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IMMUNOTHERAPIES

Corporate Update
Non-Confidential Presentation

April 2023

Risk Factors and Forward-Looking Statements

This presentation contains forward-looking statements that involve a number of risks and uncertainties that could cause actual results to differ materially from those anticipated in the forward-looking statements. Forward-looking statements provide the Company's current beliefs, expectations and intentions regarding future events and involve risks, uncertainties (some of which are beyond the Company's control) and assumptions. For those statements, we claim the protection of the safe harbor for forward-looking statements contained in the Private Securities Litigation Reform Act of 1995. You can identify forward-looking statements by the fact that they do not relate strictly to historical or current facts. These statements may include words such as "anticipate," "believe," "could," "estimate," "expect," "intend," "may," "plan," "potential," "should," "will" and "would" and similar expressions (including the negative of these terms). Although we believe that expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements. The Company intends these forward-looking statements to speak only as of the time they are published or as otherwise specified and does not undertake to update or revise these statements as more information becomes available, except as required under federal securities laws and the rules and regulations of the Securities Exchange Commission ("SEC"). In particular, you should be aware that statements regarding projected increases in market valuation of immune-oncology approaches, anticipated global intratumoral cancer therapy market growth, applicability of TAVO™ in solid tumors outside of the Company's current clinical focus, the anticipated increase in instances of melanoma and corresponding market size increase for melanoma treatments, the anticipated timing of regulatory agency meetings and future CRO engagement, future clinical trials, the Company's proposed plans for TAVO™-EP in neoadjuvant melanoma including draft trial designs, and the timing and anticipated achievement of future milestones are forward-looking statements that involve substantial risks and uncertainties and may not meet the Company's current estimates or expectations. Such risks and uncertainties include, among others, our limited working capital, history of losses, and ability to continue as a going concern; the success and timing of our clinical trials, including safety and efficacy of our product candidates; the ability to achieve the clinical and operational objectives; our ability to adhere to ongoing compliance requirements of all health authorities, in the U.S. and foreign countries; capital requirements and needs for additional financing; our ability to obtain additional funding; the ability of our product candidates to successfully perform and advance in clinical trials; our ability to obtain and maintain authorization from regulatory authorities for use of our product candidates for initiation and conduct of clinical trials; the performance of our clinical research organizations, clinical trial sponsors, and clinical trial investigators; and our ability to successfully implement our strategy. Please refer to the risk factors and other cautionary statements provided in the Company's Annual Report on Form 10-K for the fiscal year ended July 31, 2022 and any subsequent periodic and current reports filed with the SEC (each of which can be found at the SEC's website www.sec.gov.), as well as other factors described from time to time in the Company's filings with the SEC.

Awakening the immune system to eradicate cancer

TAVO™ Platform		• Proprietary TAVO™ electroporation platform to elicit **tumor-directed immune cell activation** by **stimulating the patient's immune system** without neoantigen delivery • **Intra-tumoral delivery of interleukin 12 plasmid** to cutaneous, subcutaneous and nodal lesions to induce **systemic immune response** and **long-term immune memory** • Mechanism of action offers **ideal combination for immune checkpoint modulators** that **reduce exhaustion of previously activated immune cells** • **Overcomes checkpoint resistance** with durable response
Clinical Programs		• **Clinical focus in neoadjuvant melanoma** aims to enhance efficacy of anti-PD-1 therapies by inducing new wave of immune effector cells to boost success rate of curative surgery • **Clinical activity and safety data** in more than 300 patients across indications
Investment Context		• **Pipeline focus** on neoadjuvant melanoma **allows cost-effective data generation to achieve next value inflection point** • **Reorganization to nimble organization** with reduced cash burn completed • **Strategic partnerships with global oncology leaders** (e.g., **Merck**) seek to enhance pipeline value and maximize future opportunities

OncoSec as a future leader of immuno-oncology therapy

Addressing unmet clinical needs by leveraging innovative intratumoral drug delivery

Vision

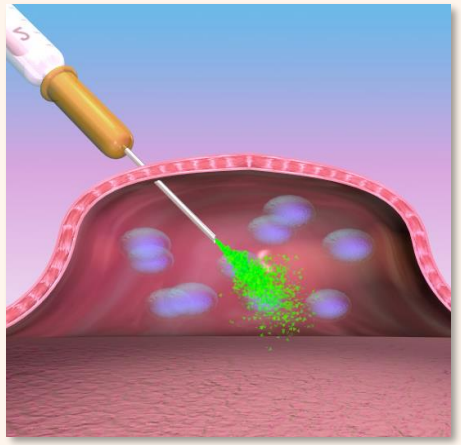
- We aspire to **awaken the immune system to eradicate cancer and restore patients' lives.**

Mission

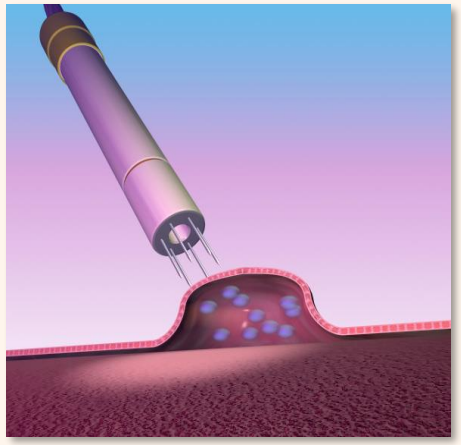
- **Provide safe and effective solutions for cancer patients** by identifying genuine unmet medical needs and developing novel, best-in-disease therapeutic approaches.
- **Build a cutting-edge, translational research engine** to start programs with the end in mind and develop innovative, first-in-class or best-in-class therapeutic assets.
- **Harness rapidly evolving knowledge** by capturing emerging scientific break-throughs and leveraging advanced technologies to deliver innovation with a sense of urgency.

