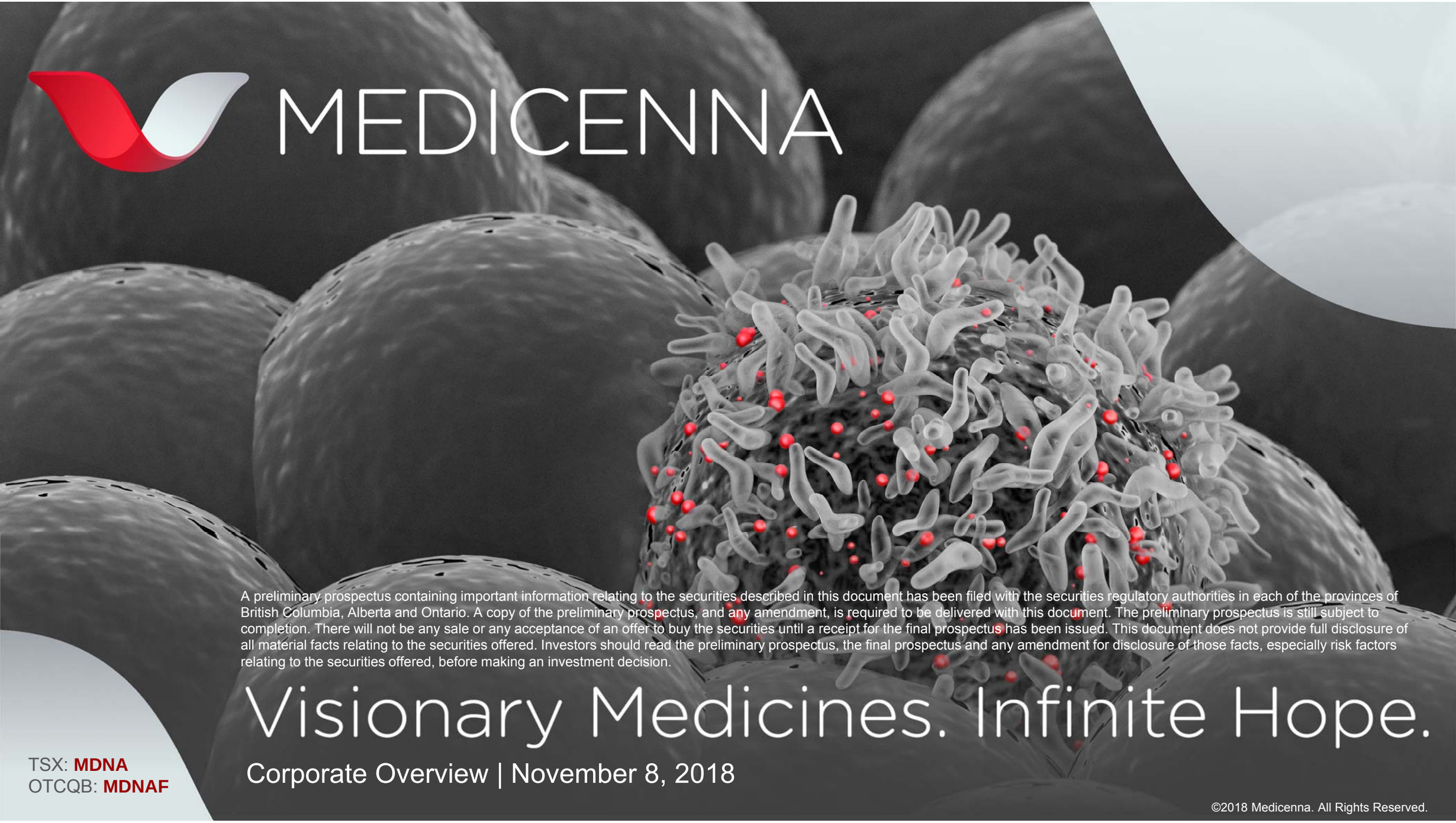

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A preliminary prospectus containing important information relating to the securities described in this document has been filed with the securities regulatory authorities in each of the provinces of British Columbia, Alberta and Ontario. A copy of the preliminary prospectus, and any amendment, is required to be delivered with this document. The preliminary prospectus is still subject to completion. There will not be any sale or any acceptance of an offer to buy the securities until a receipt for the final prospectus has been issued. This document does not provide full disclosure of all material facts relating to the securities offered. Investors should read the preliminary prospectus, the final prospectus and any amendment for disclosure of those facts, especially risk factors relating to the securities offered, before making an investment decision.

Visionary Medicines. Infinite Hope.

TSX: **MDNA**
OTCQB: **MDNAF**

Corporate Overview | November 8, 2018

Disclaimer

General

Prospective investors should rely only on the information contained in the preliminary prospectus (the "prospectus") of Medicenna Therapeutics Inc. (the "Company", "Medicenna", "us", "we" or "our"). This presentation is qualified in its entirety by reference to, and must be read in conjunction with, the information contained in the prospectus. A prospective investor is not entitled to rely on parts of the information contained in this presentation to the exclusion of others. Neither Medicenna nor Bloom Burton Securities Inc., for and on behalf of itself, Mackie Research Capital Corporation and Richardson GMP Limited (collectively, the "Agents") have authorized anyone to provide prospective investors with additional or different information. Neither Medicenna nor the Agents are offering to sell securities of Medicenna where the offer or sale of such securities is not permitted.

THIS DOCUMENT IS BEING FURNISHED SOLELY IN RELIANCE ON APPLICABLE EXEMPTIONS FROM THE REGISTRATION REQUIREMENTS UNDER THE U.S. SECURITIES ACT OF 1933, AS AMENDED. THE SECURITIES OF MEDICENNA HAVE NOT AND WILL NOT BE REGISTERED UNDER THE U.S. SECURITIES ACT OR ANY STATES SECURITIES LAWS, AND MAY NOT BE OFFERED OR SOLD WITHIN THE UNITED STATES, OR TO OR FOR THE ACCOUNT OR BENEFIT OF U.S. PERSONS, UNLESS AN EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THE U.S. SECURITIES ACT IS AVAILABLE. ACCORDINGLY, ANY OFFER OR SALE OF SECURITIES WILL ONLY BE OFFERED OR SOLD (I) WITHIN THE UNITED STATES, OR TO OR FOR THE ACCOUNT OF U.S. PERSONS AND ONLY IN RELIANCE UPON APPLICABLE EXEMPTION UNDER THE U.S. SECURITIES ACT AND (II) OUTSIDE THE UNITED STATES IN OFFSHORE TRANSACTIONS IN ACCORDANCE WITH REGULATION S UNDER THE U.S. SECURITIES ACT.

An investment in our securities is subject to a number of risks that should be considered by a prospective purchaser. Prospective purchasers should carefully consider the risk factors described under "Risk Factors" in the prospectus before purchasing our securities.

In this presentation, all amounts are in Canadian dollars, unless otherwise indicated. Any graphs, tables or other information in this presentation demonstrating the historical performance of Medicenna are intended only to illustrate past performance and are not necessarily indicative of future performance of Medicenna.

