ONCOSEC'S PLATFORM TO ATTACK VISCERAL, CUTANEOUS AND SUBCUTANEOUS TUMORS

NASDAQ: ONCS
AUGUST 2020

FORWARD LOOKING STATEMENTS

To the extent statements contained in the following presentations are not descriptions of historical facts regarding OncoSec Medical Incorporated, they should be considered "forward-looking statements," as described in the Private Securities Litigation Reform Act of 1995, that reflect management's current beliefs and expectations. You can identify forward-looking statements by words such as "anticipate," "believe," "could," "estimate," "expect," "forecast," "goal," "hope," "hypothesis," "intend," "may," "plan," "potential," "predict," "project," "should," "strategy," "will," "would," or the negative of those terms, and similar expressions that convey uncertainty of future events or outcomes. Forward-looking statements are not assurances of future performance and include, but are not limited to, statements regarding: (i) the success and timing of our product development activities and clinical trials; (ii) our ability to develop and commercialize our product candidates; (iii) our plans to research, discover, evaluate and develop additional potential product, technology and business candidates and opportunities; (iv) our and our partners' ability to develop, manufacture and commercialize our product candidates and to improve the manufacturing process; (v) the size and growth potential of the markets for our product candidates, and our ability to serve those markets; (vi) the rate and degree of acceptance of our product candidates; (vii) our ability to attract and retain key scientific or management personnel; (viii) the anticipated timing of clinical data availability; (ix) the anticipated timing of commercial launch of ImmunoPulse® IL-12; (x) our ability to meet our milestones; (xi) our expectations regarding our ability to obtain and maintain intellectual property protection; (xii) the level of our corporate expenditures; (xiii) the assessment of our technology by potential corporate partners; and (xiv) the impact of capital market conditions on us. Forward-looking statements are subject to known and unknown factors, risks and uncertainties that may cause actual results to differ materially from those expressed or implied by such forward looking statements. These statements are also subject to a number of material risks and uncertainties that are described in OncoSec's most recent Annual Report on Form 10-K filed with the Securities and Exchange Commission, as updated by its subsequent filings with the Securities and Exchange Commission. Undue reliance should not be placed on forward-looking statements. We undertake no obligation to publicly update any forward-looking statements, except as required by law. OncoSec's investigational drug and device products have not been approved or cleared by the FDA.

OncoSec at a Glance

We are a late-stage biotechnology company focused on intratumoral DNA based immunotherapies.

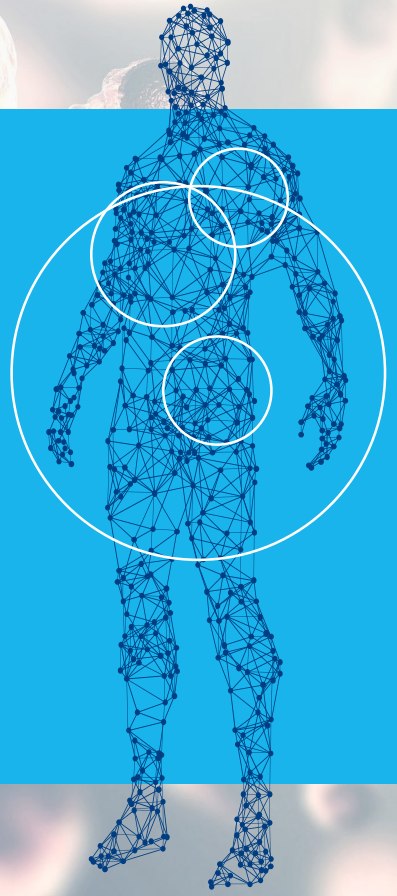
- **Headquarters:** Pennington, NJ, with R&D Laboratories in San Diego, CA
- **Ticker:** NASDAQ: ONCS
- **Market Cap (as of 7/20/20):** ~$82M
- **Stock Price (as of 7/20/20):** $3.57

Technology: Our lead product candidate, TAVO™, intratumoral DNA plasmid-based IL-12 delivered via electroporation, has demonstrated promising anti-tumor activity with abscopal responses in melanoma and four other cancer types. Anti-tumor activity observed both as a monotherapy and in combination with anti-PD-1 checkpoint inhibitors.

Clinical Pipeline: TAVO is being evaluated in combination with Merck's KEYTRUDA® in two ongoing KEYNOTE clinical trials - a pivotal study in anti-PD-1 checkpoint resistant metastatic melanoma and a phase 2 study in metastatic triple negative breast cancer.

Partnerships: We have a track record of establishing, operating and evolving high-performance partnerships globally. Ongoing collaboration partners include Merck, CGP, Sirtex, among others.

The Promise of Immunotherapy Has Yet to Be Fully Realized



THE PROMISE

Instead of cytotoxic agents, use the body's own immune system against tumors

Immunotherapy in many forms — like checkpoint therapy — have had **unprecedented success** in halting or shrinking cancer

How Checkpoint Inhibitors Work

1. **Molecular switches known as checkpoints normally prevent T-cells from attacking healthy tissue**

2. **When these checkpoints, such as PD-1 and PD-L1, are hijacked by cancer cells, the immune system's T-cell response is switched off, allowing tumors to grow**

3. **Checkpoint inhibitors flip the switch back on, freeing the immune response so that T-cells are activated and destroy the cancer cells**

Yet, there are still too many patients who are not benefiting from these therapies

Checkpoint Non-response in 60-90% of Cases

TUMOR TYPE	% OF CHECKPOINT NON-RESPONDERS
MELANOMA	~60-80%
TRIPLE NEGATIVE BREAST	~95%
HEAD AND NECK	~68-86%
CERVICAL	~86%
SUBCUTANEOUS T-CELL LYMPHOMA	~57%

KEYTRUDA®

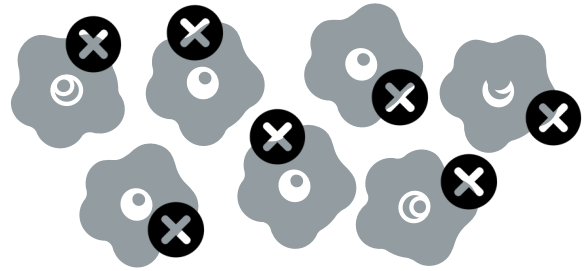
Powerful drugs (like KEYTRUDA®) have been highly successful for some patients, but not the majority

