October 2026

LifeRaft Biosciences

VEPOLOXAMER · A PHARMACEUTICAL GRADE, PURIFIED FORM OF POLOXAMER 188

Corporate Presentation

IMPORTANT INFORMATION

Forward-Looking Statements

FORWARD-LOOKING STATEMENTS

This presentation contains forward-looking statements. All statements other than statements of historical fact are forward-looking statements, including statements regarding: the potential safety, efficacy and therapeutic benefit of vepoloxamer; the design, timing, enrollment and results of preclinical studies and clinical trials; anticipated regulatory submissions, interactions and approvals; the potential market opportunity for our product candidates; our plans to seek and obtain government and other non-dilutive funding; our business strategy; and our expected cash runway and capital requirements. Words such as “anticipate,” “believe,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “potential,” “should,” “target,” “will” and similar expressions identify forward-looking statements, although not all forward-looking statements contain these words.

These statements reflect our current expectations and are based on assumptions that may prove incorrect. They are subject to known and unknown risks and uncertainties that could cause actual results to differ materially, including: the uncertainties inherent in drug development; the risk that results of earlier studies are not predictive of later results; delays in or failure to initiate, enroll or complete clinical trials; the risk that the FDA or other regulators do not accept our development plans or approve vepoloxamer for any indication; our ability to obtain sufficient funding on acceptable terms; our reliance on third-party manufacturers and contract research organizations; our ability to obtain, maintain and enforce intellectual property protection; competition; and general economic and market conditions.

Forward-looking statements speak only as of the date of this presentation. Except as required by law, we undertake no obligation to update or revise any forward-looking statement, and you should not place undue reliance on them.

INVESTIGATIONAL PRODUCT

Vepoloxamer is an investigational product candidate. It has not been approved by the U.S. Food and Drug Administration or any other regulatory authority for any use, and no conclusions should be drawn regarding its safety or efficacy.

MARKET AND INDUSTRY DATA

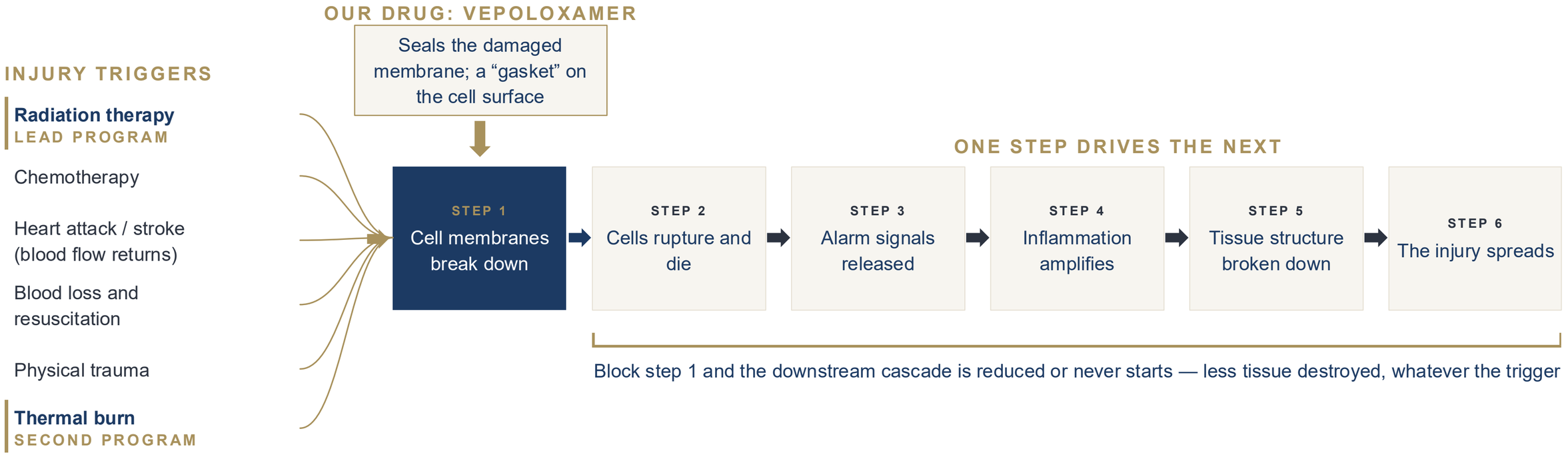
This presentation includes estimates, projections and other information about our industry and markets drawn from third-party studies, publications and our own internal estimates. We have not independently verified third-party data. This information involves assumptions and limitations, and you are cautioned not to give undue weight to it.