Forward-Looking Statements

Certain statements in this presentation are "forward-looking statements". Any statements that express or involve discussions with respect to predictions, expectations, beliefs, plans, projections, objectives, assumptions or future events or performance (often, but not always using words or phrases such as "expect", "seek", "endeavour", "anticipate", "plan", "estimate", "believe", "intend", or stating that certain actions, events or results may, could, would, might or will occur or be taken, or achieved) are not statements of historical fact and may be "forward-looking statements".

Forward-looking statements are based on expectations, estimates and projections at the time the statements are made that involve a number of risks and uncertainties which would cause actual results or events to differ materially from those presently anticipated. Forward-looking statements are based on expectations, estimates and projections at the time the statements are made and involve significant known and unknown risks, uncertainties and assumptions. A number of factors could cause actual results, performance or achievements to be materially different from any future results, performance or achievements that may be expressed or implied by such forward-looking statements. These include, but are not limited to, the risk factors discussed under the heading "Risk Factors" in the prospectus. Should one or more of these risks or uncertainties materialize, or should assumptions underlying the forward-looking statements prove incorrect, actual results, performance or achievements could vary materially from those expressed or implied by the forward-looking statements contained in this document. These factors should be considered carefully and prospective investors should not place undue reliance on these forward-looking statements.

Although the forward-looking statements contained in this document are based upon what Medicenna currently believes to be reasonable assumptions, Medicenna cannot assure prospective investors that actual results, performance or achievements will be consistent with these forward-looking statements. Except as required by law, Medicenna does not have any obligation to advise any person if it becomes aware of any inaccuracy in or omission from any forward-looking statement, nor does it intend, or assume any obligation, to update or revise these forward-looking statements to reflect new events or circumstances.

See "Forward-Looking Statements" and "Risk Factors" in the prospectus for more details.

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Visionary Medicines.

MDNA55 — LEAD PROGRAM		SUPERKINE PLATFORM	MDNA109
COMPELLING DATA Phase 1/2 data in rGBM with MDNA55	**ORPHAN/ FAST TRACK** Orphan Drug (FDA, EMA) Fast Track (FDA)	**IL-2; IL-4; IL-13** Tunable cytokines	**IL-2 SUPER-AGONIST**
PHASE 2 CLINICAL TRIAL UNDERWAY At 10 sites in the US including Centers of Excellence	**4,000** Brain tumor patients can be treated with 1 gram of MDNA55[4]	**GROWING PIPELINE** Oncology, autoimmune and inflammatory	**HIGH CD122 SELECTIVITY**
250,000 Annual incidence of glioblastoma and metastatic brain cancer[2]	**2 BILLION** Potential market of MDNA55 market for brain cancer ($US)[1,3]	**VALIDATED TARGETS** Industry transactions support further development	**TUNABLE PK** Fc and Albumin Fusions

Infinite Hope.

1. BioXcel Strategic Analysis Report, 2014.
2. Globocan 2012: Estimated Cancer Incidence, Mortality and Prevalence Worldwide 2012.
3. Decision Resources, Inc Glioblastoma Report, Sept 2013.
4. 240 micrograms per treatment, 1 milligram will treat 4 patients and 1 gram will treat 4000 patients

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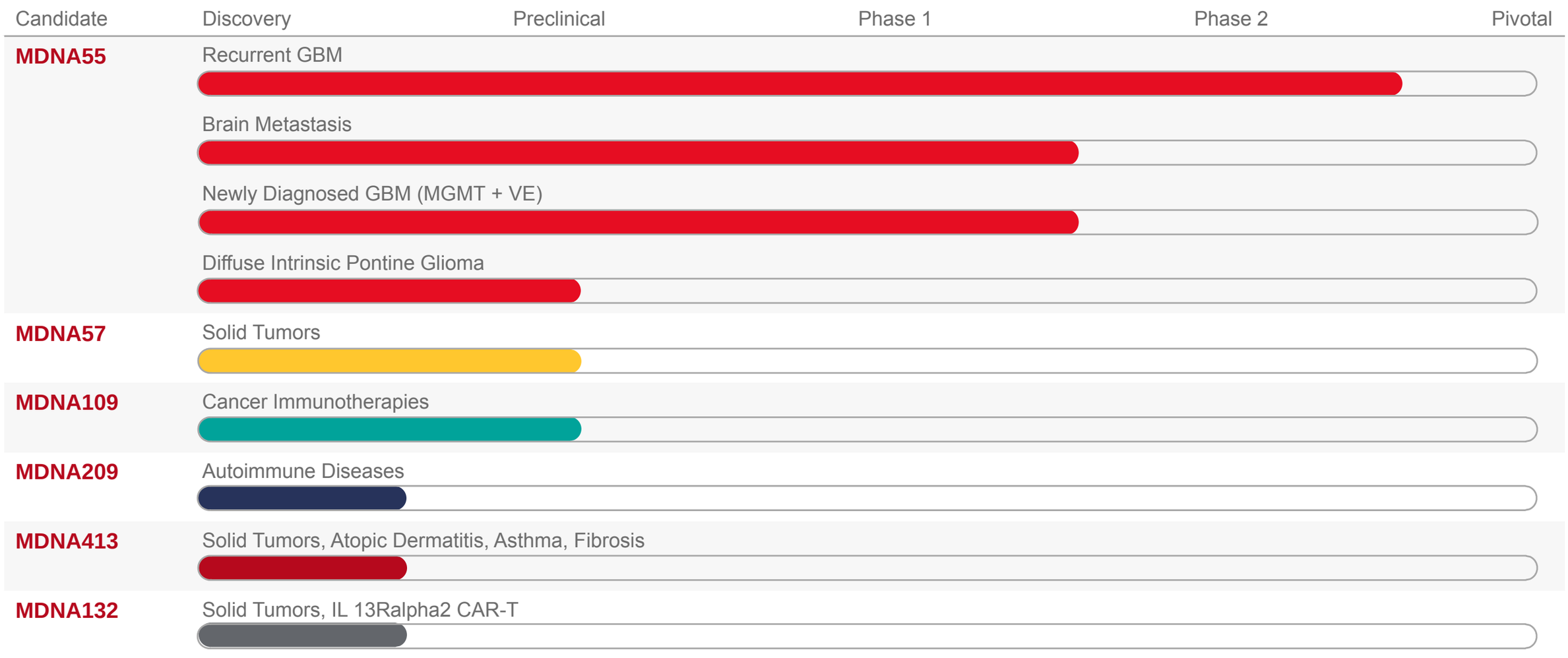
Robust Oncology and Immunotherapy Pipeline