90% of cancers are solid tumors. Of these:

~30%

Hot Tumors

- Have T-cells and cancer fighters
- Respond to checkpoint therapies



~70%

Cold Tumors

- Have immunosuppressive cells
- Have few or no T-cells
- Do not respond to checkpoint therapies

There is an industry effort underway to improve response rates through new therapies or additional therapies

TAVO™ is Capable of Reversing Resistance to Checkpoint Therapies

TAVO (plasmid-based interleukin-12) is administered locally at the tumor site using OncoSec's electroporation gene delivery system. TAVO is designed to induce local expression of IL-12, turning "cold" tumors "hot" and **enabling checkpoint therapies to be effective.**

Well Tolerated

TAVO leverages IL-12, a naturally occurring chemical in the body; intratumoral approach avoids systemic toxicity

Intratumoral Approach with Abscopal Effect

Clinical data in five tumor types showing evidence of anti-tumor activity with whole body (abscopal) effect

Cold to Hot

Clinical data shows TAVO induces local expression of IL-12, converting immunologically suppressed "cold" tumors into T-cell inflamed "hot" tumors

Sustainable

Highly scalable with low manufacturing costs, potentially offering an innovative treatment option well below the cost of other biologic drug therapies

Benefits of Electroporation (EP) Gene Delivery System

A non-invasive, non-chemical, non-toxic method that is easy to perform

Rapid Transfection

More rapid than traditional chemical or biologic cell transfection techniques

Surface & Visceral Lesions

Beyond cutaneous and subcutaneous; tumors can be accessed with an endoscope, bronchoscope, catheter, or trocar

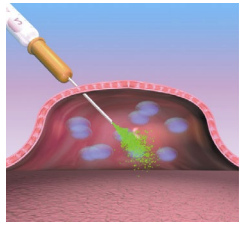
Versatile

Wide array of molecules can be transfected, and can be applied to a broad selection of cell types

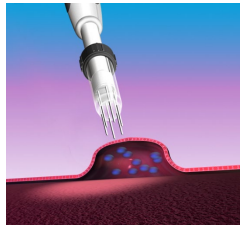
Non-Invasive

Electroporation gene delivery is noninvasive, nonchemical, nontoxic method of cell transfection, applicable to a wide array of immunologically relevant molecules

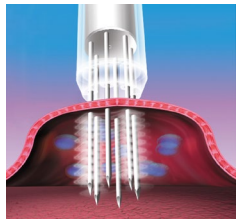
Seamless Delivery of Plasmid IL-12 + Energy



Step 1: TAVO™ Injection
Multiple copies of IL-12 coded DNA plasmids to produce immune modulatory proteins are injected directly into the tumor using a conventional needle and syringe.



Step 2: Applicator Insertion
The applicator's tip needle array is inserted into the tumor, up to a depth of 15mm.



Step 3: Electroporation
Electrical pulses, activated by a foot switch administered between hexagonal needle electrodes increases the permeability of cell membranes, facilitating uptake ("transfection") of IL-12 coded DNA into cells.

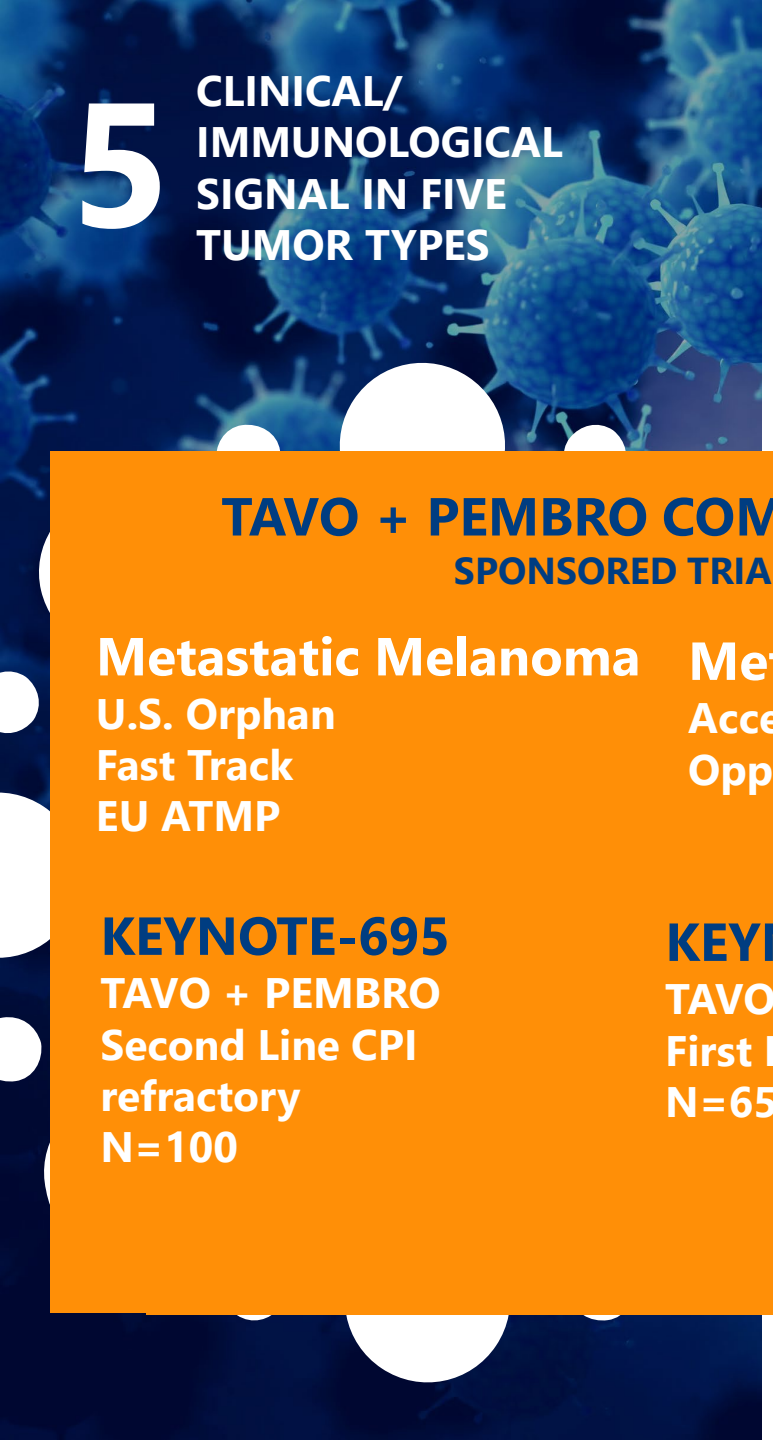
Genpulse™ Generator

Fixed electrical field intensity. Momentary electrical pulses (100 µsec duration and 300 millisecond interval). Pulses activated by foot switch. 16 lbs. 12.5" w x 5.5" h x 13" d

Sub / Cutaneous Applicator

Handle with electrode needed array disposable tip. Applicator 0.5 or 1.0 cm in diameter. Needle array hexagonal. Adjustable needles 1-15 mm.