TAVO™-EP platform designed to address key clinical unmet needs

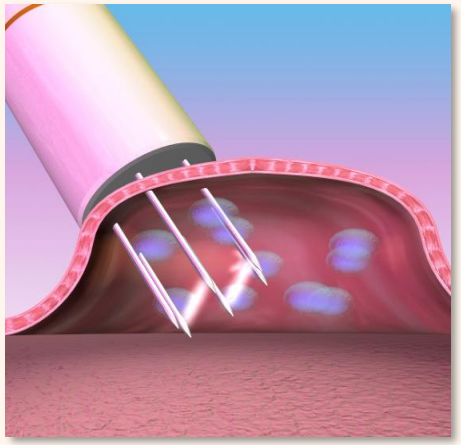
1 **Plasmid Injection**



2 **Electrode Insertion**



3 **Gene Delivery**



Total Process: ~30 Minutes

- Unique intratumoral delivery applicable to **cutaneous, subcutaneous, and nodal lesions**
- **Demonstrated clinical activity** for patients who have progressed on checkpoint inhibitors
- **Safe and well-tolerated** cytokine delivery elicits local and abscopal anti-tumor immune response
- **Simultaneous delivery** of multiple therapeutics to further enhance anti-tumor response
- **Highly scalable formulation** with low manufacturing costs

TAVO™: tavokinogene telseplasmid (interleukin 12 plasmid); EP: electroporation

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TAVO™-EP plus KEYTRUDA® - rationale for neoadjuvant melanoma

Going beyond immune checkpoint inhibitors and cancer vaccines,

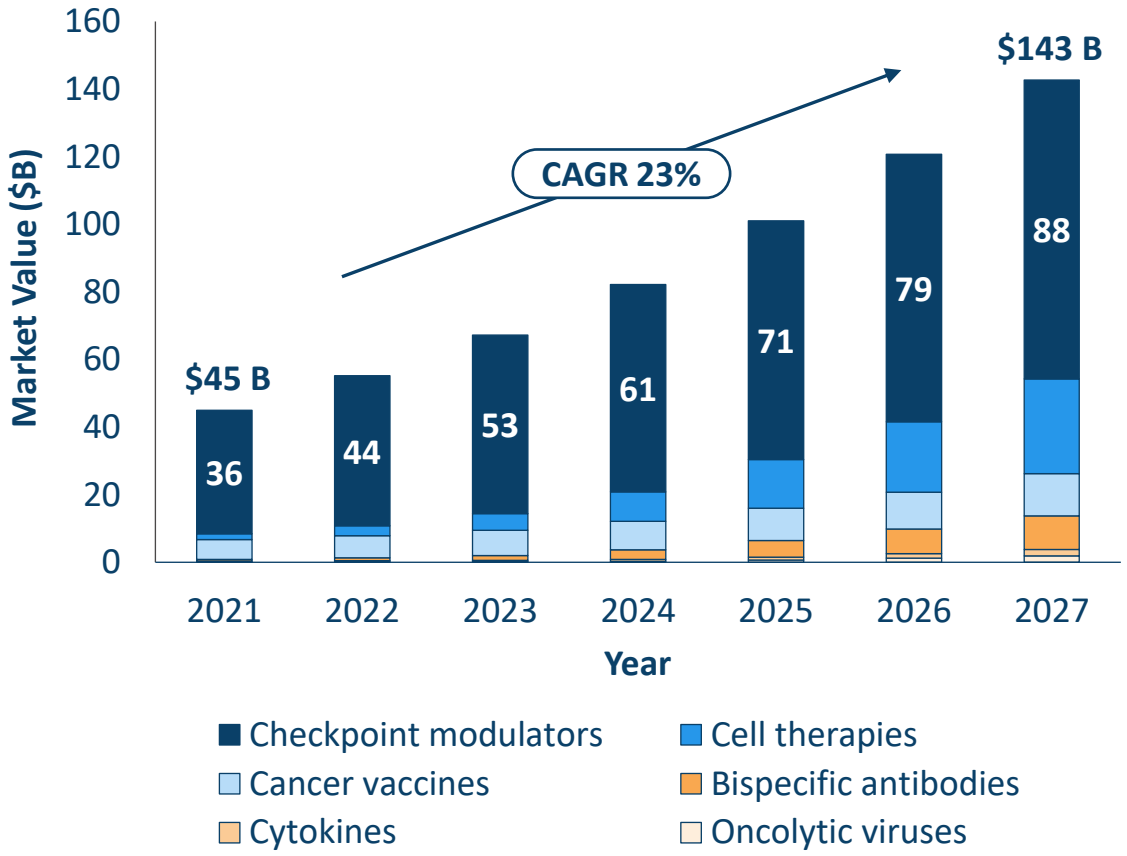
neoadjuvant melanoma represents promising option for patients with advanced melanoma[1]

- TAVO™-EP in the neoadjuvant setting offers a novel "**personalized off-the-shelf therapeutic approach"** that aims for effective targeting of the patients' tumor cells to eradicate cancer
- **TAVO™-EP induces cancer immunity**, without the need for individualized cancer antigens, by leveraging the patient's own tumor to stimulate immune effector cells and generate a broad T cell receptor repertoire
- TAVO™-EP in combination with KEYTRUDA® (pembrolizumab) has shown
  - clinical activity in melanoma patients resulting in prolonged survival
  - durable clinical response rates in immune checkpoint therapy refractory patients
  - good safety and tolerability profile with low incidence of Grade 3/4 and no Grade 5 TRAEs

[1]Stege et al. (2021) Target Oncol 16:537-552
TRAE: treatment-related adverse events

The IO market driven by checkpoint inhibitors is growing rapidly

Global Market Analysis and Forecast of Immuno-Oncology (IO) Approaches



- Immuno-oncology (IO) approaches have demonstrated **significant, durable response rates** in a **broad range of cancer types**
- In 2021, IO therapies captured **$45 B in market value** with a **CAGR of 23%** out to 2027
- **Immune checkpoint inhibitors** (ICI) are the largest and fastest growing segment valued to reach **$88 B by 2027**
- KEYTRUDA® (pembrolizumab, Merck) is the current ICI market leader; approved for ~38 indications with **~$21 B revenue in 2022**

Source: EvaluatePharma; GlobalData.
ICI: immune checkpoint inhibitor; IO: immuno-oncology

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Despite IO success, great unmet need remains in melanoma

Primary Resistance

Most patients receive PD-1 mono- or combination therapy in first line, yet 40 – 65% fail to respond[1]

Poor Stage IV Survival

5-year survival for Stage IV patients is only ~32%[3]

Secondary Resistance

Among initial PD-1 responders, ~40% acquire resistance and progress within 5 years[2]

Low ORR After PD-1 Therapy

Only ~10% of patients who fail PD-1 therapy respond when switched to CTLA-4 therapy[4]

1. Larkin et al. (2019) NEJM 381:1535-1546. 2. Zhou et al. (2021) Front. Immunol. 12:693609. 3. National Cancer Institute SEER. 4. Bowyer et al. (2016) Br J Cancer 114:1084–1089. IO: immuno-oncology.