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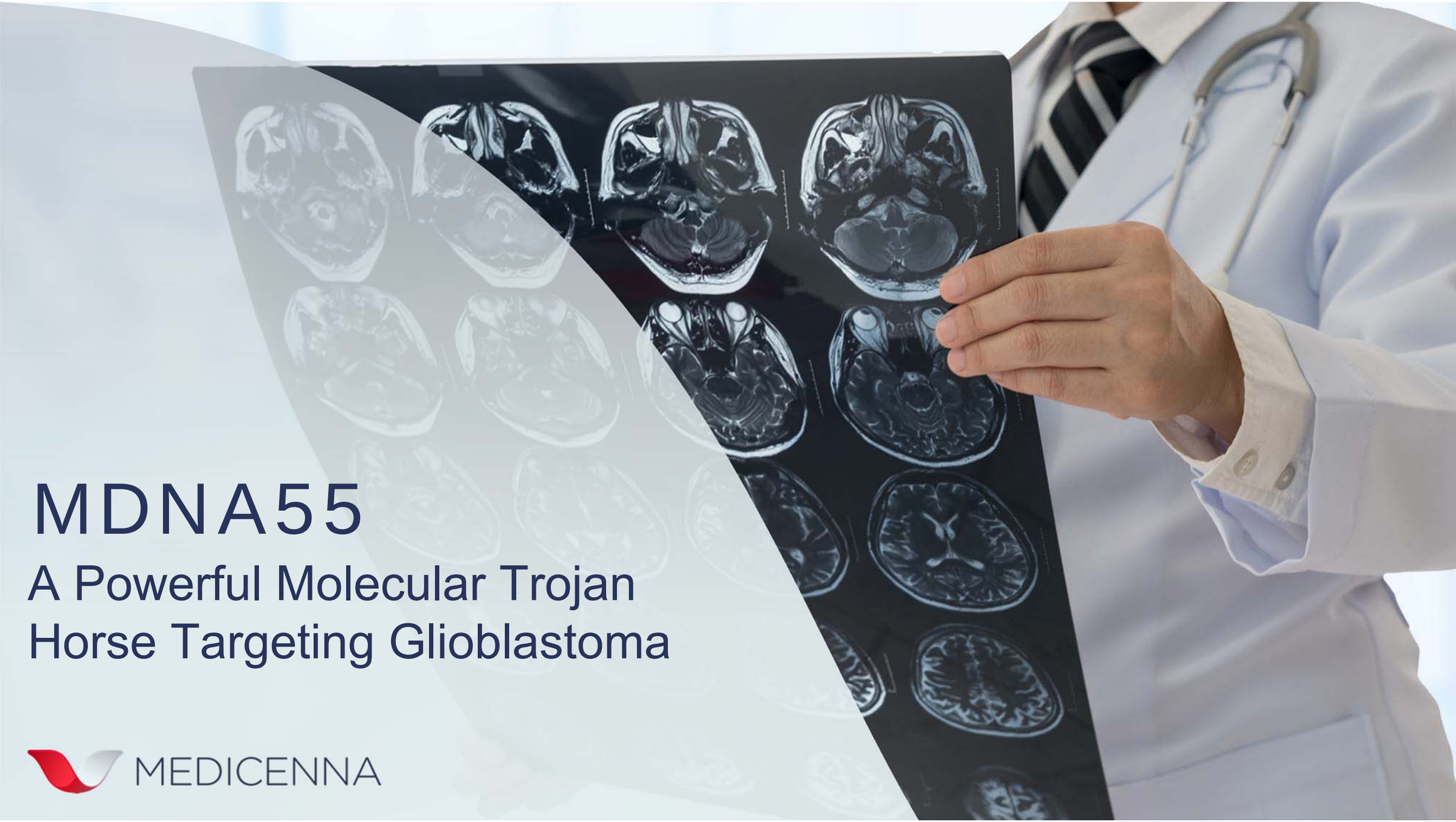

MDNA55

A Powerful Molecular Trojan Horse Targeting Glioblastoma

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Treatment Pathway for Glioblastoma (GBM)

GBM IS UNIFORMLY FATAL – VIRTUALLY ALL TUMORS WILL RECUR (rGBM)

DIAGNOSIS

SURGERY

(85-90%)

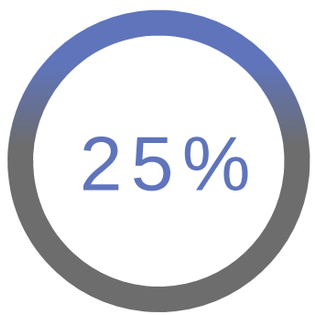
RADIOTHERAPY + **CHEMOTHERAPY**

55% of GBM Chemo-Resistant*

ADJUVANT CHEMO

RELAPSE

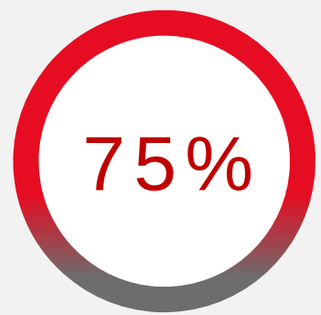
STANDARD OF CARE FOR PATIENTS WITH GBM



OPERABLE rGBM

MDNA55 Treatment

Direct infusion into tumor *convection enhanced delivery (CED)*



INOPERABLE rGBM

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* Expression of the DNA repair protein O6-methylguanine-DNA methyltransferase (MGMT) is responsible for resistance to alkylating agents used in GBM treatment.

MDNA55: Targeted Dual-Action Immunotherapeutic

A POWERFUL MOLECULAR TROJAN HORSE

Tumor Targeting Domain
Circularly Permuted Interleukin-4 (cpIL-4)

Tumor Killing "Cytotoxic" Domain
Catalytic domain of *Pseudomonas* Exotoxin A (PE)

Proven payload efficacy - identical to Medimmune's anti-CD22 immunotoxin, Moxetumomab Pasudotox, FDA approved for Hairy Cell Leukemia

Potently toxic to tumor cells with a wide therapeutic window

Bypass the blood brain barrier through localized convection enhanced delivery (CED)

Simultaneously purges the tumor microenvironment (TME) and un-blinds the immune system to cancer cells