Entire procedure takes approximately 30 minutes



TAVO: A Tumor Agnostic Platform with Single Agent Activity

TAVO + PEMBRO COMBINATION
SPONSORED TRIALS

Metastatic Melanoma
U.S. Orphan
Fast Track
EU ATMP

Metastatic TNBC
Accelerated Approval
Opportunity

KEYNOTE-695
TAVO + PEMBRO
Second Line CPI refractory
N=100

KEYNOTE-890
TAVO + PEMBRO + Chemo
First Line
N=65

TAVO SINGLE AGENT
INVESTIGATOR-SPONSORED TRIALS

- Metastatic Melanoma
- Metastatic Head & Neck
- Metastatic Merkel Cell Carcinoma
- Metastatic Cutaneous T-cell Lymphoma

Clinical Pipeline is Well Diversified with Multiple Growth Opportunities

	REGIMEN	TRIAL	INDICATION	N	PARTNER	PHASE 1	PHASE 2	PIVOTAL
TAVO™	TAVO + pembrolizumab	**KEYNOTE-695**	Checkpoint Resistant Metastatic Melanoma	~100	MERCK	→		
	TAVO + pembrolizumab	**KEYNOTE-890**	Triple Negative Breast Cancer (TNBC)	~65	MERCK	→		
	TAVO + epacadostat + pembrolizumab	OMS-131 (Investigator Sponsored Study)	Squamous cell carcinoma head and neck (SCCHN) cancer	~34	UCSF	→		

Recent Peer Reviewed Publications

*Click thumbnails to access full articles

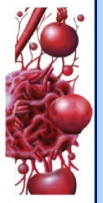
TAVO SINGLE AGENT ABSCOPAL EFFECT

Drug Evaluation

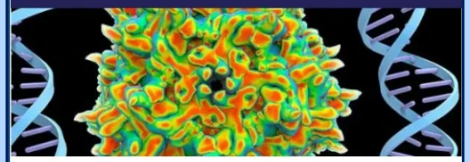
Immunotherapy

For reprint orders, please contact: reprints@futuremedicine.com

Melanoma treatment with intratumoral electroporation of tavokinogene telseplasmid (pIL-12, tavokinogene telseplasmid)



Gene Therapy



Nature Gene Therapy

Characterization of abscopal effects of intratumoral electroporation-mediated IL-12 gene therapy.

September 30, 2019

Published OnlineFirst December 18, 2019; DOI: 10.1158/2326-6066.CIR-19-0359

CANCER IMMUNOLOGY RESEARCH | RESEARCH ARTICLE

Intratumoral Plasmid IL12 Electroporation Therapy in Patients with Advanced Melanoma Induces Systemic and Intratumoral T-cell Responses

CLINICAL CANCER RESEARCH

The Journal of Clinical and Translational Research

AACRJournals.org @CCR_AACR

AACR American Association for Cancer Research

Clinical Cancer Research

Intratumoral Delivery of Plasmid IL12 Via Electroporation Leads to Regression of Injected and Noninjected Tumors in Merkel Cell Carcinoma.

February 1, 2020

ESMO GOOD SCIENCE BETTER MEDICINE BEST PRACTICE

ANNALS OF ONCOLOGY driving innovation in oncology

ORIGINAL ARTICLE

Intratumoral delivery of tavokinogene telseplasmid yields systemic immune responses in metastatic melanoma patients

TAVO + PEMBRO IN ANTICIPATED ANTI-PD-1 CHECKPOINT FAILURES

JCI The Journal of Clinical Investigation

Tumor immune profiling predicts response to anti–PD-1 therapy in human melanoma

JOURNAL OF CLINICAL ONCOLOGY ORIGINAL REPORT

Programmed Death-Ligand 1 Expression and Response to the Anti–Programmed Death 1 Antibody Pembrolizumab in Melanoma