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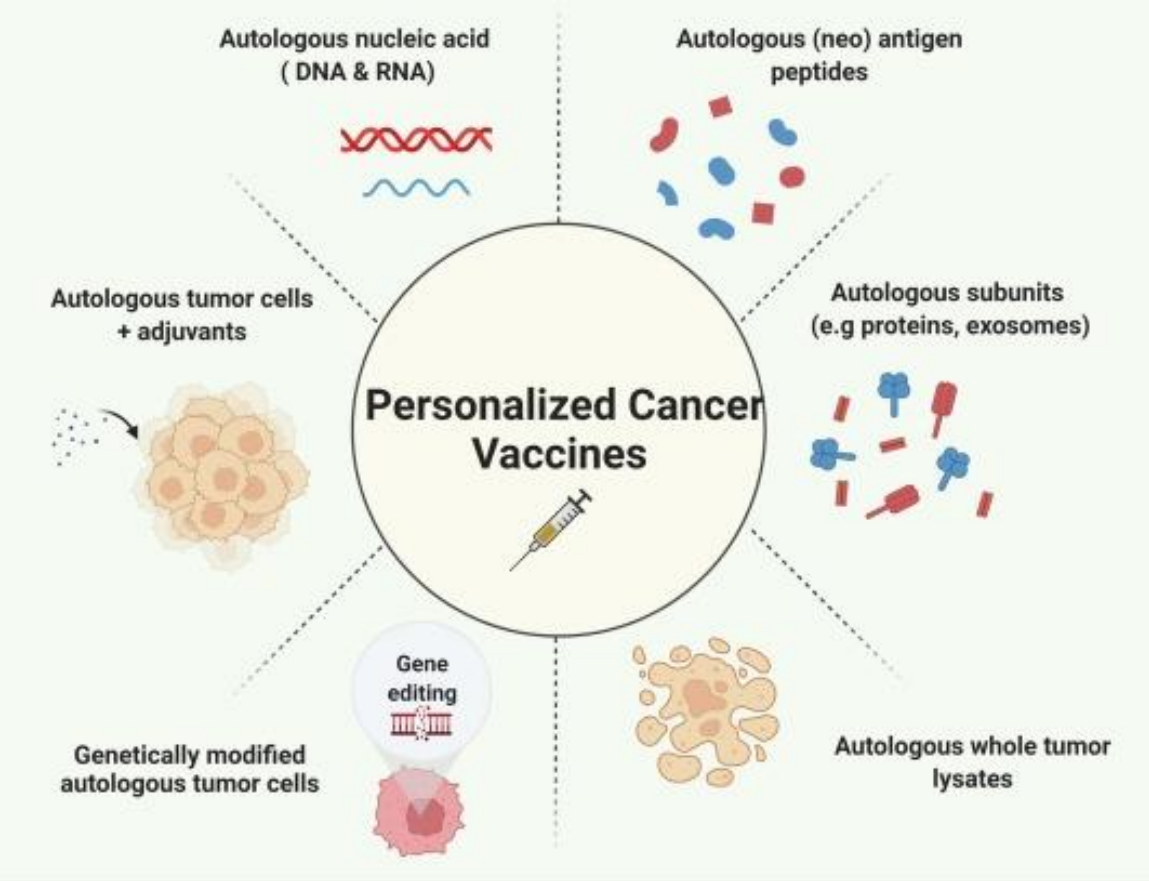
Cancer vaccines aim to induce cancer immunity to close ICI gap



- **Cancer vaccines induce cancer immunity** by educating immune effector cells to recognize **selected tumor neoantigens** or shared **tumor-associated antigens** provided as therapeutic modality

- Personalized vaccines deliver **autologous cancer antigens** to elicit anti-tumor responses and efficacy with a wider therapeutic window for patients

➢ **TAVO™-EP induces cancer immunity** by stimulating immune effector cells to recognize the **patients' own tumor antigens** to elicit a **tumor antigen-agnostic immune response** without need for individualized tumor antigens, i.e., **one step ahead of cancer vaccines**

Fritah et al. (2022) Cancer Treat Rev 106:102383, Liu et al. (2022) J Hematol Oncol 15:28, van Akkooi et al. (2023) Eur J Canc 182:38-42
ICI: immune checkpoint inhibitor