NO OFFER OR SOLICITATION

This presentation is for informational purposes only and is not an offer to sell, or a solicitation of an offer to buy, any securities. Any offer will be made only to qualified investors through definitive private placement documents, under an exemption from registration under the Securities Act of 1933. Our securities have not been registered with the SEC or any state securities regulator.

THE PLATFORM

When tissue and cells are injured, it is not the initial injury that does all the damage—it is a cascade of cellular injury after the fact.



Because the target is a physical state of the cell membrane, the same mechanism applies wherever membranes are being damaged. That is what makes this a platform, not a single-indication drug.

THE PLATFORM

One mechanism, two treatment windows; dosed before the injury, or in the hours after it

DOSED BEFORE

Dosing is scheduled, so the drug is already circulating when the injury occurs, readily available to reduce cellular damage and protect healthy cells

POTENTIAL INDICATIONS

- **Radiation-induced severe oral mucositis** — Lead Program
- Radiation proctitis, esophagitis, dermatitis, pneumonitis
- Radiological and nuclear countermeasures (BARDA, DoD)
- Planned ischemia in surgery and organ preservation

DOSED SOON AFTER

Dosed in the hours after an unplanned injury. Hundreds of thousands of patients a year, almost no approved options.

POTENTIAL INDICATIONS

- **Acute burns** — Second Program
- Traumatic brain injury
- Ischemic stroke as a tPA and/or thrombectomy adjunct; cardiac protection
- Hemorrhagic shock and resuscitation

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Lead indications and strategy

Lead indication: a first-in-class, de-risked therapy for radiation-induced severe oral mucositis (RI-SOM)

High Unmet Need: ~90K Radiation Therapy patients/yr across the US, EU & UK face this debilitating toxicity with no FDA-approved preventive; >$1B addressable market

First-in-Class Mechanism: PURIFIED FORM OF POLOXAMER 188 physically reseals damaged cell membranes, mitigating the injury cascade, without preventing the effect of radiation therapy on cancer cells

Safety Assessed in Other Indications: ~2,300 total human exposures in prior sickle-cell (Vepoloxamer) and cardiac (unpurified P188) trials; Vepoloxamer AEs comparable to placebo, no drug-related deaths. Not yet studied clinically in oral mucositis.

Manufacturing In Hand: ~140 kg of GMP drug substance on hand; enough to supply the planned proof-of-concept trial.

Regulatory Head Start: Complete IND package from prior Phase 3 program.

Strong IP & Exclusivity: Composition-of-matter to 2035 (US + ex-US); Method-of-Use (2041+) granted in Japan, under prosecution in US/EU; plus NCE market exclusivity.

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"Pain lengthens time."

A patient's account of severe oral mucositis, published in the *New England Journal of Medicine*.

This is the toxicity Vepoloxamer is designed to prevent — for the 60–70% of head & neck radiation patients who develop it, and for whom no FDA-approved preventive exists.

STOMATITIS

A fish hook lodges in my throat.
Spittle, kindergarten paste, thickens everything – even vision.
Mouth, pocked with sores & blisters, swollen ulcerated tongue.
Topside, sandpapered with number 7 coarsest grade.
Taste buds, saliva glands, seared.
Cool water, corrosive acid now.
The tongue rests; teeth become enemies.
Coiled steel razored wire atop dentate prison walls.
Only moans escape my lips. I cannot eat or speak.
Inside a howl festers.

Pain lengthens time.

— Anita Hart Balter

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Balter AH. Stomatitis. *N Engl J Med*. 1990;322:704. Quoted for illustrative purposes. Stomatitis is a broad term for inflammation or sores inside the mouth; SOM is a specific form.

UNMET NEED

A devastating, untreated toxicity in a large, well-defined population

Healthy cells of the mouth, while not the target of the radiation, are also damaged during treatment

IMPACT OF SEVERE ORAL MUCOSITIS

- **A majority of patients** require opioids, need a feeding tube or a pureed diet by the end of treatment, and report difficulty eating and swallowing.
- **More than a third** of patients are hospitalized during treatment, with a mean stay of **nearly 5 days**.
- Treatment breaks let tumors regrow **about 3 times faster**, and each missed day of radiation cuts tumor control by about **1%**.