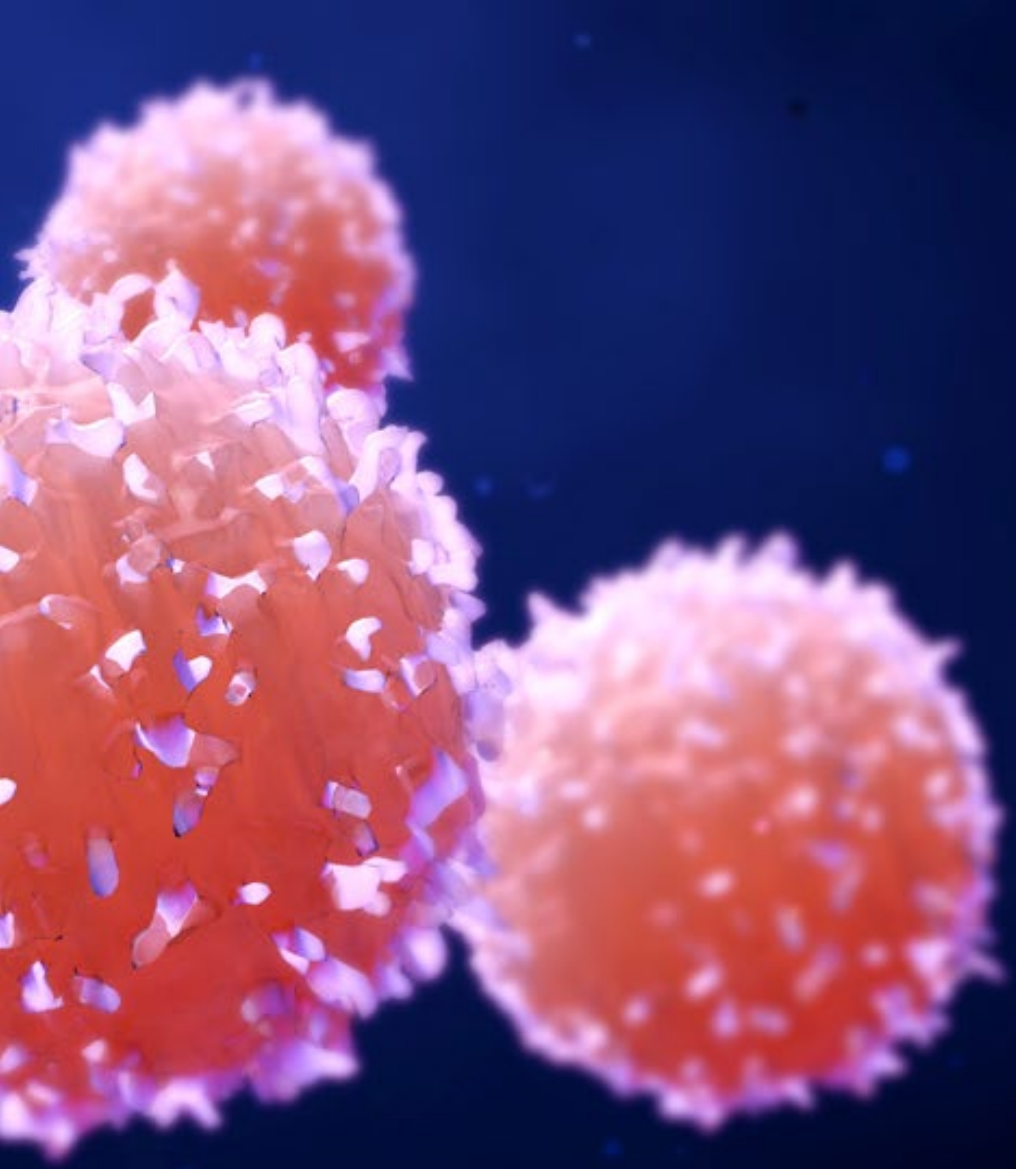
JCI insight CLINICAL MEDICINE

Partially exhausted tumor-infiltrating lymphocytes predict response to combination immunotherapy

Published OnlineFirst May 6, 2020; DOI: 10.1158/1078-0432.CCR-19-2217

CLINICAL CANCER RESEARCH | CLINICAL TRIALS: IMMUNOTHERAPY

Phase II Trial of IL-12 Plasmid Transfection and PD-1 Blockade in Immunologically Quiescent Melanoma



FDA Fast Track
KEYNOTE-695

Ongoing pivotal trial in PD-1 checkpoint resistant metastatic melanoma provides a pathway towards accelerated approval

GRANTED FAST TRACK AND ORPHAN DRUG DESIGNATIONS

Fast-track makes TAVO™ eligible for accelerated approval program

Program for patients with no FDA approved treatment options

Must meet RECIST (tumor shrinkage) criteria – demonstrating that TAVO works

KEYNOTE695

Up To
30 Sites

Number Of
PATIENTS
TO BE TREATED

100

DEFINITIVE CLINICAL PROGRESSION ON FULL COURSE ANTI-PD-1

Stage 3/4 Melanoma

Received at least 12 weeks of anti-PD-1 therapy + **Progressive disease according to RECIST v1.1** + **Documented disease progression <12 weeks of last dose** + **No intervening therapies permitted between checkpoint failure and trial enrollment** = **Eligible patient/definitive by RECIST V1.1 anti-PD-1 refractory patient**

PRIMARY OUTCOME

ORR (by BICR) based on RECIST v1.1

SECONDARY OUTCOMES

ORR, DOR, PFS and OS

PRELIMINARY DATA

Metastatic Melanoma

TAVO™ + KEYTRUDA® (pembrolizumab) for Checkpoint Refractory Metastatic/Recurrent Melanoma

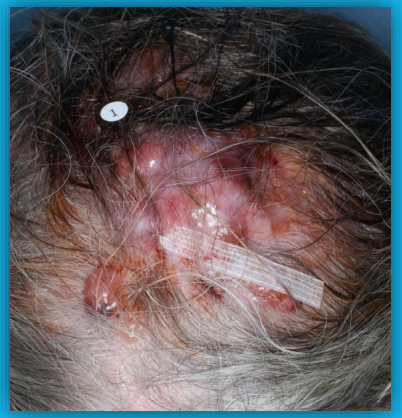
KEYNOTE-695 STUDY EVALUATING 100 PATIENTS - *ONGOING*

4 PRs and 1 CR out of 21 patients evaluated by RECIST v1.1 as of 12/15/18

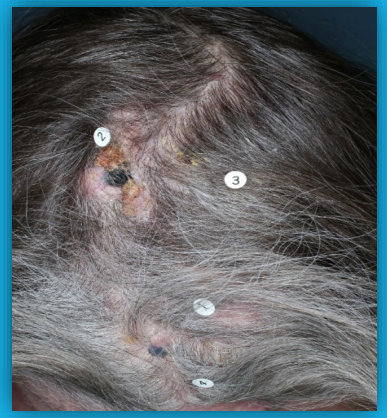
Durable responses observed

Responders are patients with bulky disease

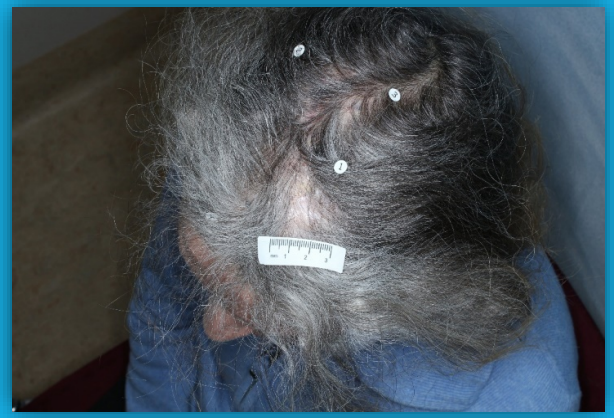
Responders demonstrating regression of distant visceral lesions