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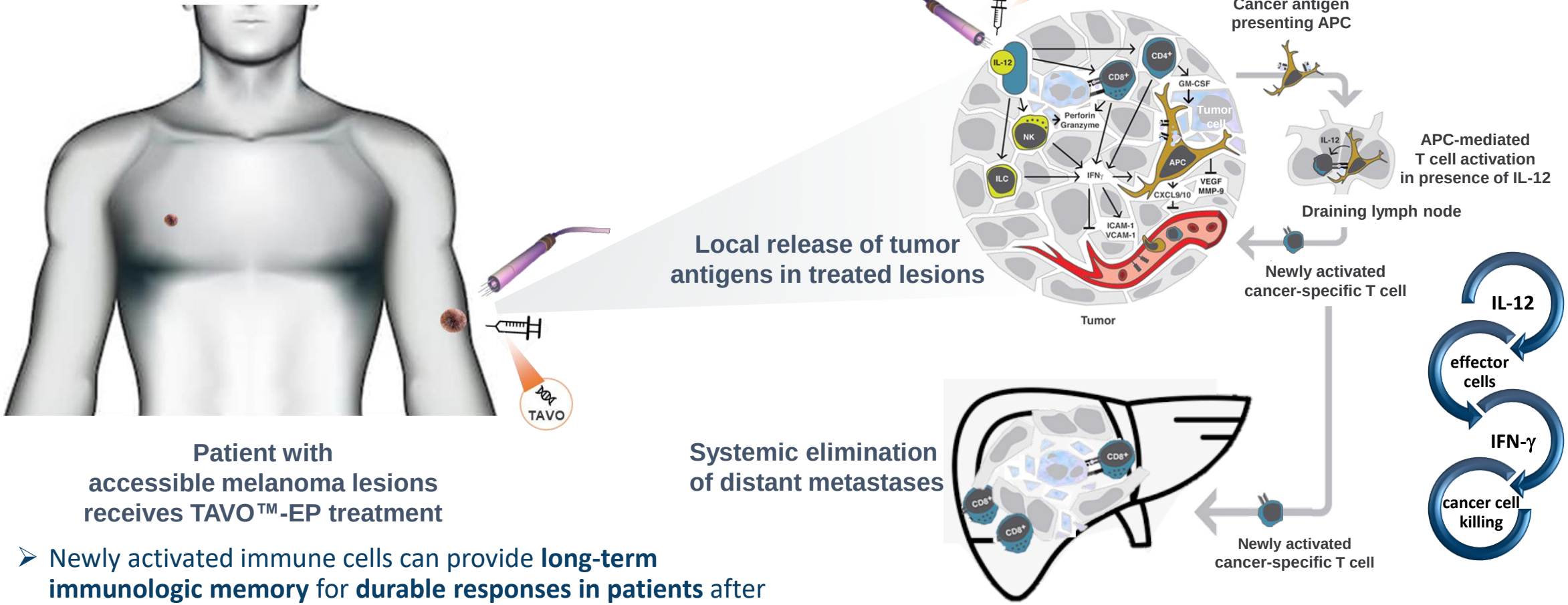
TAVO™-EP IL-12 *in situ* vaccination to awaken the immune system



- Newly activated immune cells can provide **long-term immunologic memory** for **durable responses in patients** after entering circulation and surveying tissues to **eradicate cancer**

Figure modified from Tugues et al. (2015) Cell Death and Differentiation 22:237-246
APC: antigen presenting cells, $CD8^+$: cytotoxic T cell; IL-12: interleukin 12, ILC: innate lymphoid cells, IFN-γ: interferon gamma, NK: natural killer cell

TAVO™-EP has substantial clinical activity and safety data

- TAVO™-EP has been studied in clinical trials as mono- and combination therapy
- TAVO™-EP was administered in most trials as 3 treatments per cycle in 6-week cycles
- TAVO™-EP has been administered to more than 230 melanoma patients and over 320 patients in total with an excellent safety and tolerability profile
- TAVO™-EP as monotherapy and in combination with anti-PD-1 therapy has shown clinical activity in patients refractory to treatment with immune checkpoint inhibitors

Sharpened focus on melanoma and potential in other tumor types

	Regimen	Trial	Indication	Partner	Phase 1	Phase 2	Pivotal
Key Focus	TAVO™ + Nivolumab	OMS-104 Phase 2 IST[1]	Neoadjuvant Resectable Locally / Regionally Advanced Melanoma	MOFFITT CANCER CENTER	*recruiting*		
Key Focus	TAVO™ + Pembrolizumab	Phase 2 RCT	Neoadjuvant Resectable Locally / Regionally Advanced Melanoma	MERCK		*FDA meeting, May 2023, trial start 2H23*	
Additional Programs	TAVO™ + Pembrolizumab	KEYNOTE-695[2]	Advanced Melanoma	MERCK[4]	*planning EOP2*		
Additional Programs	TAVO™ + Pembrolizumab	KEYNOTE-890[3]	Advanced Triple Negative Breast Cancer (TNBC)	MERCK[4]	*strategic pause*		

Partnering with global oncology leaders to overcome significant clinical unmet needs and maximize pipeline value

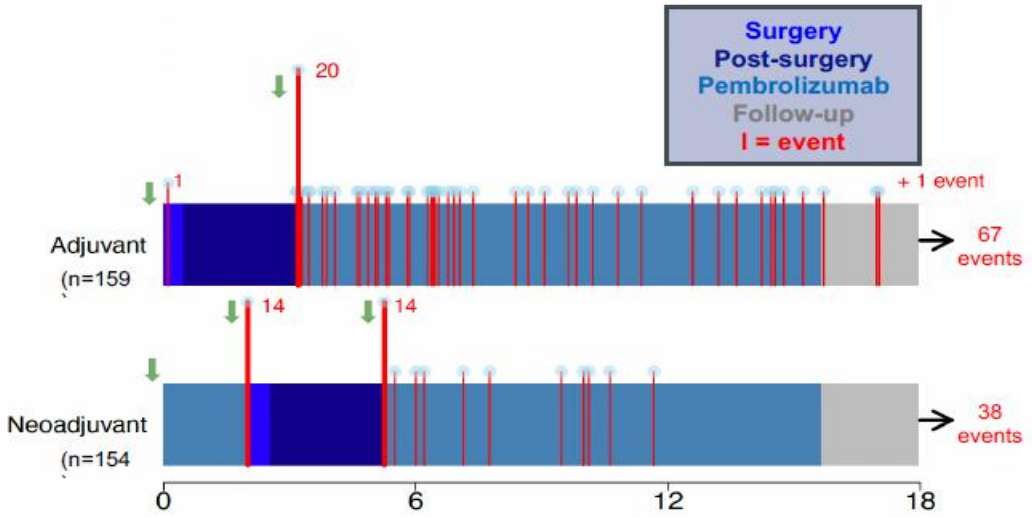
[1] neoadjuvant melanoma press release, [2] KN-695 press release,
[3] pipeline prioritization press release [4] Supply agreement partnership.
IST: investigator-sponsored trial, RCT: randomized controlled trial.

