MEDICENNA

TSX: MDNA OTCQX: MDNAF

Corporate Overview

October 2025

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Our Mission: To develop life-changing immunotherapies that transform people's lives and deliver the best possible patient outcomes

2025 – **Phase-3 Ready** program for glioblastoma
Phase 1/2 trial ongoing in end-stage cancers
PD-1 x IL-2 bi-specific advancing towards Phase 1 for cancer
Preclinical autoimmune/inflammatory disease programs

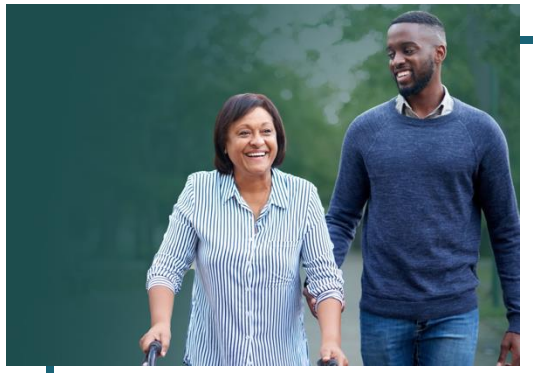
2024 – $20 Million Investment by **RA Capital**
(World's Largest Oncology Institutional Investor)

2022 – Clinical Collaboration with **Merck**

2017 – IPO **TSX: MDNA**

2016 – **Superkines** in-licensed and developed

Stanford MEDICINE



>100
Bizaxofusp
Patients treated to-date

>100
MDNA11
Patients treated to-date

Management Team and Advisors

Fahar Merchant PhD

President and CEO

A biotech veteran with 30 years of experience as a serial entrepreneur and co-founder of Medicenna

Previously elevated a pre-clinical start-up to Phase 3-ready uro-oncology status in six years, and has co-founded several other successful biotech companies

Arash Yavari MBBS DPhil

Director Of Clinical Strategy

20+ years of broad clinical, scientific, and industry drug development experience as a physician-scientist

Dr. Yavari is also a University Research Lecturer and Principal Investigator at the Radcliffe Department of Medicine, University of Oxford

John Sampson MD PhD MBA

Clinical Advisor

Professor of Neurosurgery at Duke University,
Senior Vice President at Duke University Health System

#1 in the world for Glioma Brain Cancer Immunotherapy Research in terms of # of publications and citations of his research

Paolo Ascierto MD

Chair of Clinical Advisory Board

A world leading expert and key opinion leader in Immunotherapy

Research focuses on immunotherapy, vaccination, and new molecular markers for tumor progression

David Hyman CA CBV

CFO

A Chartered Accountant and Business Valuator with 25+ years of financial experience spanning public practice, capital markets, and private equity.

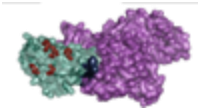
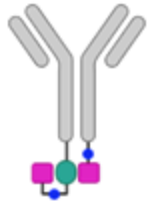
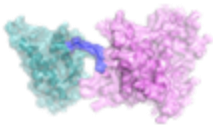
Mr. Hyman has been a CFO for several prior companies over the past decade, including multiple life sciences companies

Balanced Pipeline of Early, Mid-, & Late-stage Assets

Candidate	Indication	Discovery	Preclinical	Phase 1	Phase 2	Phase 3
MDNA11 IL-2 Super Agonist monotherapy	Various solid tumors	Key Data Readouts in H2 2025				
MDNA11 IL-2 Super Agonist KEYTRUDA® combo	Various solid tumors	Key Data Readouts in H2 2025				
MDNA113 Anti PD-1-IL-2 Masked BiSKIT	Various solid tumors expressing IL-13Rα2	IND-Enabling Ready				
MDNA209 IL-2/15 Pathway Super Antagonist	Autoimmune diseases	Select Lead				
MDNA413 IL-4/13 Pathway Super Antagonist	Inflammatory diseases	Select Lead				
Partnering Asset						
Bizaxofusp (MDNA55) IL-4–Toxin Fusion	Recurrent glioblastoma (rGBM)	Partner Phase 3 Ready Asset				

MERCK
Clinical Collaboration

Clinical-Stage Immunotherapy Company Focused on **Evolutionary Superkines** to Develop **Revolutionary Medicines** for **Patients with Unmet Needs**