~90K

new US, EU, and UK head & neck cancer patients/yr requiring radiation

60% - 70%

develop severe Grade 3+ mucositis (98.6% develop some OM)

$1B+

global addressable market (US + EU + UK)

0

FDA-approved drugs to prevent radiation-induced SOM

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Sources: New oral cavity & oropharyngeal cancer cases — US 60,480 (American Cancer Society, Cancer Statistics 2026 / National Cancer Institute (NCI) SEER); Western Europe 71,700; UK ~4,000 (Cancer Research UK). Radiation-treated population assumes 60% (US) and 70% (EU/UK) receive RT/CRT. Severe (Grade 3+) oral mucositis (60–70%) — Brown et al., Oral Oncology Reports (2025); Iovoli et al., JAMA Network Open (2023), intensity-modulated radiation therapy (IMRT) cohort n=576: 62.5% severe; 77% on pureed diet/feeding tube; 63% opioid use; 69%/57% difficulty eating/swallowing. Hospitalization (37%, mean 4.9-day stay) — Murphy et al., J Pain Symptom Manage (2009) 38(4):522–532 / ASCO 2006 (abstr 5539). Addressable market = 89,278 radiation-treated patients at average of $12,000/course. No FDA-approved agent prevents radiation-induced severe oral mucositis (OM) in head & neck cancer. Treatment breaks and tumor repopulation — Russo G, et al. The Oncologist 2008;13:886–898; Vera-Llonch M, et al. Cancer 2006;106:329–336.

Vepoloxamer: novel mechanism of action for Radiation-Induced Severe Oral Mucositis, minimizing damage to healthy cells without protecting the tumor

A non-ionic triblock copolymer. Vepoloxamer integrates into damaged cell membranes, acting upstream of the oxidative cascade that drives mucosal injury.

Regulatory head start

A complete filed IND (EPIC Phase 3 in sickle cell); ~75% of that language is reusable for the oral mucositis IND. Failure in sickle cell was wrong indication, not a molecule failure*.

Safety de-risked in other indications

~2,300 total human exposures in prior trials in other indications (sickle cell (Vepoloxamer), and cardiac (unpurified P188)) with no drug-related deaths. Vepoloxamer AEs comparable to placebo. Not yet studied clinically in oral mucositis.

Manufacturing in hand

~140 kg of GMP API on hand (enough for initial trials) and a documented, transferable manufacturing process ready for CDMO re-establishment.

IP and Exclusivity

Composition-of-matter patent to 2035, an exclusively-licensed method-of-use application (approved in Japan), and 5-year NCE exclusivity at launch.