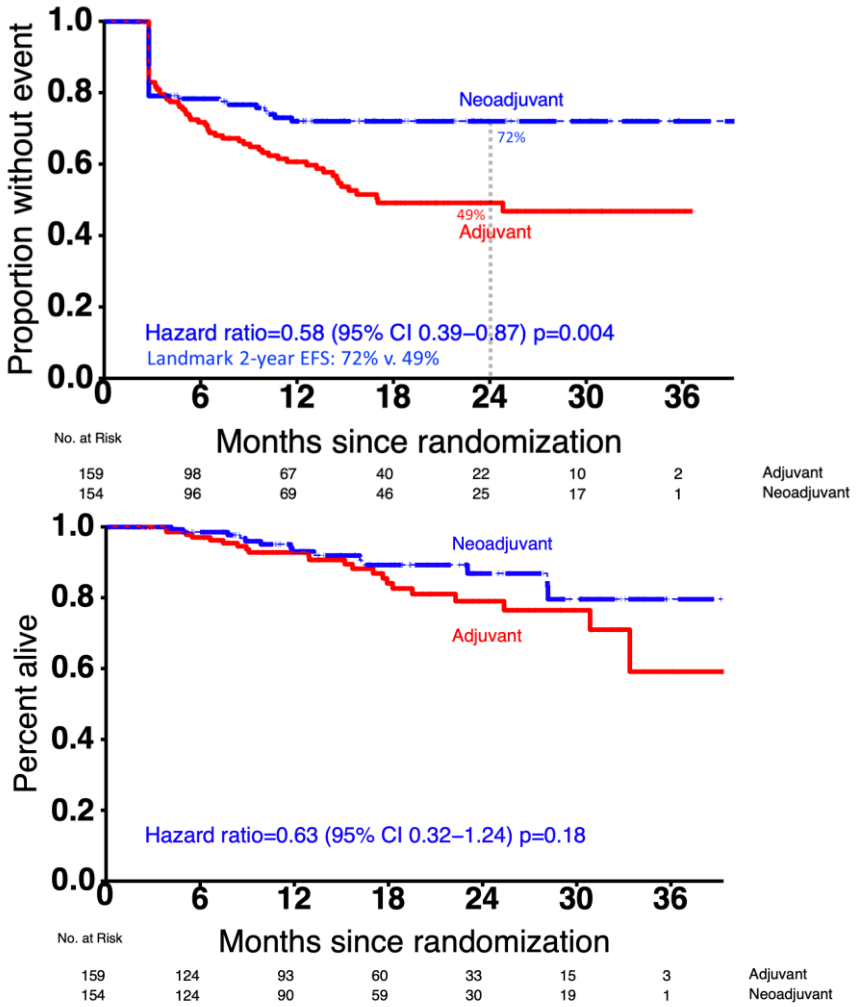
Neoadjuvant melanoma therapy is gaining traction…

Southwest Oncology Group (SWOG) trial S1801
Phase 2, n= 313

- Pembrolizumab monotherapy (200 mg IV, Q3W)
  - Neoadjuvant (3 doses) and adjuvant (15 doses) vs.
  - Adjuvant (18 doses)
- Primary endpoint EFS:
  - Landmark analysis at 2 years: 72% vs. 49%

  [Pathologic complete response (pCR) 21% (local review), decreased events in the neoadjuvant arm]



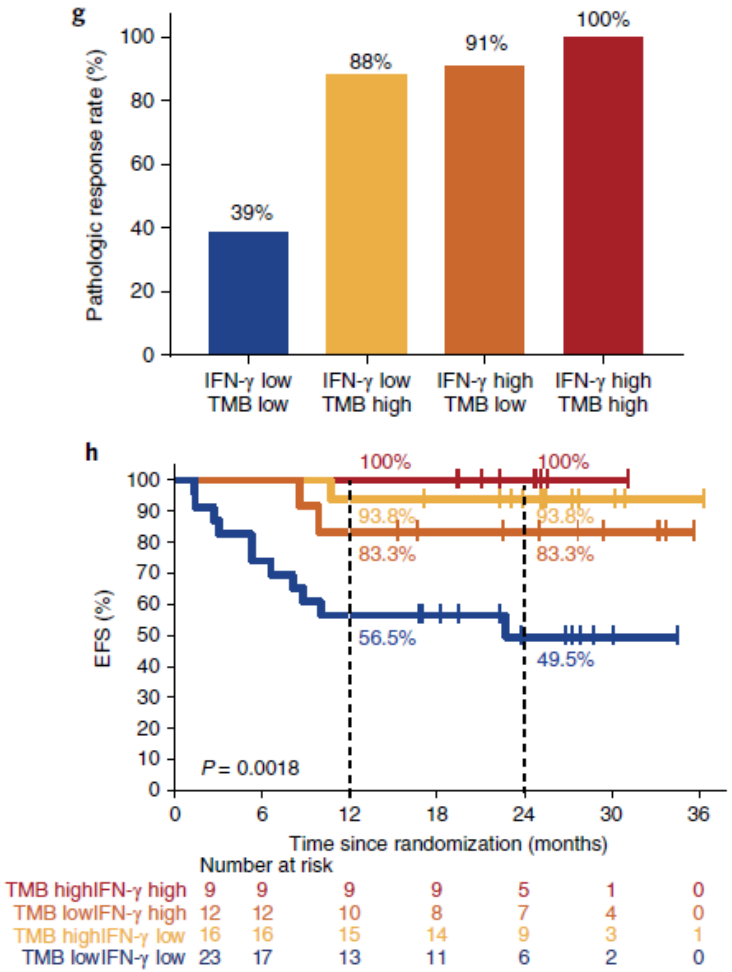


Patel et al. (2023) N Engl J Med 388:813-823.
EFS: event-free survival, IV: intravenous, Q3W: once every three weeks

…but not all patients benefit from neoadjuvant ICI combinations

OpACIN-neo trial (Phase 2, n=89)

- Ipilimumab plus nivolumab (various dose regimens)
- IFN-γ signature and tumor mutational burden (TMB) in baseline tumors predicted better clinical outcomes.
  - Patients with baseline IFN-γ^{high} and/or TMB^{high} had higher pRR compared to IFN-γ^{low} and TMB^{low} (88-100% vs. 39%) and low risk of relapse
  - Patients with IFN-γ^{high} and/or TMB^{high} compared to IFN-γ^{low} and TMB^{low} at baseline had improved 2-year EFS (83-100% vs. 50%)
- Grade 3-5 immune-related adverse events (irAEs) were observed in all dose regimens (27-54%) and more frequent high-grade AEs in female patients (51.4% vs. 32.7%)
  - almost all grade 3-4 irAEs resolved, but low-grade ongoing toxicities remained in substantial proportion



Blank et al. (2018) Nat Med. 24:1655-1661, Rozeman et al. (2019) Lancet Oncol 20:948-960. Rozeman et al. (2021) Nat Med. 27:256-263.