Programs			Planned Milestones for H2 2025
MDNA11 	***Best-in-class IL-2 Superkine*** **The only non-α, β-enhanced long-acting** IL-2 super agonist	**30-50% ORR** in checkpoint resistant cancers (P1/2 ABILITY-1 Trial)	➢ Complete ABILITY-1 Enrollment ➢ Monotherapy Expansion Data ➢ Top-Line Combo Data w/ KEYTRUDA®
MDNA113 	***Targeted aPD1 Bispecific*** **The only tumor-activated antiPD-1 x IL-2 bispecific** targeting IL-13Rα2 cancers	**Preclinical PoC** Promising efficacy with wide therapeutic window	➢ Non-human primate testing underway to support IND enabling studies
Bizaxofusp 	***First-in-Class IL-4R Targeted Therapy*** Delivers potent payload **treating deadliest form of brain cancer, rGBM**	**Doubling Survival** median OS ~14 months versus ~7 months for matched control	➢ Pursue partnerships to commence P3 trial in 2026

MDNA11

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

This study is in collaboration with Merck Sharp & Dohme LLC, a subsidiary of Merck & Co., Inc., Rahway, NJ, USA.

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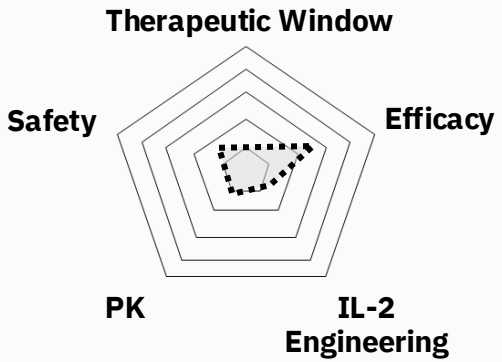
Biology-driven Evolution of IL-2 Therapies

Wild-type IL-2

1998

PROLEUKIN® For injection (aldesleukin) Recombinant IL-2

- First approved IO drug for RCC and melanoma
- Limited clinical utility because of short half-life, toxicity



2nd Generation IL-2

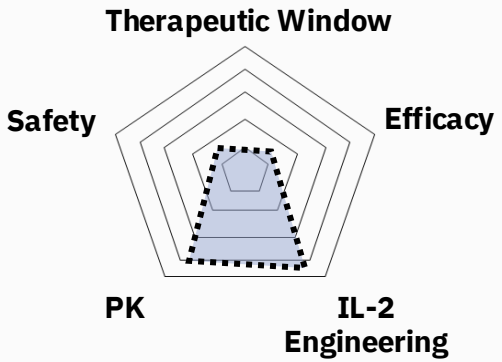
2015 2018 2020

Roche | Bristol Myers Squibb™ | sanofi

$3.6B Licensing Deal

$2.5B Acquisition

- Failed programs, due to poor PK/PD profiles, toxicity or lack of efficacy with PEGylation reducing potency



Next-Generation IL-2

Present

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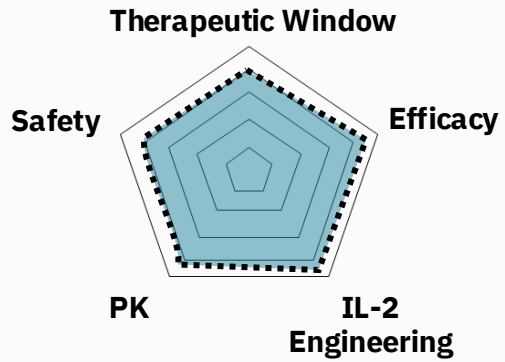
- MDNA11 continues to demonstrate best-in-class potential with durable single agent activity
- 30-50% ORR in checkpoint resistant melanoma, MSI-H, TMB-H cancers with potential for accelerated approval based on un-met need



Significant Commercial Opportunity for MDNA11

Anti-PD-1 Inhibitor

MERCK — KEYTRUDA® (pembrolizumab)

~16% of Tumors Shrink in End-Stage Patients[1]

US $29.5B Revenue
(Worlds Best Selling Drug)

Merck Financial Reports
FY 2024

2028 Patent Expiry

Anti-PD-1 Inhibitor + Anti-CTLA-4

Bristol Myers Squibb™ — OPDIVO® (nivolumab) — YERVOY® (ipilimumab)

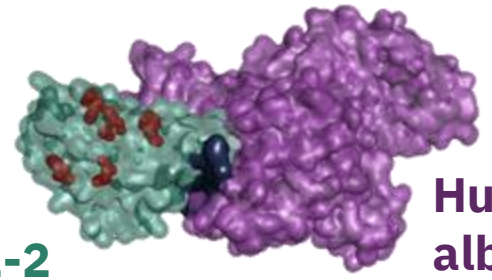
~20% of Tumors Shrink in End-Stage Patients[1]