BASELINE



12 WEEKS



24 WEEKS

Patient no longer treated with TAVO as there are no accessible lesions

Patient continues maintenance pembrolizumab

Notes: PR = partial response ; CR = complete response

US Market Opportunity

90% of all cancer cases are solid tumors

1.6M new cases of solid tumors in the US

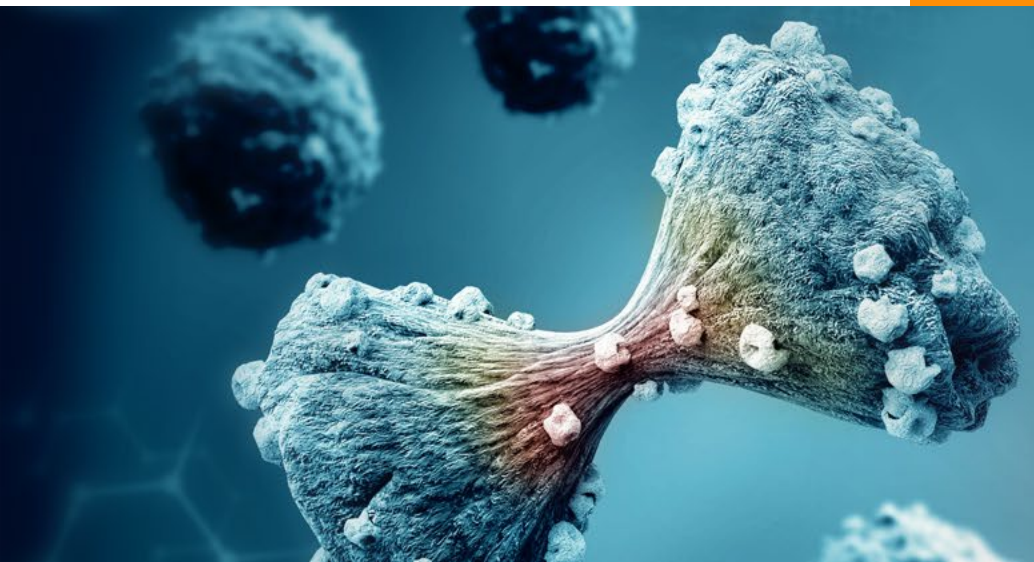
Focusing First on Metastatic Melanoma in the United States

91,000 diagnosis each year

9,000 deaths each year

Incidence of melanoma on the rise (1.4% yearly for a decade)

US melanoma market projected to almost double from $2B in less than 10 years



15,000
Patients receiving PD-1 inhibitors

9,000
PD-1 refractory patients

2,700
PD-1 refractory with accessible lesions

Commercialization by 2022 Targeted

Potential US Regulatory Timeline

2020
Pre-BLA Meeting with FDA

2021
Submission of BLA for Accelerated Approval

2022
FDA Accelerated Approval of TAVO for Metastatic Melanoma

KEYNOTE 695

TAVO is US Orphan Designated and Keynote-695 is fast tracked. OncoSec will seek accelerated approval

Potential EU Regulatory Timeline

Awarded EU small-medium enterprise (SME) and ATMP designations by EMA's committee on advanced therapeutics (CAT) in 2020

EARLY 2019
Obtained Advanced Therapy Medicinal Product (ATMP) Designation

2020
Obtain CE Mark for to-be-marketed GenPulse Device

2021
Meetings with EU Rapporteurs

2022
File MAA for Conditional Approval in EU and File Device Application in EU

2023
EMA Conditional Approval of TAVO for Metastatic Melanoma

Expanding KEYNOTE-890 into First-Line mTNBC

PHASE 2

Multi-cohort, open-label study of TAVO in combination with KEYTRUDA with or without chemotherapy in approximately 65 patients with metastatic TNBC

COHORT 1

TAVO and KEYTRUDA in patients with heavily pre-treated mTNBC

N=25

CLOSED ENROLLMENT

COHORT 2

TAVO and KEYTRUDA plus Chemotherapy in patients with mTNBC (first-line setting)

N=40

NOW ENROLLING

Primary Endpoint: ORR by blinded independent central review (BICR) based on RECIST v1.1

If KEYNOTE 890 Cohort 2 is successful, plan to expand into pivotal study

TAVO could be eligible for FDA accelerated approval

KEY ADVANTAGES OF MOVING TO FIRST-LINE

High unmet medical need

Opportunity to improve PFS and OS

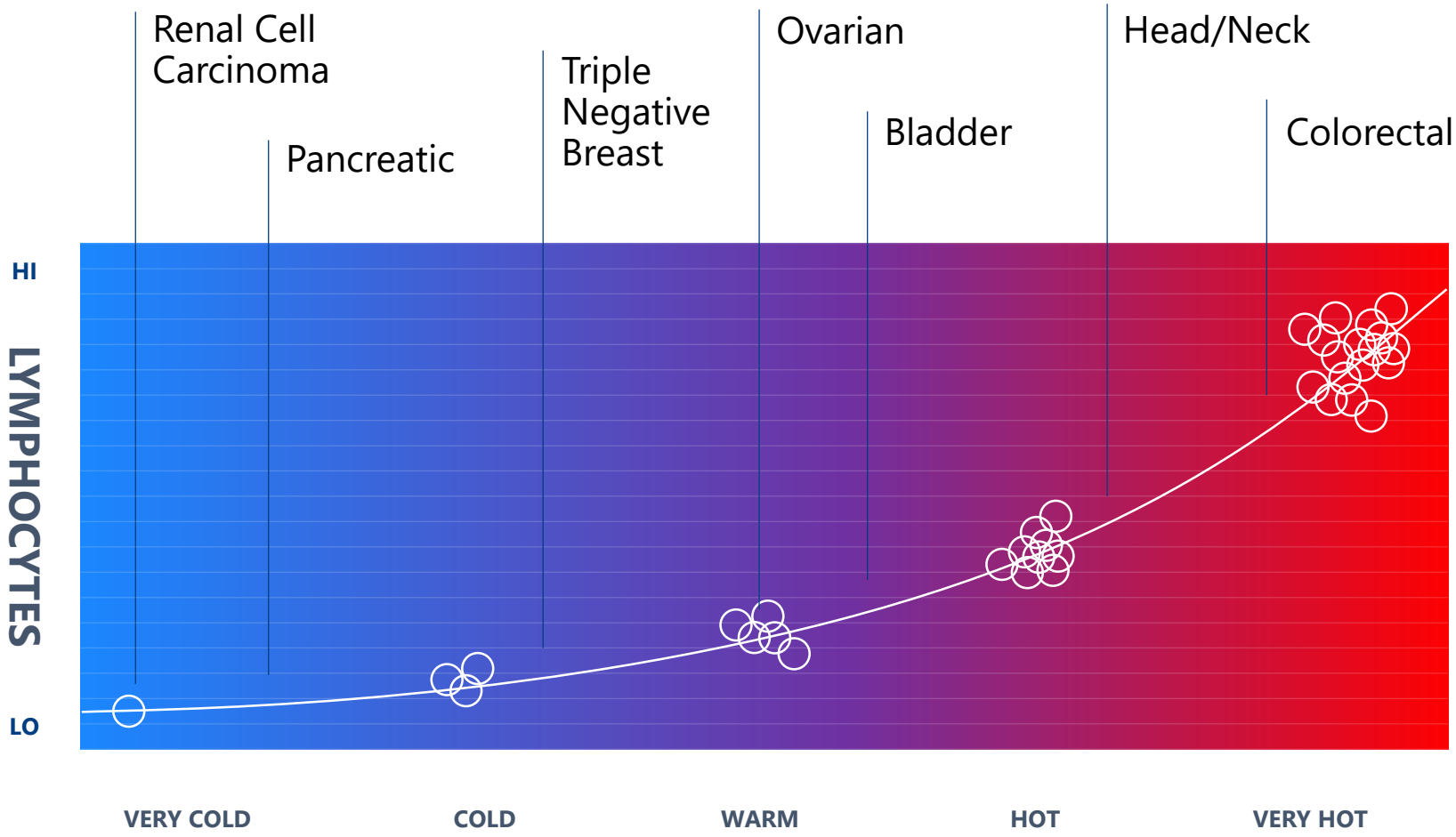
Cohort 2 designed to expand into pivotal study