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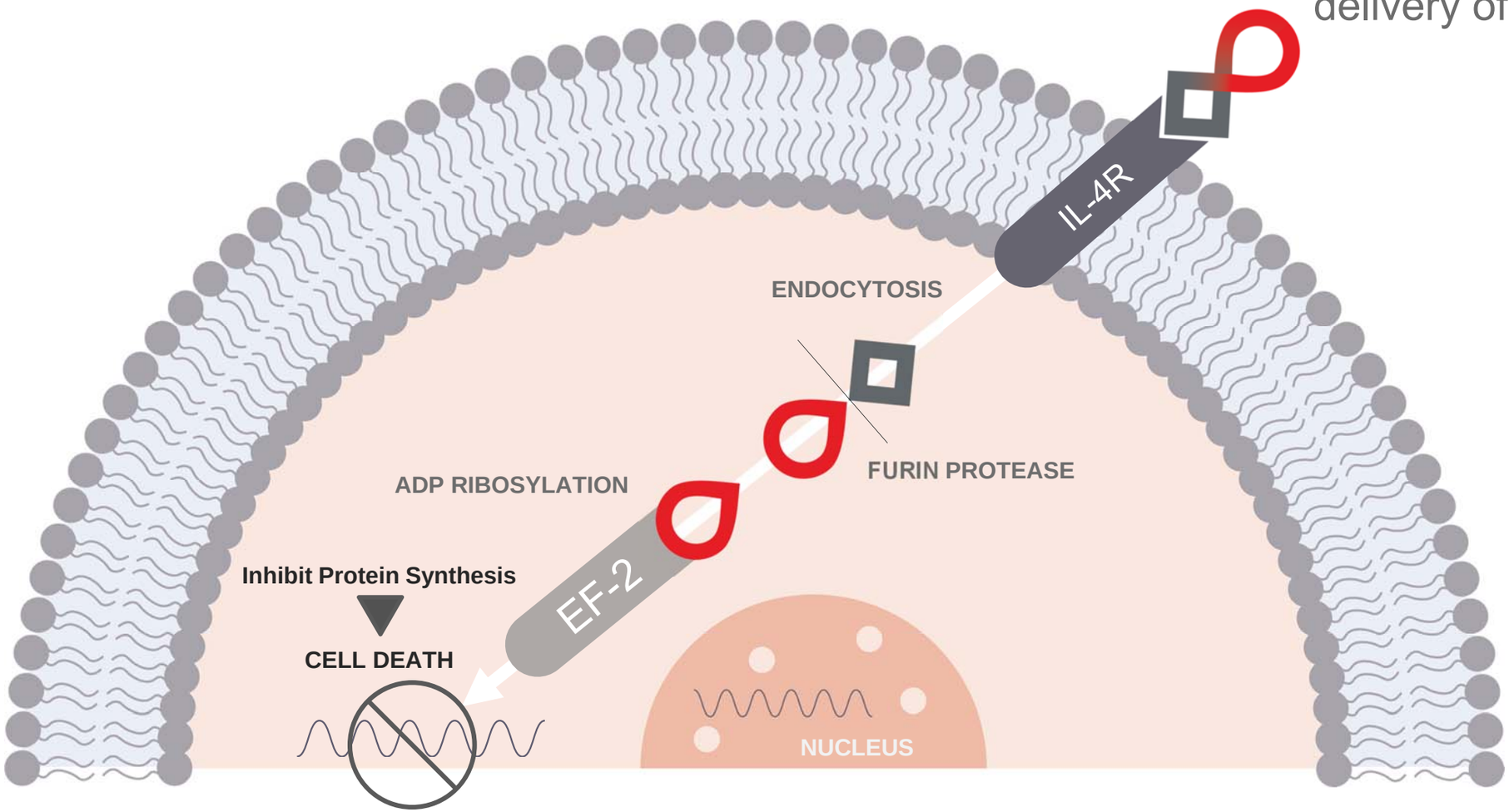
Mechanism of Action of MDNA55

Efficient intracellular delivery of toxin payload



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MDNA55: Clinical Study Summary

72 Patients Treated in Previous Studies

STUDY	PATIENT	DOSE(µg)
Investigator Initiated (U.S.)	Recurrent GBM (n=9)	6–720
Multi-Center (U.S./Germany) Phase 1/2	Recurrent HGG No-Resection (n=25 GBM+6 AA)	240–900
Multi-Center (U.S./Germany) Phase 1/2	Recurrent GBM + Resection (n=32)	90–300

Consolidated Safety Profile

- No deaths attributed to MDNA55
- No systemic toxicity at any dose
- No clinically significant laboratory abnormalities
- Most adverse events were due to local effects and similar to those typically seen in this patient population
- Manageable inflammation and edema associated with tumor cell death
- MTD established at 240 µg

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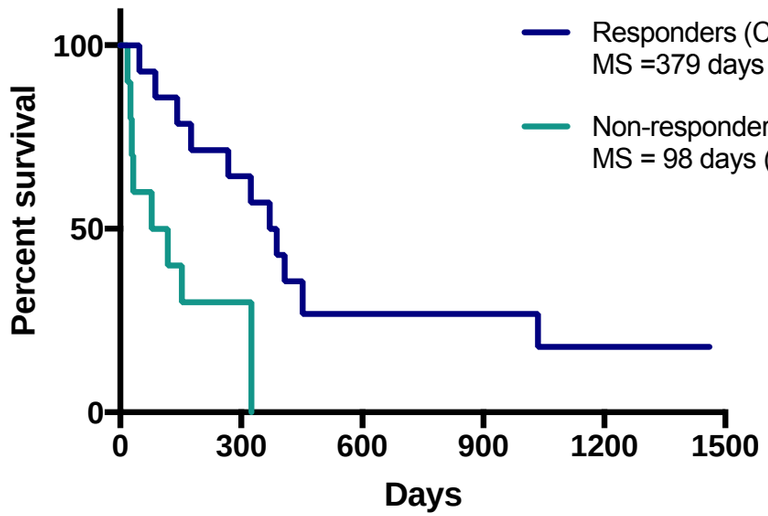
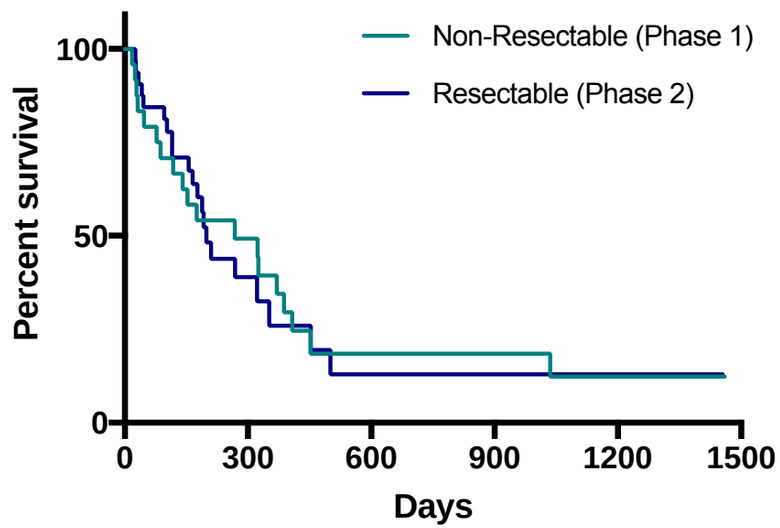
MDNA55 Survival Results at High Dose Consistent with Immunotherapy Benefits

Non-Resectable Recurrent GBM: Survival of Responders vs Non Responders



SD – Stable disease
PD – Progressive disease
Investigators Brochure (page 82)

MDNA55 Overall Survival



Log-Rank test p-value is 0.9430 (N=57)

Phase 2b Study Design Summary

Open-Label Single Arm Study in 52 Patients – Delivery Optimization Phase Followed by High Dose Efficacy Phase




DIAGNOSIS	PLANNING	TREATMENT	FOLLOW UP
• Retrospective IL4R expression analysis • GBM at 1st or 2nd relapse • KPS ≥ 70	• MRI — tumor size and location • Optimal catheter trajectory	• Image-guided catheter placement • Real-time monitoring of MDNA55 distribution	• Patient safety • Survival • Quality of life • Tumor response

PRIMARY OBJECTIVE
ORR (N=25)