US $9.3B Revenue– OPDIVO®
US $2.5B Revenue – YERVOY®

BMS Financial Reports
FY 2024

2028 Patent Expiry

MDNA11



IL-2 superkine

Human albumin

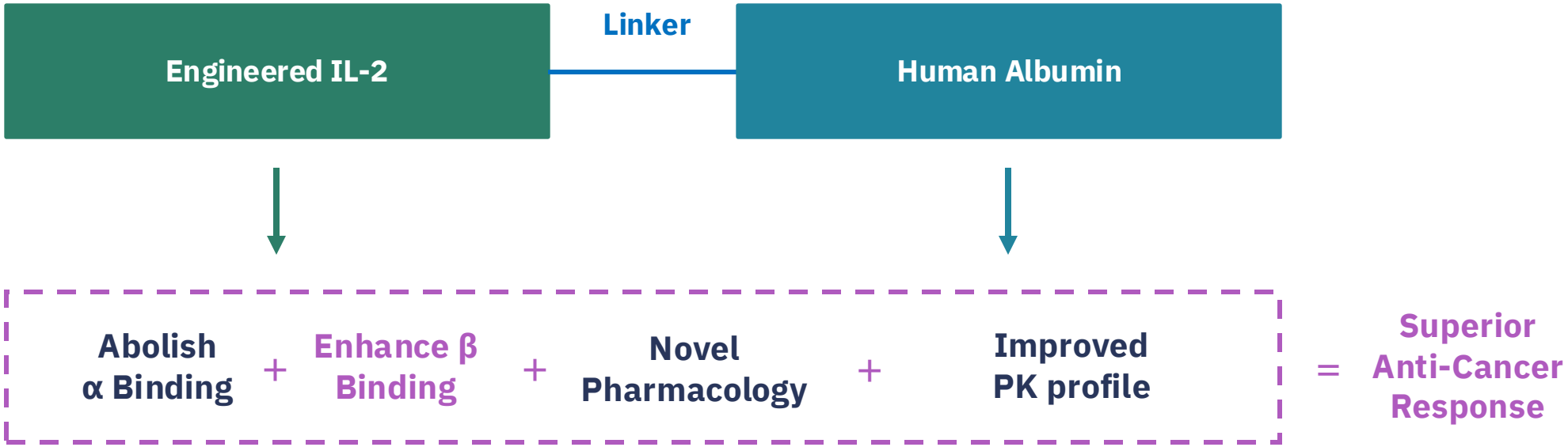
~30-50% of Tumors Shrunk in End-Stage Patients

On-going ABILITY-1 Phase 1/2 trial

[1]Chen S et al. *Response Efficacy of PD-1 and PD-L1 Inhibitors in Clinical Trials: A Systematic Review and Meta-Analysis.* Front Oncol 2021.

MDNA11: Novel ‘beta-enhanced not-alpha’ pharmacology

Superior selectivity and anti-cancer response with enhanced ‘β-only’ binding



- ↓ Tregs
- ↑ Safety

- ↑ Effector Cell Activation
- ↑ T Cell Memory Response
- ↑ Effective Against MHC I–Deficient Tumors
- ↓ NK Cell Exhaustion

- ↑ Half-Life
- ↑ Tumor Accumulation
- ↑ Localization in Tumor Draining Lymph Nodes

Clinical Updates From Phase 1/2 ABILITY-1 Trial: MDNA11 Monotherapy

First-in-Human Trial of MDNA11 in Patients with Advanced/Metastatic End-stage Cancers