Larger overall patient population – greater commercial opportunity vs. last-line setting

TAVO has shown higher efficacy in less refractory patients in melanoma

FUTURE OPPORTUNITIES

TAVO™ is Tumor Agnostic



Giving life to the promise of immunotherapies across cancer types

Few cancers are highly infiltrated or "HOT" - most fall on a spectrum from warm (cold-acting) to cold

TAVO is widely applicable, we plan to expand our studies to include a wider range of tumors that do not respond well to checkpoints, including traditionally "cold"

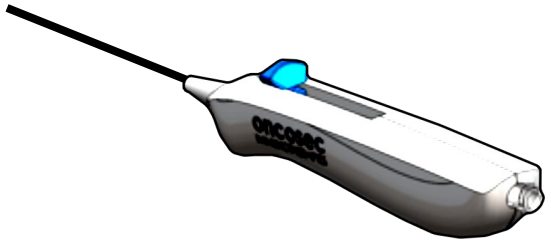
The Power of TAVO™ for Visceral Lesions (liver, GI, lung)

Pioneering technology designed to target and treat tumors located deep inside the body

INTRODUCING THE

VLA: Visceral Lesion Applicator

Flexible catheter-based applicator

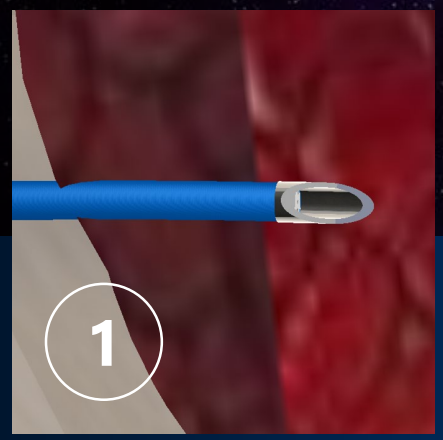


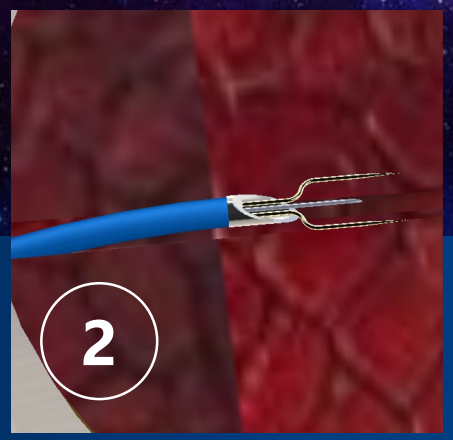
Rigid trocar-based applicator

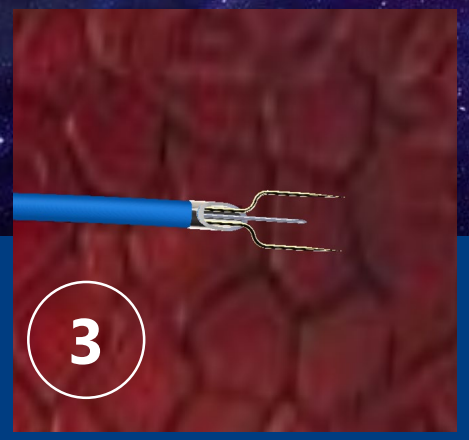
Lower voltage Apollo generator to be used with VLA

VLA Highlights

1. Rigid and catheter models: Used with bronchoscope, cystoscope, and trocar
2. Prototype successfully tested in large animal model: bone, pancreas, liver, lung, & bladder