SECONDARY OBJECTIVES
ORR (N=52) | MOS | Safety | PFS-6

TERTIARY OBJECTIVES
Correlate IL4R expression with efficacy

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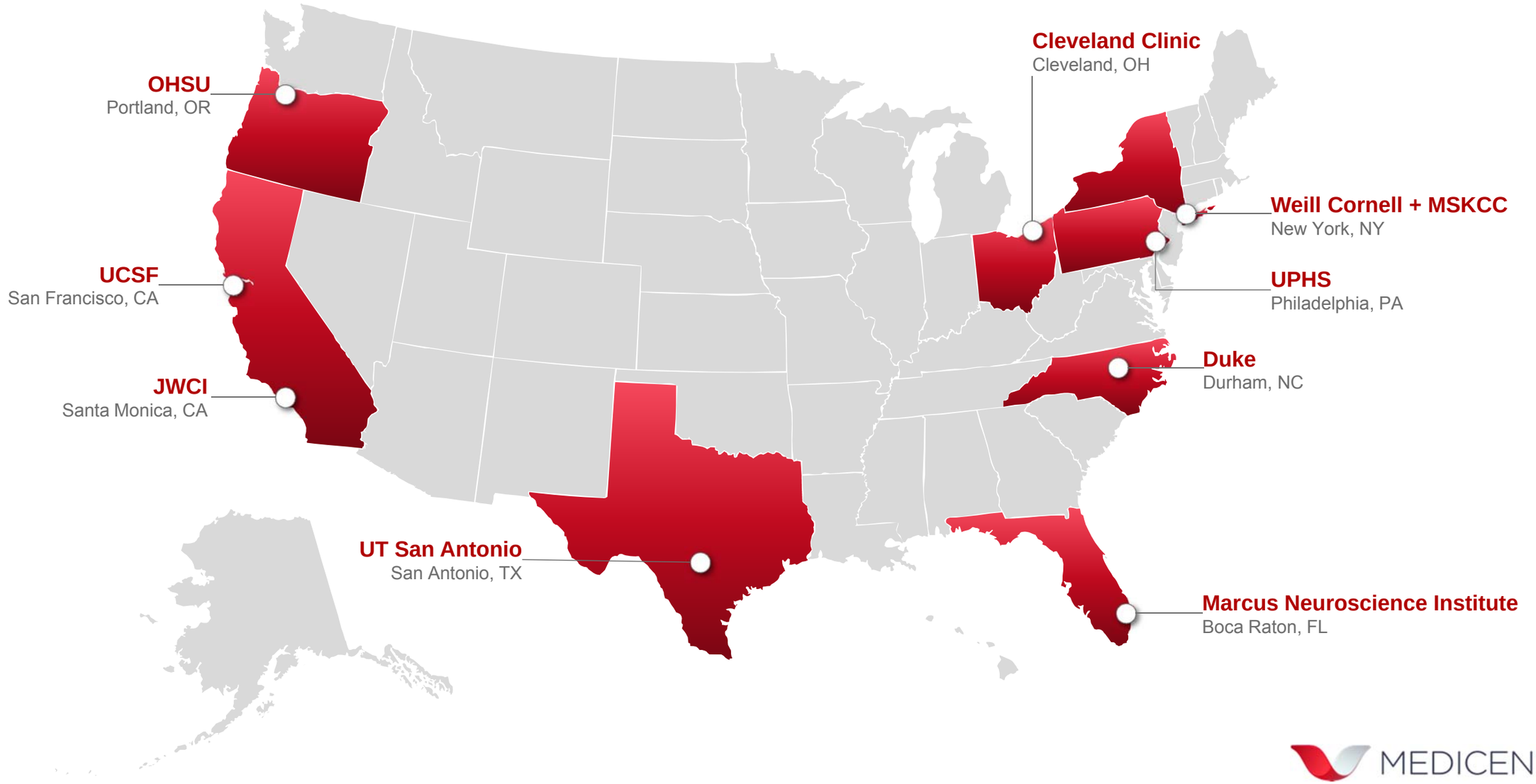
U.S. Centers of Excellence Participating in the Study



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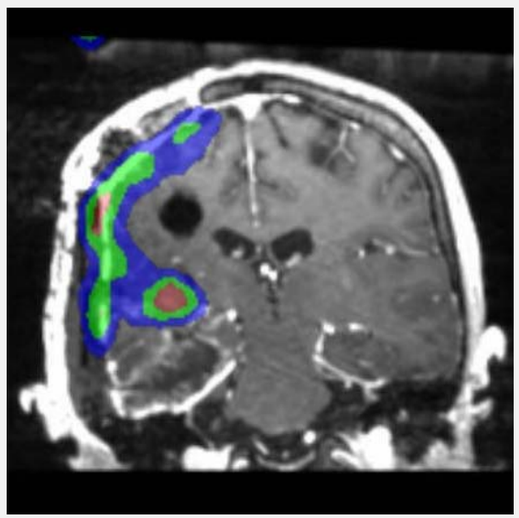
Optimization: High-flow Image Guided CED Improves Distribution

Reduced Treatment Duration from 4 Days to 1 Day

PAST STUDIES

1st Generation CED



Inaccurate catheter placement

Drug leakage due to backflow

Inadequate tumor coverage

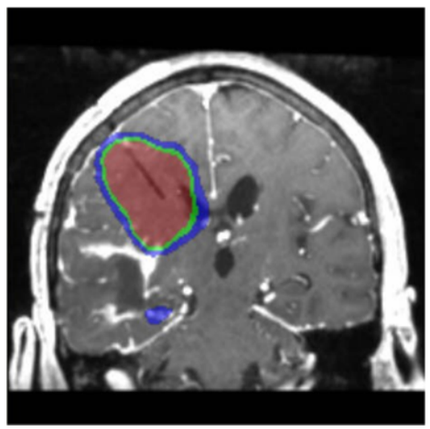
CURRENT STUDIES

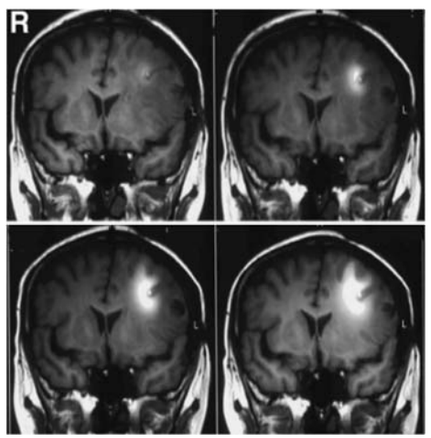
2nd Generation High-flow CED

Image-guided catheter placement

New catheters prevent backflow

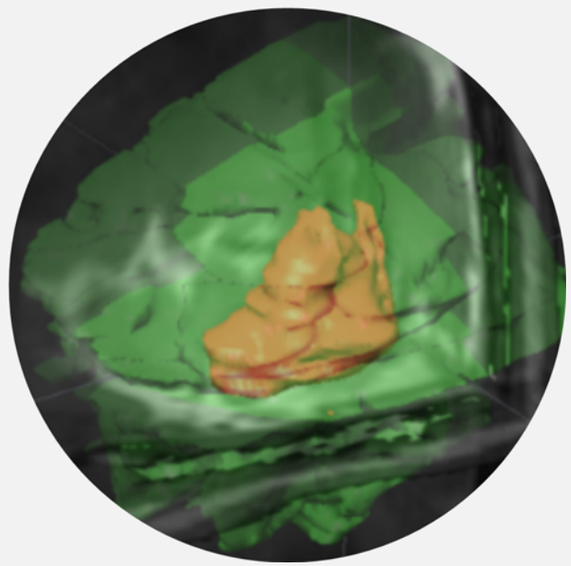
Real-time monitoring ensures tumor coverage