IFN-γ: interferon gamma, ipi: ipilimumab, IV: intravenous, nivo: nivolumab, Q3W: once every three weeks, pMR: pathologic major response, pNR: pathologic non-response, pRR: pathologic response rate, RFS: relapse-free survival, TMB: tumor mutational burden

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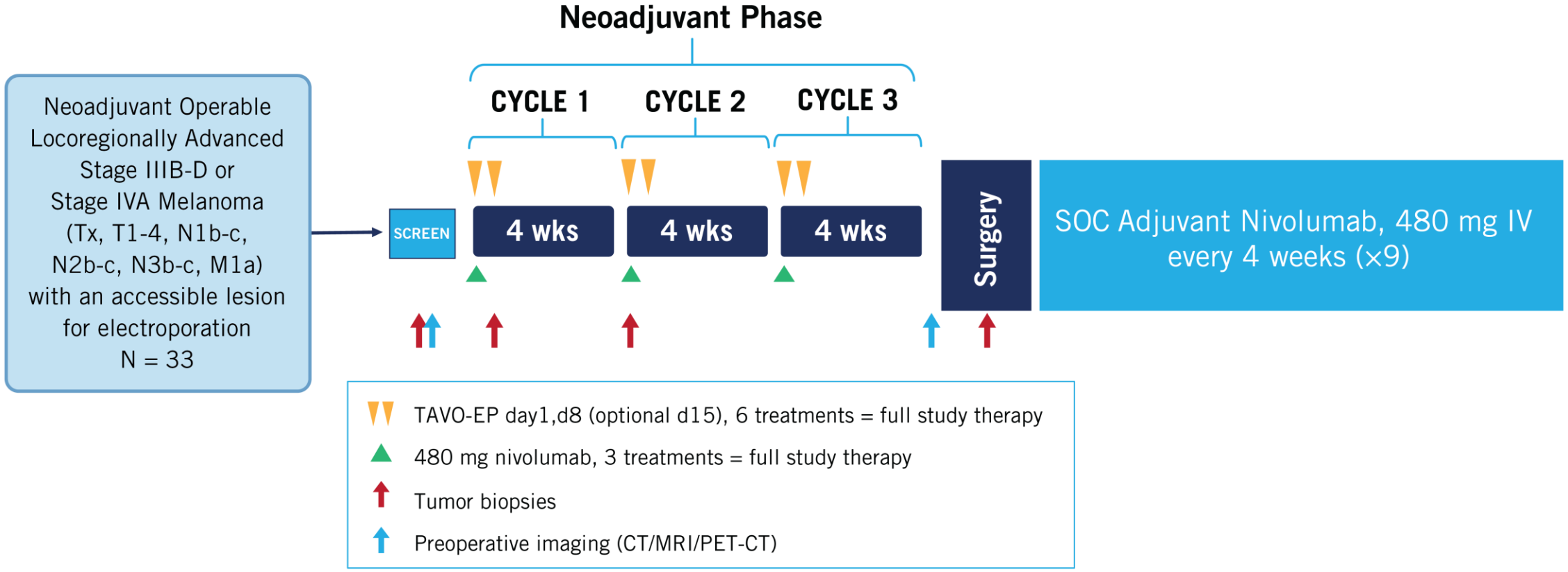
Neoadjuvant Immunotherapy with Intratumoral Tavokinogene Telseplasmid (TAVO) plus Electroporation (EP) in Combination with Intravenous Nivolumab in Patients with Operable Locoregionally Advanced Melanoma

[1]Ahmad A Tarhini, MD, PhD; [1]Zeynep Eroglu, MD; [1]Amod A Sarnaik, MD; [1]Jonathan S Zager, MD; [1]Ricardo J Gonzalez, MD; [1]Deanryan B De Aquino, BS; [1]Edith Abraham, APRN; [1]Justin Martin, MS; [1]Allison Richards, MS; [1]Yian Ann Chen, PhD; [1]Denise Kalos, MS; [2]Jessica Lloyd, BS; [2]Jonathan Hanna, MS; [2]Erica Browning, BA; [2]David A Canton, PhD; [1]Kenneth Y Tsai, MD, PhD; [1]Jane L Messina, MD; [1]Pei-Ling Chen, MD; [1]Vernon K Sondak, MD

[1]Moffitt Cancer Center, Tampa FL, US; [2]OncoSec Medical Incorporated, San Diego CA, USA