oncosec™
IMMUNOTHERAPIES

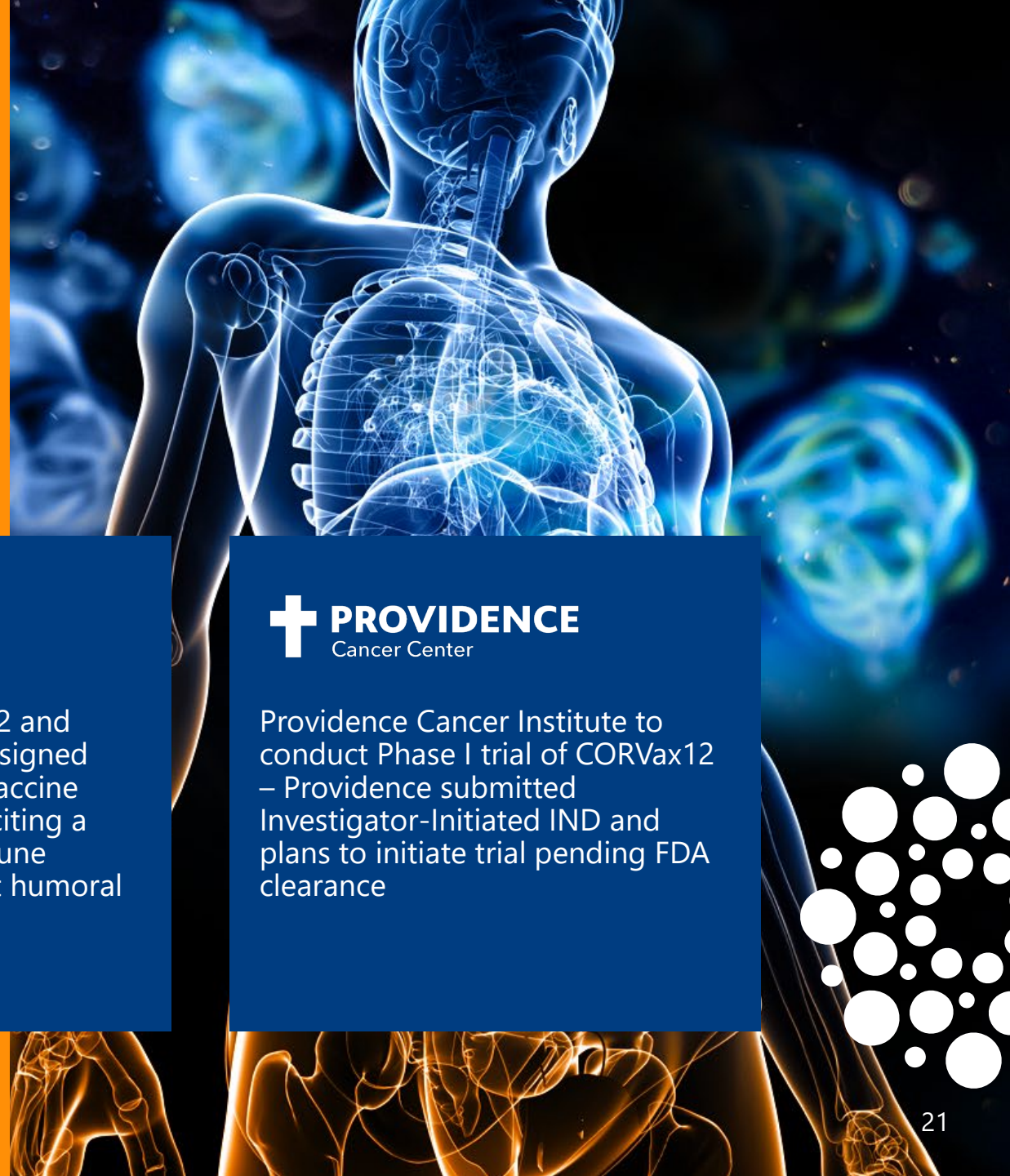
CORVax-12 Vaccine for COVID-19

CORVax-12 is a DNA vaccine which combines OncoSec's TAVO / IL-12 immunotherapy with NIH's "spike" protein developed by NIAID as a vaccine against the 2019 novel coronavirus

The combination of IL-12 and NIH's spike protein is designed to drive a coordinated vaccine response, capable of eliciting a Th1-biased cellular immune response to drive robust humoral immunity

PROVIDENCE
Cancer Center

Providence Cancer Institute to conduct Phase I trial of CORVax12 – Providence submitted Investigator-Initiated IND and plans to initiate trial pending FDA clearance



Leveraging World Class Strategic Partnerships to Enhance Pipeline Value

CGE 远大健康 CGE HEALTHCARE	SIRTeX	MERCK	emerge health
Our partnership with CGP gives us the ability to develop and introduce our products to the important Chinese market	Through our partnership with Sirtex, we have access to top-notch commercial talent and resources	We are partnering with Merck on several KEYNOTE clinical programs to potentially address a great unmet need: anti-PD-1 non-responders	Emerge collaboration provides Australian metastatic melanoma patients early access to TAVO™ via the Special Access Scheme

Other TAVO R&D Partnerships Include: UCSF, Duke University, Roswell Park

CGP-Sirtex Strategic Transaction

KEY HIGHLIGHTS:

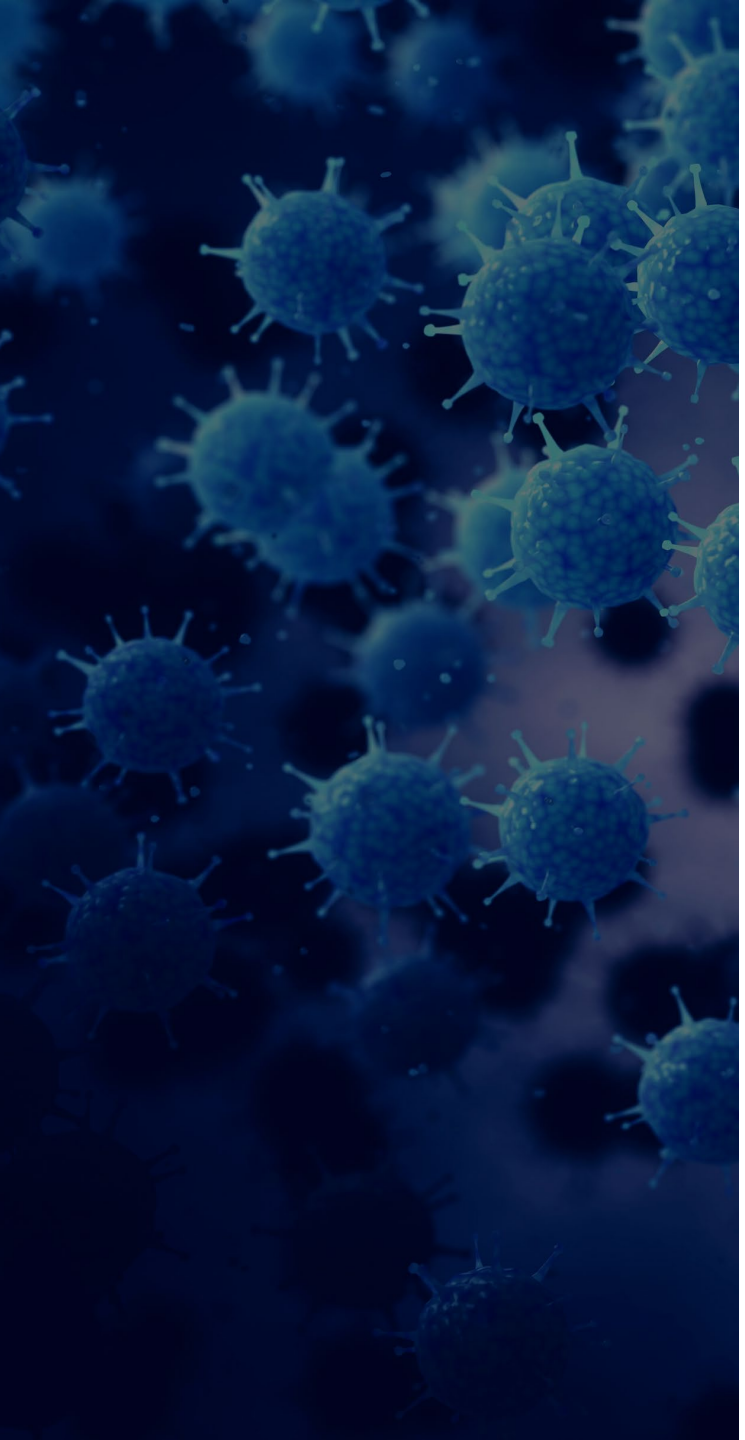
- On 2/10/2020, OncoSec received a $30M cash infusion from China Grand Pharmaceutical (CGP) and its affiliate Sirtex at $2.50 per share - a significant premium to the then market price of $1.64
- OncoSec granted CGP an exclusive license to develop, manufacture and commercialize OncoSec's products in greater China. CGP pays for all development costs and OncoSec collects up to 20% royalties on the net sales of such products in greater China
- Sirtex conducts and pays for pre-commercialization preparatory activities for TAVO™ in late-stage melanoma and for VLA in exchange for low single digit royalties on those products