Saito and Tominaga (2012), Neurol Med Chir (Tokyo) 52, 531

3D IMAGE FROM PATIENT IN CURRENT CLINICAL STUDY



Sampson et al, Congress for Neurosurgery, Oct 9-11, 2017

Tumor Drug Coverage

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Promising Overall Survival and Tumor Control in rGBM at Low Doses of MDNA55 (n=27)

- Survival rates with MDNA55 at low doses exceeded survival rates reported for approved drugs for rGBM (based on interim data)
- Furthermore, a preliminary review of post-treatment MRIs conducted at each of the individual sites showed tumor shrinkage or stabilization for at least 8 weeks without clinical decline in 11 of 26 evaluable subjects treated at the low doses corresponding to a disease control rate of 42%

Compound	Population (n)	Survival			
		mOS (mos.)	OS6	OS9	OS12
MDNA55-05 Low Dose Cohorts	rGBM (n=27)	9.8	89%	58%	47%
Avastin[1]	rGBM (n=50)	8.0	62%	38%	26%
Lomustine[1]	rGBM (n=46)	8.0	65%	43%	30%

1 Taal et al, Single-agent bevacizumab or lomustine versus a combination of bevacizumab plus lomustine in patients with recurrent glioblastoma (BELOB trial): a randomised controlled phase 2 trial. Lancet Oncol 2014 Aug;15(9):943-53

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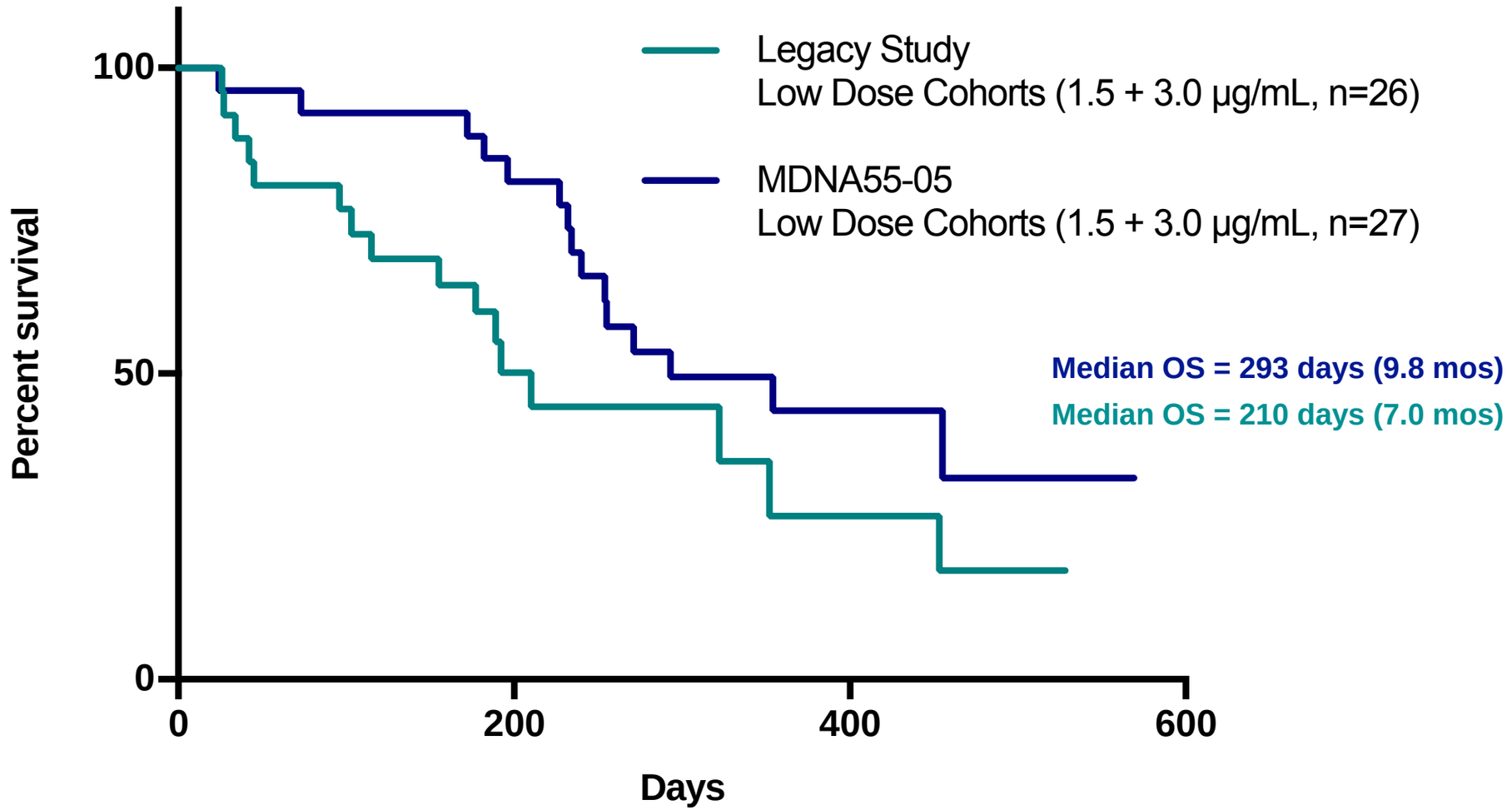
Survival at Low Doses Is Trending Better Than Legacy Studies

As of Oct 31, 2018



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MDNA55 Brain Cancer Market Opportunity

Market Size Estimated at $2B Annually

Tumor Type	Annual Incidence[1]	Projected Market[2]
Recurrent Glioblastoma (rGBM)	33,300	$650M
Metastatic Brain Cancer[3]	91,500[3]	$1.30B[4]
Pediatric Glioma	3,800	$50M
Total	**133,500**	**$2.0B**

1. GLOBOCAN 2012 in US, Europe and Japan http://globocan.iarc.fr/Default.aspx
2. Assumes peak sales for rGB monotherapy and combination therapy at $43K per patient – BioXcel Strategic Analysis Report, 2014
3. Breast, Colon and Kidney Cancer Metastasis to Brain – BioXcel Strategic Analysis Report, 2014
4. Assumes 33% treatable with MDNA55 and priced at $43K per patient - BioXcel Strategic Analysis Report, 2014

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Future Opportunity: 1 Million IL4R Cancers Annually

>2,000 Patient Biopsies Analyzed Consistently Show IL4R Over-Expression[1-14]

Glioblastoma 76%	Bladder 73%	Breast 82%	Colorectal 89%	Head and Neck 75%
	NSCLC 79%	Mesothelioma 96%	Ovarian 60%	Pancreatic 60%

1. BioXcel Strategic Analysis Report, 2014
2. Ishige et al (2008); Int J Cancer;123(12):2915-22.
3. Joshi et al (2014 Cancer Med. 3(6):1615-28.
4. P. Leland, et al (2000) Mol Med; 6(3): 165–178.
5. Koller , et al (2010); Carcinogenesis 31(6), 1010-17
6. Strome SE, et al (2002).Clin Cancer Res.n;8(1):281-6.
7. Puri, et al (1996). Cell Immunol.10;171(1):80-6.
8. Kawakami, et al (2005) Blood; 105(9): 3707–3713.
9. Kay, et al (2005) Leuk Res.;29(9):1009-18.
10. Kawakami, at al (2002). Clin Cancer Res.;8(11):3503-11.
11. Burt, et al (2012) Clin Cancer Res;18(6):1568-77
12. Kioi, et al (2005) Cancer Res;65(18):8388-96
13. Kawakami et al (2002) Cancer Res.;62(13):3575-80.
14. Joshi et al (2015) Discov. Med.;20(111):273-84.