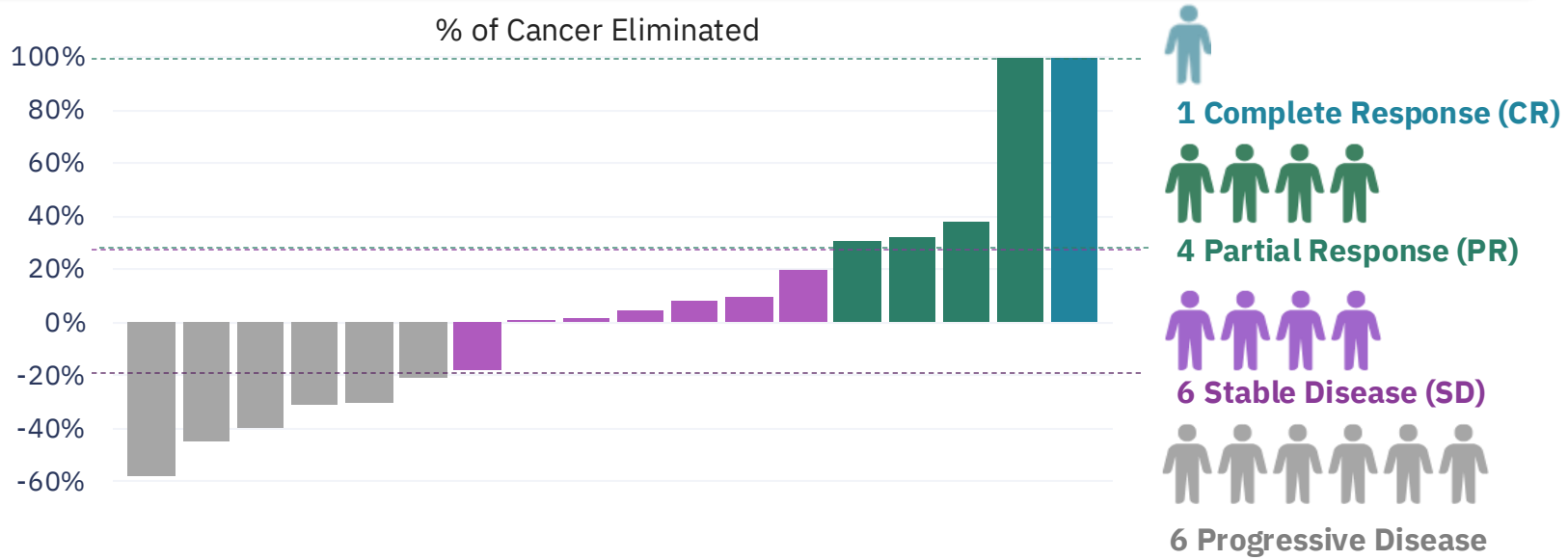
17 Phase 2-Eligible End-Stage Cancer Patients

30%

Tumors Shrunk in End-Stage Patients Across All Tumor Cohorts

Pancreatic Patient:
Cancer Free > 1 Year Post-Treatment

Melanoma Patient:
Cancer Free > 10 months Post-Treatment



Desirable Safety Profile

>90% Grade 1-2 Treatable Reversible Events

No reported dose-limiting toxicity
Well-Tolerated

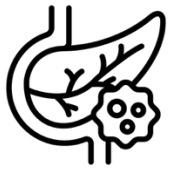
Durable Tumor Shrinkage

Deep, Durable Responses not seen before with IL-2 therapies

Pancreatic cancer (MSI-H), Endometrial Cancer, Colorectal Cancer

Caring for Patients & Creating Value for Shareholders

MDNA11 has potential to address devastating cancers with significant commercial opportunities

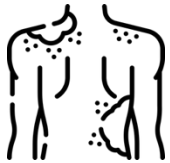


Pancreatic Cancers

2 out of 2 patients with MSI-H PDAC responded to treatment

Endometrial Cancers

When MDNA11 was combined with Merck's KEYTRUDA® 2 out of 4 patients responded to treatment