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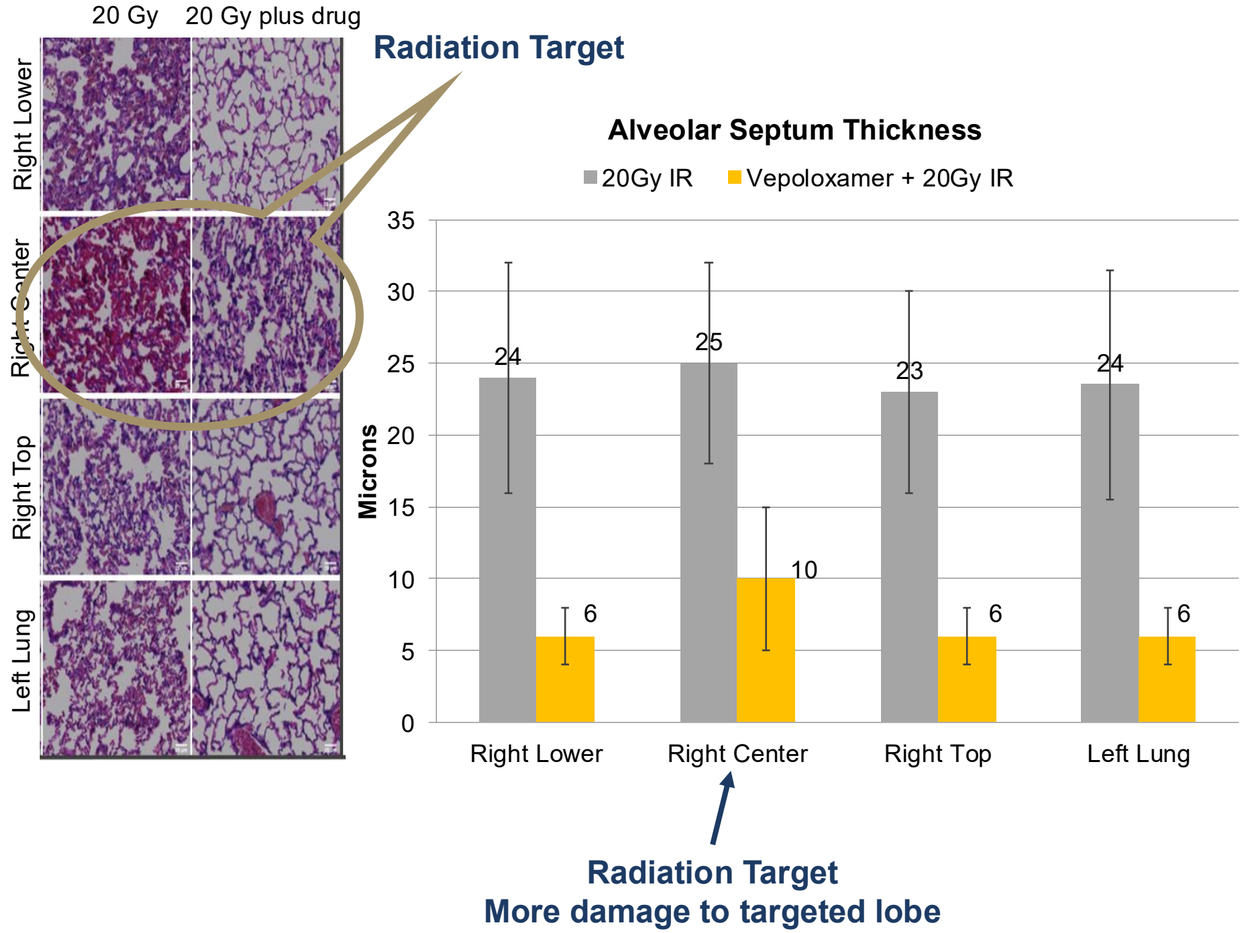
*Source: JAMA, 2021. jamanetwork.com/journals/jama/fullarticle/2778807

Vepoloxamer reduces damage to non-targeted tissue in animal model exposed to ionizing radiation



Study Design

- Healthy lung tissue in rats exposed to 20 Gy radiation (targeted to right center lobe of the lung) with and without Vepoloxamer
- Damage (as measured by a thicker alveolar septum) was lessened by the addition of Vepoloxamer prior to radiation

Key findings

- Without Vepoloxamer, radiation caused widespread lung damage that spread far beyond the targeted area
- With Vepoloxamer, the damage was greater in the targeted lobe, and less damage to the tissue that was not targeted

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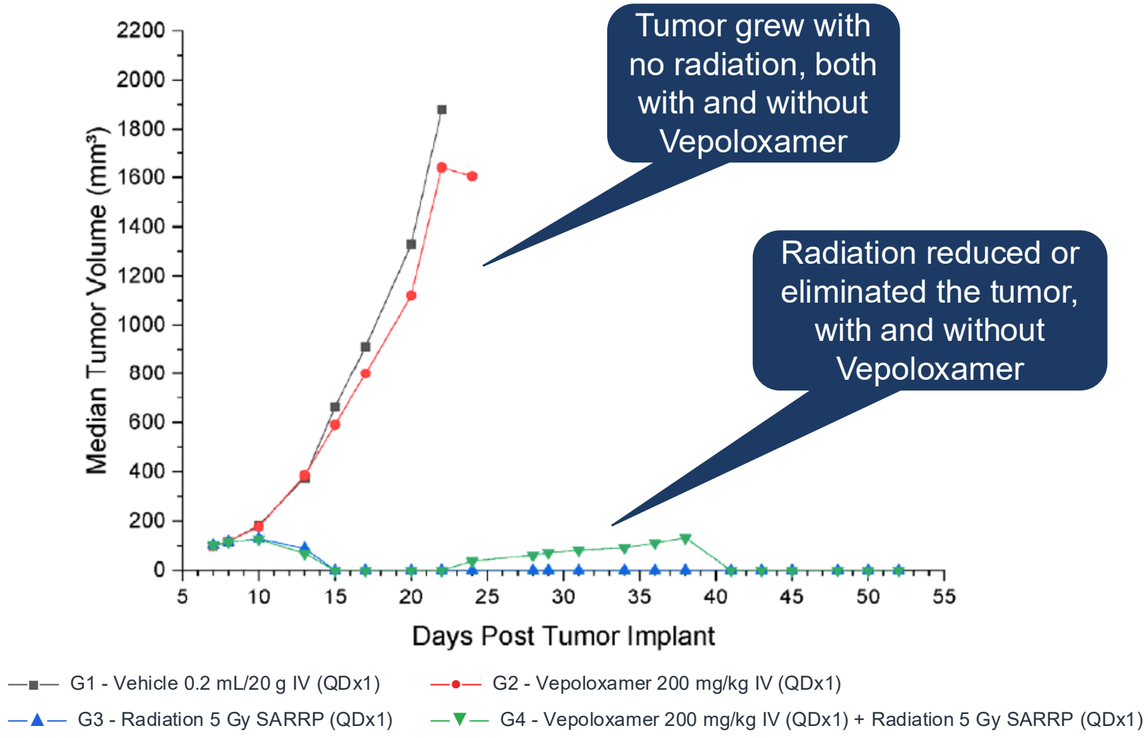
Source: Internal research, November 2021. Figure: H&E (hematoxylin and eosin) histology across four lung lobes