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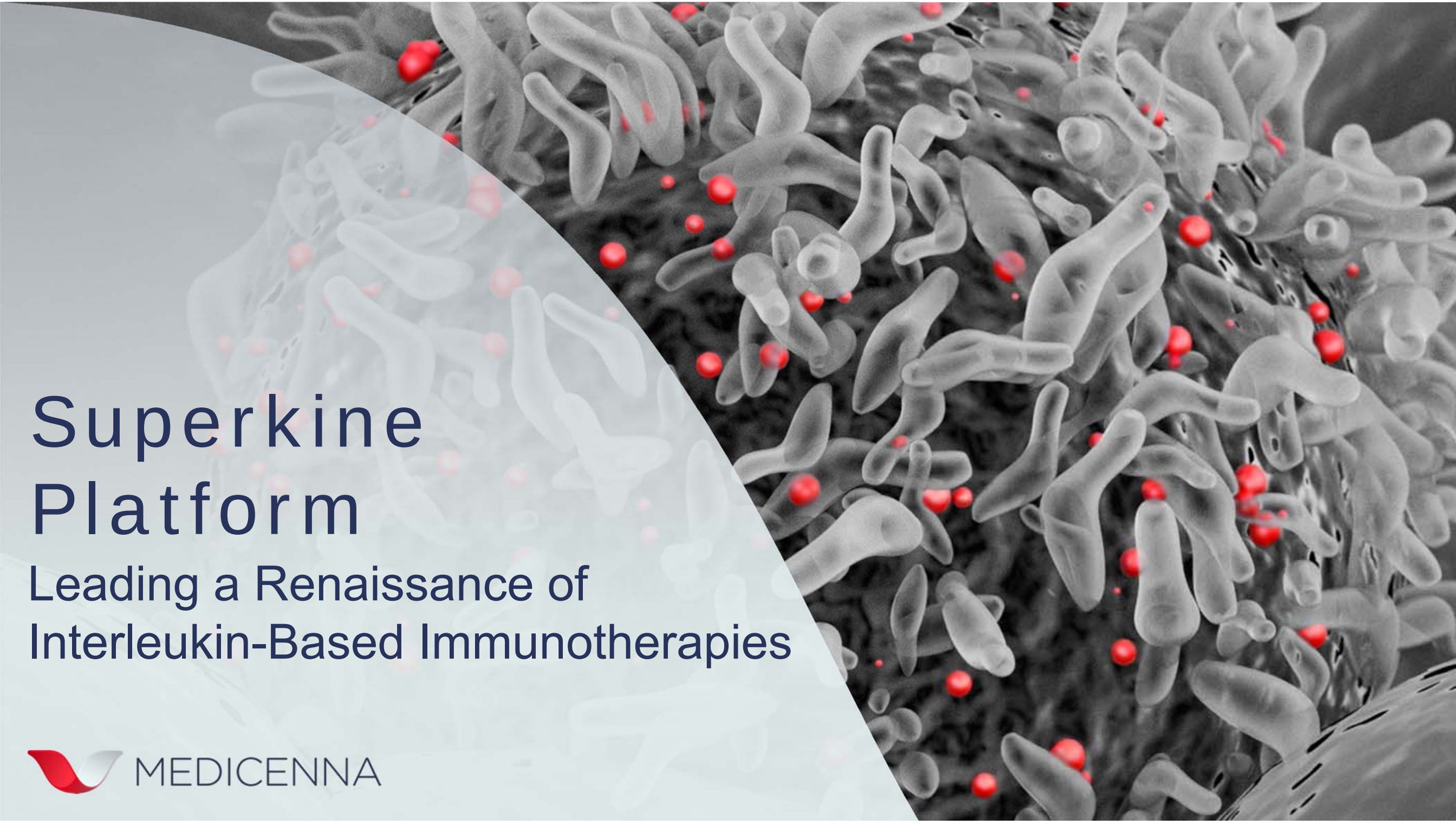

Superkine Platform

Leading a Renaissance of Interleukin-Based Immunotherapies

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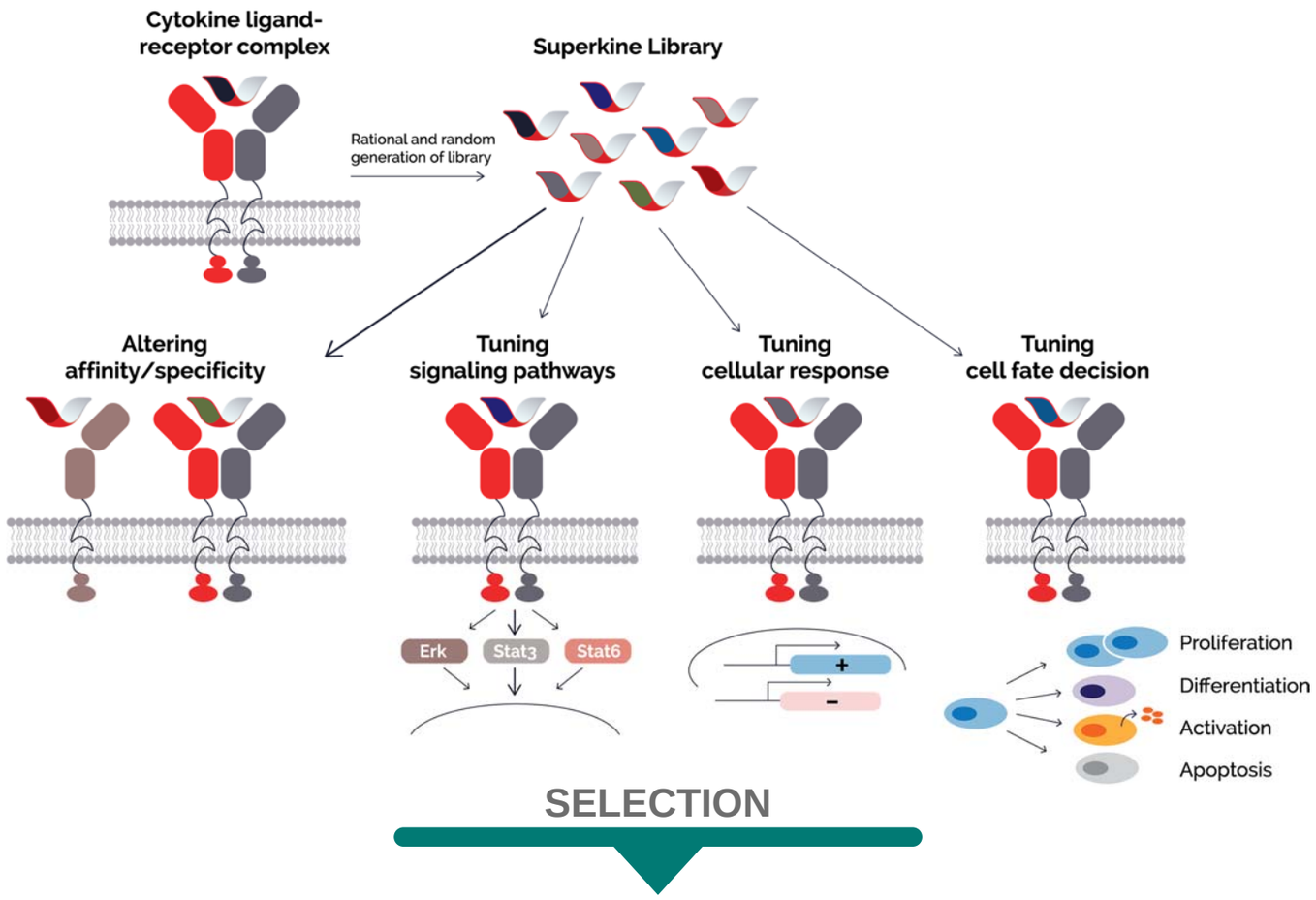
Extensive Library of Tunable Superkines