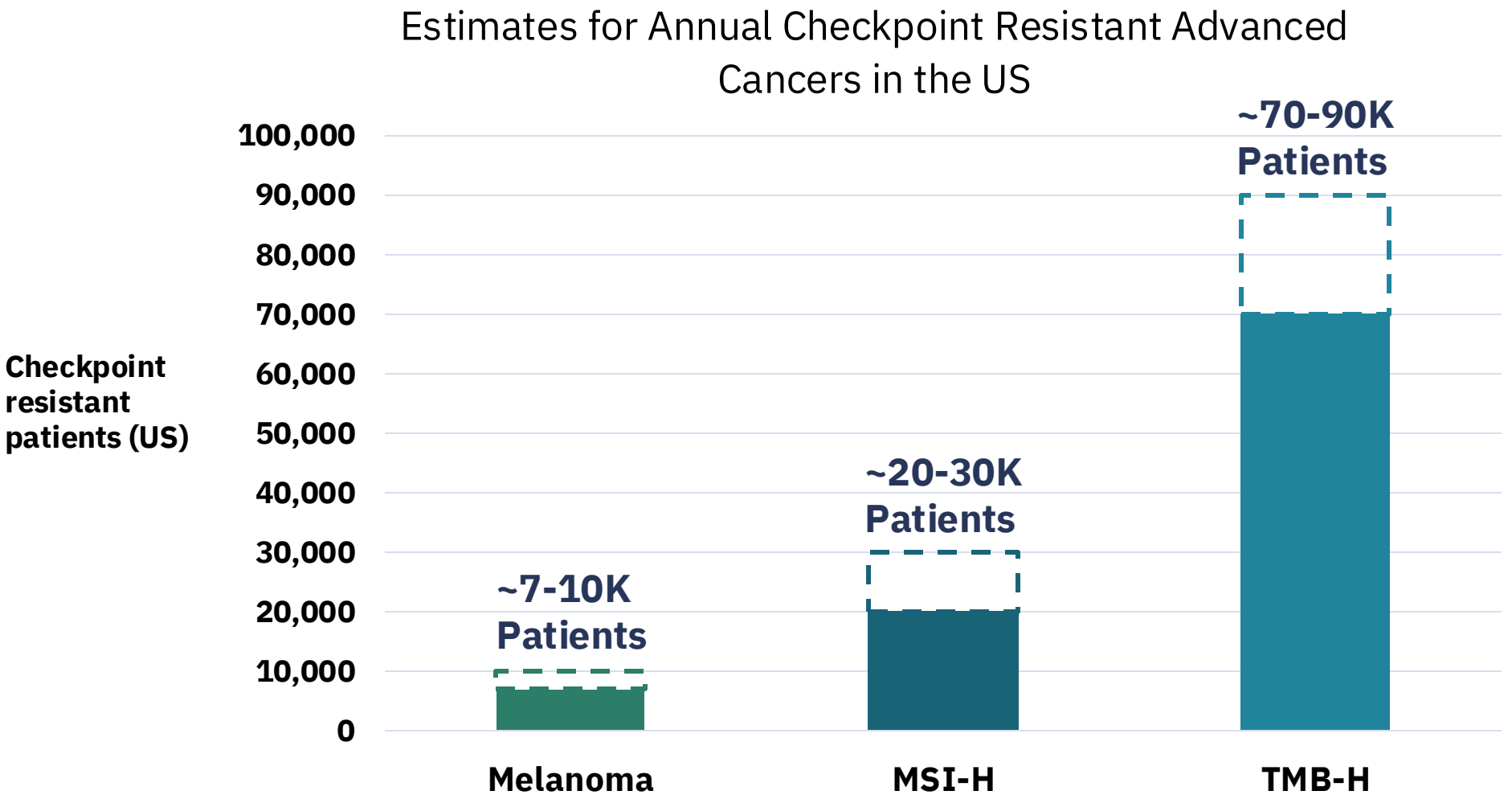
Melanoma Cancers

2 out of 6 patients with 2° ICI resistant, responded to MDNA11 treatment

	Market Cap (in USD)	Melanoma Response Rate
MEDICENNA	~$60M	~30%
Replimune	~$800M	~30%
IOVANCE BIOTHERAPEUTICS	~$800M	~30%

Relative Comps Demonstrate Valuation Potential in Melanoma Alone

Addressable Markets in Checkpoint-Resistant MSI-H, TMB-H and Melanoma Cancers



Future MDNA11 Development Potential

MDNA11 has the potential to expand into additional tumor types where PD-(L)1 is approved

Additional tumor types with US revenue > $30B (in 2024)

Source: SEER; American Cancer Society; Marcus L et al. Clin Cancer Res 2021; Jung J et al. J Immunother Cancer 2023; Wang R et al. Biomol Biomed 2023; Nayan L et al. JAMA 2022; Serra-Bellver P et al. EJ Cancer 2022.

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Lead Pre-clinical Program

PD-1 x IL-2 Bi-specific Molecule

First-in-Class Potential with Novel IL-13 Targeted and Conditionally activated Bifunctional Approach

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Commercial Interest in anti-PD1 Bi-specifics is Accelerating

Big Pharma is Facing a Patent Cliff for Checkpoint Inhibitors

	MERCK	Bristol Myers Squibb	REGENERON	Roche	AstraZeneca	MERCK
Approved CPI	Keytruda	Opdivo	Libtayo	Tecentriq	Imfinzi	Bavencio
Peak Sales / LoE[1]	**$30B** / 2028	**$12B** / 2028	TBD / 2035	**$6B** / 2030	**$7B** / 2031	TBD / 2036