Tumor control: Vepoloxamer does not interfere with radiation efficacy



Study design

- Mouse model with subcutaneous colon carcinoma
- Treated with radiation, with and without Vepoloxamer

Key findings

- Radiation alone shrank or eliminated the tumor in most animals, with the majority still tumor-free at the end of the study
- Adding Vepoloxamer did not blunt that effect

Together with the lung study, these results show the profile of a clinically useful radioprotectant — non-targeted tissue shielded, tumor not.

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Source: Internal research. Chart: median tumor volume by group.

UNMET NEED · BURNS

No approved therapy targets the systemic phase of a major burn

US BURN CARE SPEND

$10B+

spent each year on burn care in the United States, from injuries that make up 1% of all injuries.

MORTALITY WITH INFECTION

~75%

of patients burned over 40% of total body surface area die with a secondary infection, often progressing to sepsis.

TARGETED THERAPIES

0

approved drugs target or reverse the inflammatory cascade that follows a major burn.

THE STUDY WINDOW

Burn over 20–40% of total body surface area

Below 20% there is no systemic response to modify; above 50%, mortality can mask a treatment effect.

WHAT BURN SURVIVORS FACE AFTER THE INITIAL BURN

The secondary inflammatory response and immune dysfunction that follow the initial burn have not been treated — survivors carry multiple organ failure, susceptibility to infection, prolonged intensive care unit (ICU) stays and lasting disability.

How a burn sets this off is well understood. The problem is that the tremendous inflammatory response it generates affects the entire body, so a drug aimed at any single part of it has never been enough.

Source: Britton GW, Wiggins AR, Halgas BJ, et al. Surg Clin North Am 2023;103(3):415–426. Sauaia A, Moore FA, Moore EE. Crit Care Clin 2017;33(1):167–191.

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GROWTH STRATEGY

De-risk in RI-SOM, pipeline expansion across the radiation and acute injury indications

LEAD PROGRAM

De-risk the molecule in severe oral mucositis

- Prophylactic design; on board before the insult
- Lean Phase 1b/2a leveraging the existing IND & data
- AI-enabled drug development; smaller company, faster execution, lower cost

PIPELINE BUILD AND GROWTH OPTIONS

Optionality across radiation & acute injury

- Additional indications where radiation therapy leads to damaged healthy cells
- Acute indications driven by downstream tissue damage
- Grant and government funding opportunities: BARDA, NIH/NCI, DoD/CDMRP

PATH TO PHASE 2 READOUT IN RI-SOM

2026
Company Startup
Team formation, Pre-IND package, CMC readiness

2027
IND-enabling
GMP DP supply, IND filing

2028
First patient in
Phase 1b/2a in SOM begins

2029
Phase 2a data
Top-line readout

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TEAM & ADVISORS

Experienced leadership team

John Lunger, MBA

PRESIDENT AND CEO

Former Chief Patient Supply Officer at Adaptimmune (NASDAQ: ADAP); delivered TECELRA, the first FDA-approved engineered T-cell therapy for solid tumors. Built three cell & gene therapy plants and helped raise $300M+. 25+ years across life sciences in small molecule and biologics, operations, strategy, and corporate development.

