponds to MDNA109-MSA (a long-acting version fused to mouse serum albumin).
Hsu, EJ et. al., Nature 2021	A cytokine receptor-masked IL-2 prodrug selectively activates tumor-infiltrating lymphocytes for potent antitumor therapy	SumIL2-Fc in the article corresponds to MDNA109FA-Fc (a long-acting, “non-α” variant).
Quixabeira, D et al., Front. Immuno., 2021	Oncolytic adenovirus coding for a variant interleukin-2 (vIL-2) cytokine reprograms the tumor microenvironment and confers enhanced tumor control	vIL-2 in the article corresponds to MDNA109.
Sun, Z et. al., Nature 2019	A next-generation tumor-targeting IL-2 preferentially promotes tumor-infiltrating CD8$^+$ T-cell responses and effective tumor control	SumIL2-Fc in the article corresponds to MDNA109FA-Fc (a long-acting, “non-α” variant).
Ardolino, A et al., JCI 2015	Cytokine therapy reverses NK cell anergy in MHC-deficient tumors	H9 in the article corresponds to MDNA109.
Zitvogel, L and Kroemer, G, JCI 2014	Cytokines reinstate NK cell–mediated cancer immunosurveillance	H9 in the article corresponds to MDNA109.
Levin, AM et al., JCI 2012	Exploiting a natural conformational switch to engineer an interleukin-2 superkine	Super-2 and H9 in the article correspond to MDNA109.