Neoadjuvant melanoma Phase 2 IST* design and endpoints



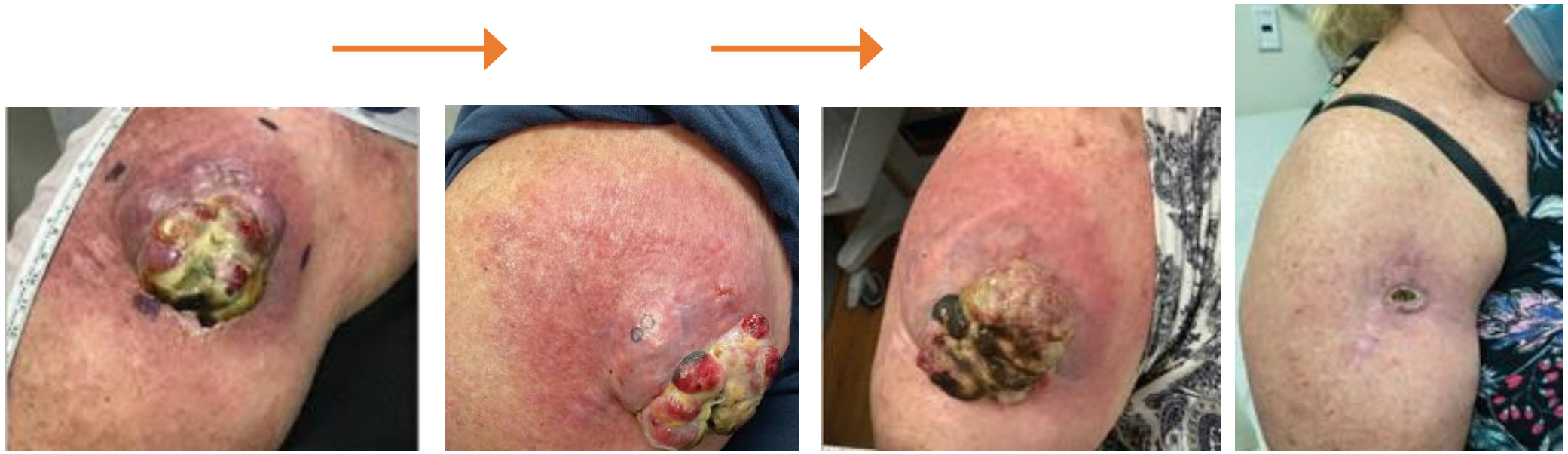
- **Primary Endpoint:** complete pathologic response (pCR) rate
- **Secondary Endpoints:** Near-complete (major) pathologic response (pMR), radiological/clinical preoperative response rate, relapse free survival (RFS) and overall survival (OS)
- **Exploratory Endpoints:** correlation tumor microenvironment changes (pre- and post-treatment) to clinical outcomes

*OMS-104 TAVO™-EP in combination with nivolumab;

IST: investigator-sponsored trial; pCR: pathologic complete response; pMR: pathologic major response; OS: overall survival; RFS: relapse-free survival;

Bulky tumors disappear with treatment

Day 1 (Cycle 1)	Day 8 (Cycle 1)	Day 28 (Cycle 2 Day 1)	Day 85 (right before surgery)



RECIST v1.1 CR
Pathologic CR

High pathological major response rate with TAVO™-EP + nivolumab

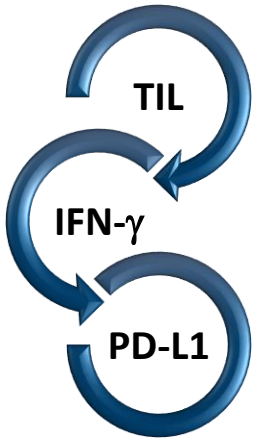
Patient #	Disease Stage	Baseline Tumor Biomarkers	No. of TAVO-EP Full treatment = 6-9*	No. of Nivo Cycles Full treatment = 3	Radiological Preoperative RECIST v1.1 Response†	Pathological Response‡
1	IV (M1a)	d/p	5	1	PD§	pNR
2	IIIC	[$CD8^+$TIL/PD-L1/TIS]^{hi}	9	3	CR	pCR
3	IV (M1a)	[$CD8^+$TIL/PD-L1/TIS]^{lo}	5	3	CR	pCR
4	IIIB	[$CD8^+$TIL/PD-L1/TIS]^{lo}	3	1	CR	pCR
5	IIIB	d/p	8	3	CR	pCR
6	IIIC	[$CD8^+$TIL/PD-L1]^{lo}	6	2	PR	Declined surgery¶
7	IIIC	d/p	7	3	PR	pMR
8	IIIB	[$CD8^+$TIL/PD-L1/TIS]^{lo}	4	3	PR	pCR
9	IIIB	$CD8^+TIL^{lo}$ [PD-L1/TIS]^{med}	6	3	SD	pCR
10	IIIB	d/p	9	3	SD	pMR
11	IIIC	d/p	On-going neo	On-going neo	On-going neo	On-going neo
12	IIIC	d/p	On-going neo	On-going neo	On-going neo	On-going neo

d/p = data pending

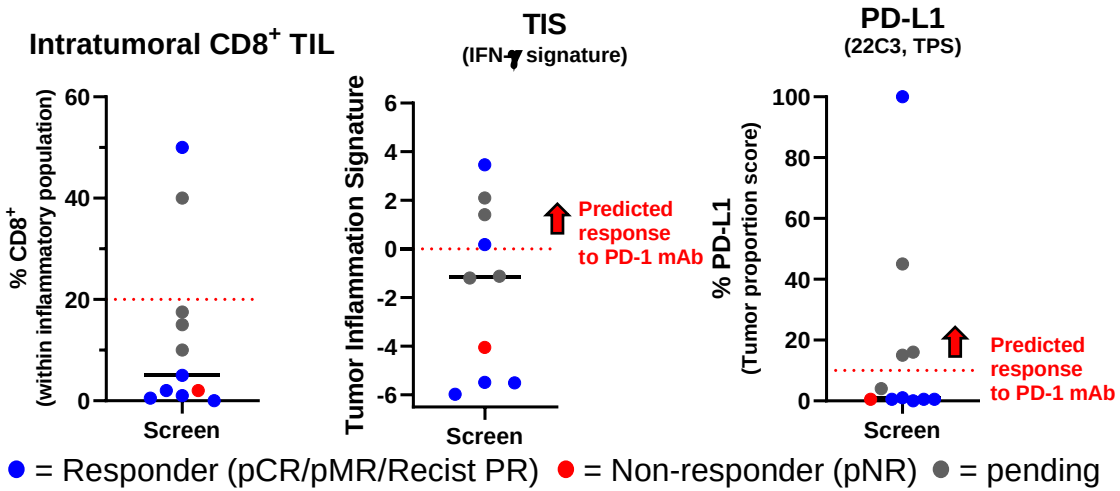
*optional day 15 treatment for TAVO™-EP; †Imaging 2-3 days prior to surgery; ‡pathological major response (pMR) <10% viable tumor, pathological complete response (pCR) no viable tumor after definitive surgery; §patient #1 with pathological non-response (pNR) had distant metastasis found on scan (outside of baseline imaging) during neoadjuvant phase; ¶patient #6 refused surgery due to near complete response of disease.