Adaptimmune · Wyeth · Pfizer · VWR · Merrimack

Arun Kejariwal, MS, MBA

CHIEF OPERATING OFFICER

Former asset general manager for CNS and rare disease programs at Spark Therapeutics, taking them from concept to IND clearance; later Chief of Staff to the CEO through the Roche integration. 25+ years across drug development, CMC, portfolio strategy, and licensing valuation at GSK, Pfizer, and Merck; led the start-up of a biologics plant.

Spark Therapeutics · GSK · Pfizer · Merck

Keith Dewedoff

CHIEF FINANCIAL OFFICER

20+ years as CFO across venture-backed and public biotechs. Concurrent CFO / Advisor at Danforth Advisors and Chair of Kaizen Bioscience. B.S. Economics, Northeastern University.

Danforth Advisors · Kaizen Bioscience

Lean operating model: CEO full-time; CFO, COO, and additional senior leaders operate as a fractional leadership team as appropriate, with execution delivered through specialist consultants and vendors leveraging AI-native infrastructure

TEAM & ADVISORS

Scientific advisory board

KOLs across the lead indication and the priority pipeline.

RI-SOM · TRANSLATIONAL & CLINICAL EXPERTS

Dr. Stephen Sonis, DMD, DMSc

SAB Chair · Harvard, Brigham & Women's Hospital & Dana-Farber Cancer Institute

Defined highly translational models of cancer-therapy tissue toxicity — the basis of modern oral mucositis drug development. Senior academic at Harvard, Brigham & Women's and Dana-Farber. Founder of Biomodels and Primary Endpoint Solutions. 350+ publications cited 39,000+ times.

Dr. Alessandro Villa, DDS, PhD, MPH

Chief of Oral Medicine & Oral Oncology · Herbert Wertheim Cancer Institute

Leading clinician-scientist in oral complications of cancer therapy — LifeRaft's lead indication. Trained at Harvard/Brigham & Women's and NCI/NIH; former UCSF Chief of Oral Medicine. Specializes in oral mucosal disease, dysplasia, and cancer-treatment toxicities. Subject-matter expert for Primary Endpoint Solutions.

TRAUMA & CRITICAL CARE

Dr. Vanessa Nomellini, MD, PhD, FACS

Associate Professor, Burn/Trauma & Critical Care Surgery · UT Southwestern

Bridges Vepoloxamer into burns, trauma & TBI — the priority pipeline. MD/PhD; Director of Research for Burn, Trauma & Critical Care Surgery at UT Southwestern. Holds an NIH R35 on immune suppression in critically ill trauma and sepsis patients.

VEPOLOXAMER · INVENTOR

Dr. Martin Emanuele, PhD, MBA

40+ years biopharma R&D & executive leadership · Vepoloxamer originator

Inventor of Vepoloxamer — led the purified poloxamer program through clinical development. ~40 years in biopharma R&D and executive leadership. Inventor on 30+ patents; drove 8 first-in-class INDs and 2 NDAs. Closed 20+ partnerships exceeding $1B in value.

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One molecule, many potential indications

The same membrane-sealing mechanism that protects oral mucosa from radiation injury applies to any condition driven by cell-membrane damage

Scientific validation across multiple indications

40+ independent preclinical studies — peer-reviewed efficacy signals across multiple organ systems. Examples include:

ISCHEMIC STROKE + tPA

32%

smaller stroke damage in aged-rat model on standard clot-busting therapy

TRAUMATIC BRAIN INJURY

3 days

therapeutic window with measurable benefit out to 72 hours post-injury

CARDIAC PROTECTION

+11%

improvement in heart pumping function in a chronic heart-failure dog model

Acute Indications with supporting academic research using P188 or Vepoloxamer — US patients/year

550K	795K	960K	450K	214K	185K
MI / STEMI	Stroke	Heart failure	Burns	Traumatic Brain Injury hospitalizations	Hemorrhagic shock

Sources: Preclinical: Wang et al. Stroke 2019; Frontiers Neurology 2023; Chen 2024 Neurochem Int; Sabbah 2020. US incidence: MI/STEMI per StatPearls (550K new MI/yr); Stroke per CDC (795K/yr); Heart failure per HFSA HF Stats 2024 (960K new dx/yr); TBI per CDC (214K hospitalizations, 2020); Burns/Hem. shock per published literature.