China Grand Pharmaceuticals

- CGP is a public company listed on the Hong Kong stock exchange with a market capitalization of approximately $1.8 billion USD.
- CGP develops, manufactures and distributes pharmaceutical products and medical devices to retailers and medical organizations.
- CGP currently distributes its products to approximately 6,000 hospitals and approximately 30,000 pharmacies and has a sales team of more than 2,000 employees.
- CGP also has significant experience in R&D and product commercialization in China, which makes CGP an ideal strategic partner for OncoSec as it looks to gain regulatory approval to introduce TAVO™ to the Chinese market.

Sirtex

- Sirtex is a global healthcare company with offices in the U.S., Australia, Europe and Asia, working to improve outcomes in people with cancer.
- Sirtex's current lead product is a targeted radiation therapy for liver cancer called SIR-Spheres® Y-90 resin microspheres.
- More than 100,000 doses have been supplied to treat patients with liver cancer at more than 1,000 medical centers in over 40 countries.
- Sirtex's global focus on drug development makes it a natural partner for the Company as it looks to develop and introduce TAVO™ into markets around the world.



Strong Financial Position to Drive TAVO™ Development Forward

$30.1M

Cash & Equivalent
as of 4/30/20

22,771,571

Total Shares Outstanding
as of 4/30/20

None

Debt

Key Developments in 1H 2020

- Closed on $30 million strategic financing and partnership with CGP/Sirtex
- Presented promising preclinical data on novel visceral lesion applicator
- Announced partnership with Providence Cancer Institute to investigate OncoSec's CORVax-12 vaccine for COVID-19
- Appointed renowned oncologist and immunologist – Herbert Kim Lyerly, MD, Duke University – to board of directors
- TAVO™ granted CAT certification in Europe to support marketing authorization application in melanoma
- Increased recognition of TAVO data via 4 peer-reviewed publications year-to-date
- Strengthened IP estate with three new patents covering TAVO and electroporation gene delivery system
- Initiated a second TAVO / KEYTRUDA® combination study in TNBC designed to expand into a pivotal study

Anticipated Milestones

- Provide preliminary data update in pivotal KEYNOTE-695 study for checkpoint resistant metastatic melanoma
- Complete enrollment in pivotal KEYNOTE-695 study
- Prepare to file TAVO™ for accelerated FDA approval in metastatic melanoma
- Initiate TAVO neoadjuvant study in metastatic melanoma
- Complete preclinical assessment and IND prep for VLA, APOLLO™ and SPARK™

Established Biotech Leaders
WITH A TRACK RECORD OF SUCCESS

MANAGEMENT

Daniel J. O'Connor
President/Director/CEO

Christopher G. Twitty, Ph.D
Chief Scientific Officer

Robert J. Delaversano, CPA
Principal Accounting Officer And Controller

Kim Jaffe, Ph.D
Senior Director, Operations

Kellie Malloy Foerter
Chief Operating Officer

Keir Loiacono
General Counsel, Vice President, Corporate Development

Robert W. Ashworth, Ph.D
Senior Vice President, Regulatory, Quality/CMC

John Rodriguez
Vice President, Product Engineering

BOARD OF DIRECTORS

Daniel J. O'Connor, JD
Chief Executive Officer & Director

Margaret R. Dalesandro, Ph.D.
Chair

Herbert Kim Lyerly, M.D.
Director

Chao Zhou
Director

Yuhang Zhao, Ph.D., M.B.A.
Director

Kevin R. Smith
Director

Jim DeMesa, M.D., M.B.A.
Director

Robert E. Ward
Director

Joon Kim, JD
Director

CLINICAL ADVISOR

Alain Algazi, M.D.

OncoSec is Positioned for Success with TAVO™

Positive tumor shrinkage/response data being generated by our lead product candidate, TAVO, across multiple solid tumor types

Well tolerated, natural solution that may increase the efficacy of checkpoint therapies

Expanding device development and clinical studies into new tumor types to serve a wider set of patients

Fast track status and partnership with Merck provides opportunity for more robust drug development

Strong financial position with no debt

Thank You

oncosec™
IMMUNOTHERAPIES

Keir Loiacono
HEAD OF CORPORATE DEVELOPMENT

914.329.9071
kloiacono@oncosec.com

HEADQUARTERS
24 NORTH MAIN STREET
PENNINGTON, NJ

SCIENTIFIC LAB & RESEARCH
3565 GENERAL ATOMICS CT.
SAN DIEGO, CA