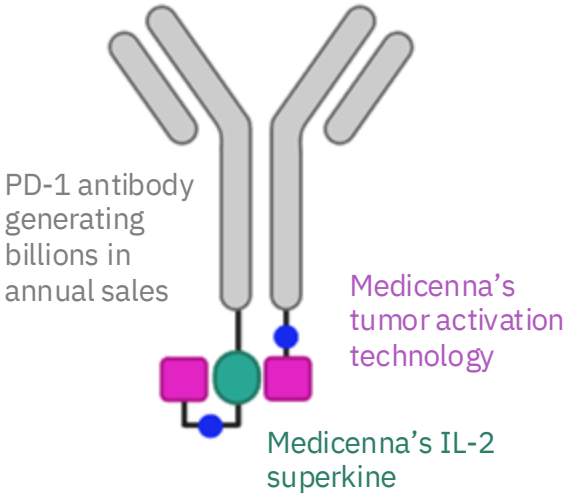
Anti-PD1 Bi-specifics are Gaining Significant Interest

$500M upfront, up to $5B	*$588M upfront, up to $2.7B*	*$1.5B upfront, up to $11B*	*$1.25B upfront, up to $6B*
Summit therapeutics	MERCK	BIONTECH	Pfizer
Akesobio	礼新医药 LaNova Medicines	Bristol Myers Squibb	三生制药 3SBIO INC.

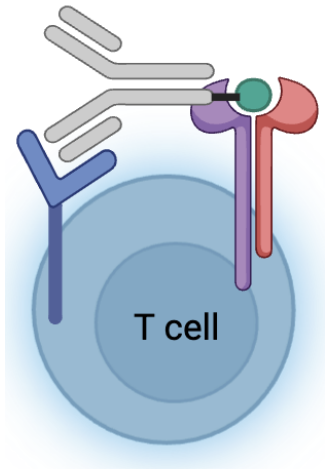
[1] Loss of exclusivity

MDNA113 – Precision Immunotherapy at its Finest

MDNA113



Dual Activation of Cancer Fighting Immune Cells



Blockbuster potential

MDNA113 is a novel, first-in-class tumor-targeted and conditionally activated bi-functional **anti-PD1-IL-2** Superkine

IL-13Rα2 is expressed in many cold tumors, affecting over

2 million patients annually

Key Features:
- Enhanced Tolerability
- Synergistic Immune Activation
- Durable Tumor Localization

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

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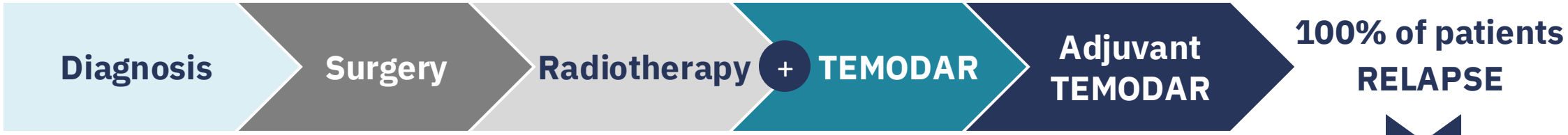
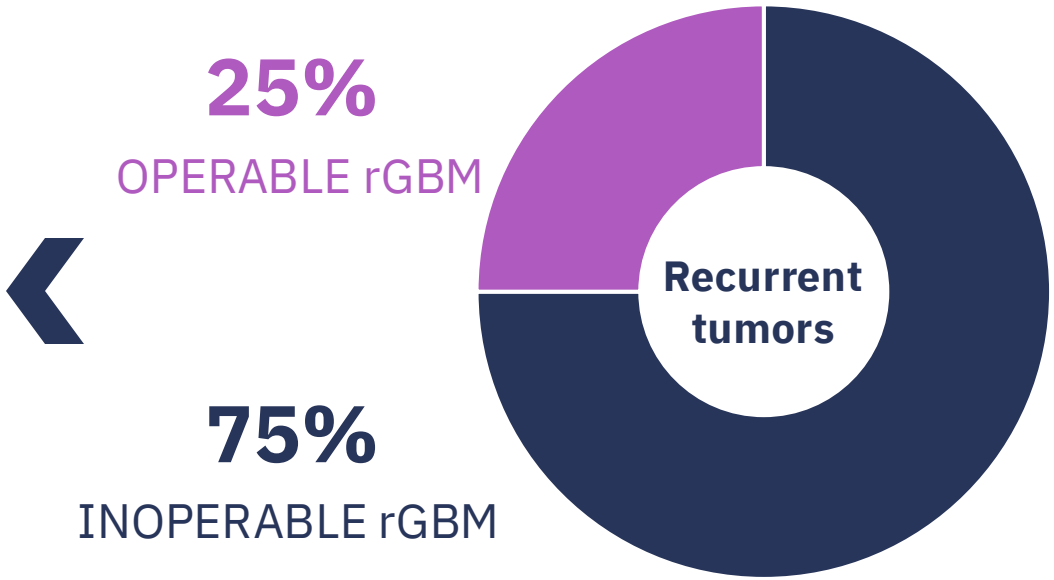
Treatment Paradigm for GBM has NOT Changed in Decades