IL-2, IL-4 and IL-13 Superkines were engineered by directed evolution to have unique properties



Super-agonist or super-antagonist

Discovery Pipeline To Be Developed

Superkine Pipeline In-Licensed from Stanford University

SUPERKINE	Mechanism of Action	POTENTIAL INDICATIONS
MDNA109	IL-2 Super-Agonist; Selective binding to CD122	• Cancer Immunotherapies
MDNA209	IL-2 Super-Antagonist; Blocks IL-2 and IL-15 signalling and NK cell activity	• Autoimmune disorders
MDNA132	IL-13 Superkine Selective for IL13Ra2	• Solid tumours
MDNA413	IL4/13 Dual Super-Antagonist; Blocks Type 2 IL-4 and IL-13 signalling	• Solid Tumors • Atopic Dermatitis • Asthma • Fibrosis

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Leading the Way

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Financial Snapshot

- Cash and cash receivable balance at June 30, 2018: CDN$3.1 million
- Available to be drawn under CPRIT grant: up to US$5.3 million*
- Received to date from CPRIT grant: US$8.8 million
- *No Debt, No Preferred Shares*

Issued and Outstanding

24,578,137

Fully Diluted**

29,873,562

* Upon achievement of certain criteria as determined by CPRIT from time to time
** Fully diluted includes 3,045,425 warrants with a CND$2.00 exercise price and 2,250,000 stock options with a weighted average exercise price of CDN$2.09

Seasoned Management and Experienced Board

Management Team

Fahar Merchant, PhD *Chairman, President & CEO*
Former CEO Sophiris Bio (TSX); Former Director, President & CTO at KS Biomedix (LSE); Founder, President & CEO of Avicenna Medica and IntelliGene Expressions

Elizabeth Williams, CPA,CA *Chief Financial Officer*
Former VP Finance & Admin and interim CFO at Aptose (TSX and Nasdaq); Previously with Ernst & Young

Martin Bexon, MD *Head of Clinical Development*
Former Medical Director at CSL Behring; Medical Director at Hoffman La Roche (UK and Switzerland)

Nina Merchant, MESc. *Chief Development Officer*
Former SVP Development at Sophiris Bio; Formerly VP Development at KS Biomedix (LSE); Previously at Avicenna Medica, IntelliGene, Pharmacia and Sanofi Pasteur

Shafique Fidai, PhD *Head of Corp Development*
Former VP of Business Development at Sophiris Bio; Formerly with Xenon Pharma, Chromos

Board of Directors

Fahar Merchant, PhD *Chairman, President & CEO*

Albert Beraldo, CPA, CA *Independent Director*
Founder, President and CEO of Alveda Pharmaceuticals until its acquisition by Teligent, Inc. (NASDAQ: TLGT); Former President and CEO of Bioniche (TSX)

William W. Li, M.D. *Independent Director*
CEO, President and Co-Founder of the Angiogenesis Foundation. Executive strategic consultant to pharma in drug development and major investment banks. Director of Leap Therapeutics (NASDAQ)

Chandra Panchal, PhD *Independent Director*
Founder, Chairman and CEO of Axcelon; Former Co-Founder, President and CEO of Procyon Biopharma Inc. (TSX); Former Senior Executive VP of Business Development at Ambrilia Biopharma Inc. (TSX)

Andrew Strong, JD *Independent Director*
Partner at Pillsbury Winthrop Shaw Pittman — leading the Life Sciences Team in Houston, TX; Formerly CEO of Kalon Biotherapeutics. Director of Ashford Hospitality Prime (NYSE)

Nina Merchant, M.E.Sc *Director, Chief Development Officer*

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World Class Advisors and Collaborators

Clinical and Scientific Advisors

John Sampson, MD, PhD, MBA
Duke University
Chair CAB and Expert in CNS immunotherapy and Drug Delivery to the Brain

David Reardon, MD
Dana Farber Cancer Institute / Harvard Medical School
Clinical Director: Novel treatments for CNS Cancers

Krys Bankeiwicz, MD, PhD
University of California San Francisco
Prof of Neurosurgery: Expert in Convection Enhanced Delivery

Guido Kroemer, MD, PhD
University of Paris
Chair: SAB and Expert in Cancer Immunotherapy

Amy Heimberger, MD
MD Anderson Cancer Center
Professor of Neurosurgery and expert in GBM Immunotherapy

Sam Denmeade, MD
Johns Hopkins University
Professor of Oncology: Targeted therapies for cancer

Collaborators and Inventors

Raj Puri, MD
USFDA
Director at CBER
Inventor of MDNA55

Aaron Ring, MD, PhD
Yale University
Asst. Prof Immunobiology & Cancer Biology
Co-Inventor of IL-2 Superkines

Chris Garcia, PhD
Stanford University
Co-Inventor of IL-2, IL-4 and IL-13 Superkines

Haya Loberboum Galski, PhD
Hebrew University of Jerusalem
Inventor of Fully Human Payloads

AMGEN · Duke University · FDA U.S. Food & Drug Administration, Center for Biologics Evaluation & Research · Gustave Roussy Cancer Campus Grand Paris · The Hebrew University of Jerusalem · Johns Hopkins University · Yale · Stanford · UCSF University of California San Francisco

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Multiple Near-Term Value Inflection Milestones

MDNA55

- Complete enrollment in Phase 2b rGBM trial
- Report rGBM Phase 2b interim top-line results
- End of Phase 2 meeting with FDA
- Commence Phase 2a clinical trial in newly diagnosed brain cancer

MDNA109

- Select lead candidate with extended half life
- Complete dose range finding studies for pre-IND meeting with FDA
- Complete IND enabling studies in preparation for Phase 1 clinical trial

Phase 2 clinical results for MDNA55 in rGBM

MDNA109 to be IND Ready

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Visionary Medicines.

MDNA55 — LEAD PROGRAM		SUPERKINE PLATFORM	MDNA109
COMPELLING DATA Phase 1/2 data in rGBM with MDNA55	**ORPHAN/ FAST TRACK** Orphan Drug (FDA, EMA) Fast Track (FDA)	**IL-2; IL-4; IL-13** Tunable cytokines	**IL-2 SUPER-AGONIST**
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Thank You!

Fahar Merchant, PhD
President and Chief Executive Officer
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