85-90% of patients

55% of GBM Temodar-Resistant*

1. GBM is uniformly fatal
2. Recurrent tumors are less accessible surgically
3. No defined rGBM standard of care
4. Median overall survival (mOS) with approved therapies** is 6-9 months
5. 2-year survival for rGBM is 5-10%

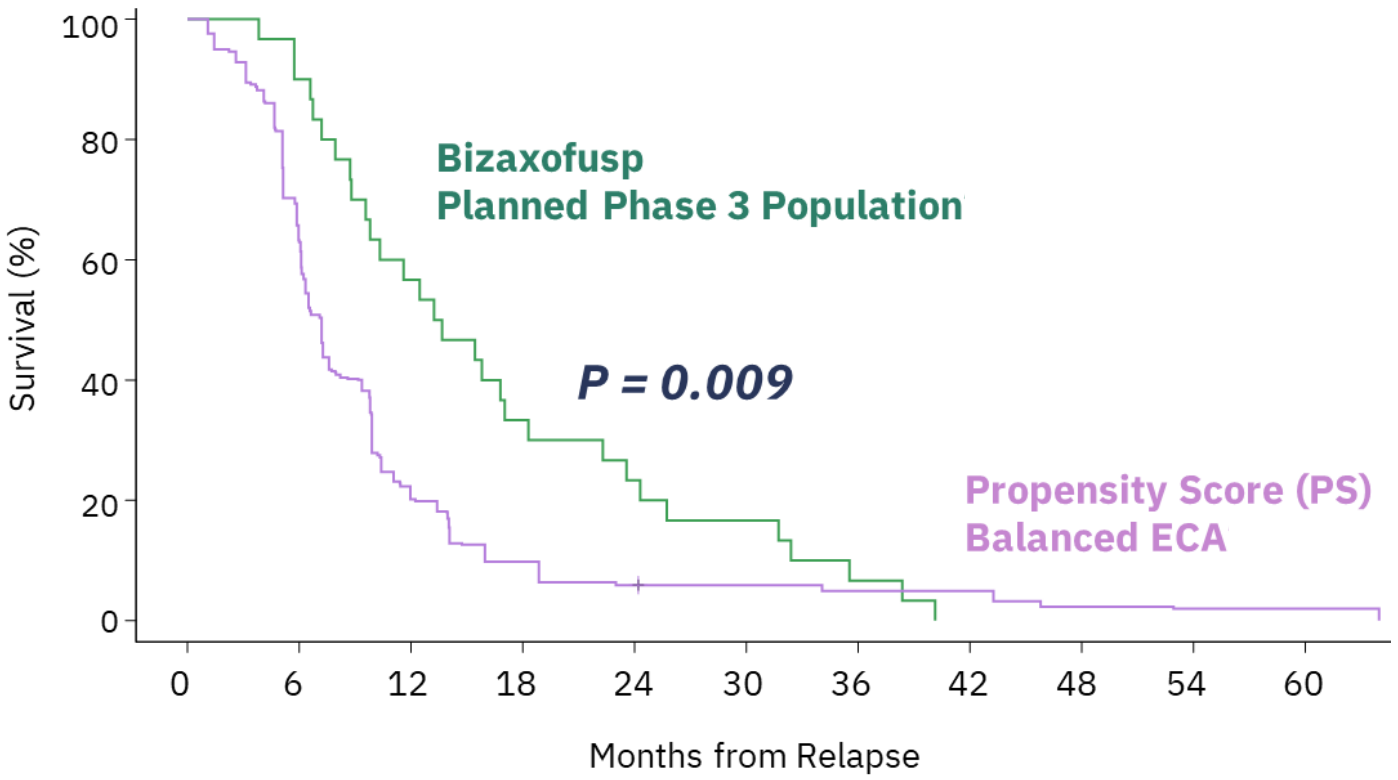


* Expression of the DNA repair protein O6-methylguanine-DNA methyltransferase (MGMT) is responsible for resistance to Temodar

** Avastin, Lomustine, Gliadel, Optune,Temodar, Radiotherapy

Single Treatment **Doubled Median Overall Survival (OS)**

OS increased by 180% at 12 months and 290% at 24 months when compared to an external control arm (ECA)



	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)**	

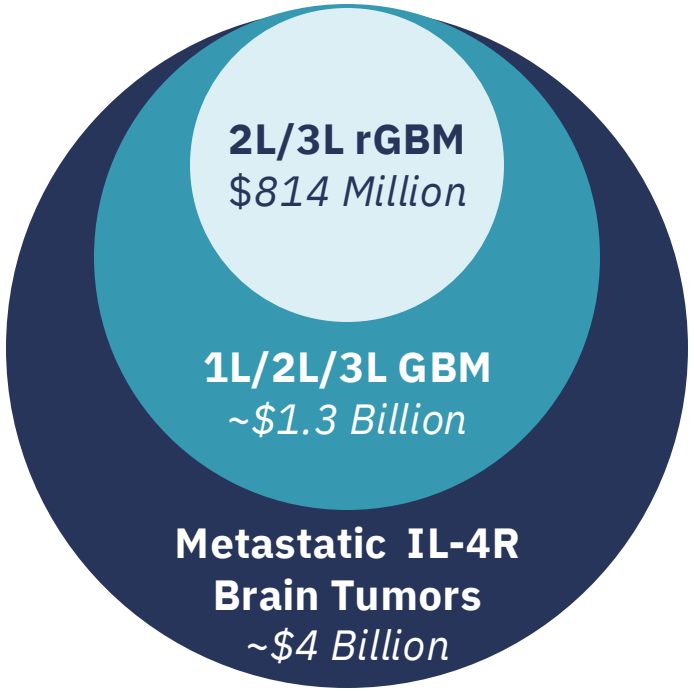
*Log-rank test

Patients enrolled in the external control arm (ECA) met same eligibility criteria as Phase 2b and were then matched using propensity score balancing

ECA, external control arm | PS, propensity score

Bizaxofusp has $1.3B Sales Potential if Approved for GBM, up to $4B if Approved 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)

IL4R Overexpressing **Metastatic Brain Tumors**

Additional **IL4R Positive Cancers**

- **Renal Cancer** ~6,000
- **Breast Cancer** ~47,000
- **Colon Cancer** ~23,000
- **60% Ovarian** ~21,500
- **73% Bladder** ~85,000
- **96% Mesothelioma** ~3,000

[1] Source: Triangle Insights Group

Financials & Catalysts

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Stock and Financial Information

Balance sheet provides cash runway through mid calendar 2026

Capitalization Summary

TSX | OTCQX	MDNA | MDNAF
Headquarters	Toronto, CA
Market Capitalization	$80M CAD[3]
Cash	$21M CAD[1,2]
Debt	$0
Basic SO	~83 Million[1,2]
Fully Diluted SO	~105 Million[1,2]
Insider Ownership	~22%[1,2]

[1] As of 6/30/2025 – *See Company's Q1 F2026 Financial Results and MD&A*
[2] Includes $20M private placement by RA which includes ~5M common shares and ~5M pre-funded warrantsCapital,
[3] As of market close August 8th, 2025

Analyst Coverage

Bloom Burton & Co.
David Martin PhD, MBA

Jones Research
Catherine Novack MS

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

Research Capital
Andre Uddin PhD

Lucid Capital
Dev Prasad PhD, MBA

Advancing Superkines with First and Best-in-Class Potential

- **IL-2 Superagonist: Phase 1/2 Underway with Promising Data in Difficult-to-Treat Tumors**
- **Superkine Platform Driving Robust and Balanced Pipeline in Deal Heavy Indications**
- **First-in-Class IL-4 Superkine: Phase 3-Ready for Recurrent Glioblastoma**
- **Healthy Balance Sheet With Runway Through At Least Mid-2026**

Upcoming Catalysts

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Monotherapy Expansion Data (H2/25)

Complete ABILITY-1 Enrollment (H2/25)

Top-Line Combo Expansion Data (H2/25)

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Readiness for IND Enabling Studies

Bizaxofusp

Pursue Partnership for Phase 3 Trial

Thank You

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