TAVO™-EP Phase 2 neoadjuvant IST: predictive biomarkers

- **Tumor infiltrating lymphocytes (TIL)** are essential for anti-tumor immune responses by producing cytokines that promote anti-tumor immunity and mediating apoptosis of cancer cells
- **Interferon gamma (IFN-γ)** is a crucial effector cytokine produced by TIL that stimulates anti-tumor responses of immune effector cells such as cytotoxic T cells
- **Programmed cell death protein-ligand 1 (PD-L1)** expression is induced by IFN-γ and impairs anti-tumor responses after engaging its receptor PD-1 as one critical immune checkpoint



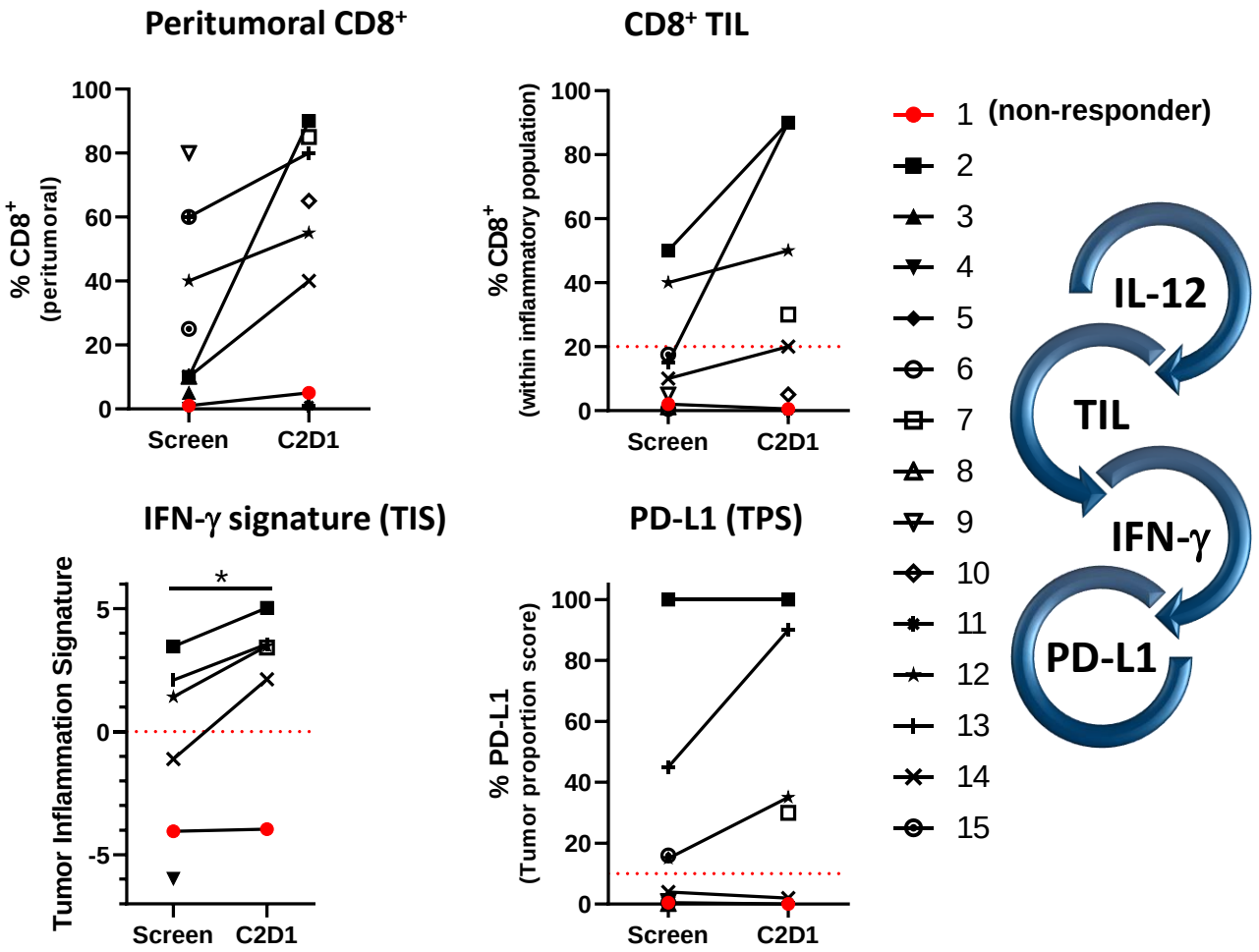
Baseline biomarkers predicting no or limited responses to anti-PD-1 mAb in majority of patients



At baseline, in 9/11 patients <20% of cells in tumor lesions are tumor infiltrating CD8+ T cells (TIL); 6/10 patients have a tumor inflammation signature (TIS) score of ≤0 and 7/11 have <10% PD-L1 tumor proportional score (TPS). Color coding indicates observations.

PD-L1: programmed cell death protein-ligand 1; TIL: tumor infiltrating lymphocytes, TIS: tumor inflammation signature; TPS: tumor promotion score

Inflammatory biomarker changes as early signs of clinical activity



Predictive biomarker signals change with treatment

Enrolled patients (n=15);
evaluable baseline and on-treatment tissue (n=5):

- 5/5 peritumoral CD8+ T cells ↑
- 4/5 CD8+ TIL ↑
- 4/5 TIS (NanoString) ↑
- 2/5 PD-L1 ↑

Non-responder (n=1) vs. responders (n=4)

- peritumoral CD8+ T cells <5% vs. >30%
- CD8+ TIL <5% vs. 10-90%
- TIS <-3 vs. 2-5
- PD-L1 <1% vs. 10-100%

IL-12: interleukin 12; IFN-γ: interferon gamma PD-L1: programmed cell death protein-ligand 1; R: responder; TIL: tumor infiltrating lymphocyte; TIS: tumor inflammation score; TME: tumor microenvironment; TPS: tumor proportional score

Summary of TAVO™-EP Phase 2 IST* in neoadjuvant melanoma

- Intratumoral TAVO™-EP in combination with nivolumab in neoadjuvant melanoma exhibits encouraging clinical activity and a favorable safety profile
  - Pathologic complete response (pCR) rate 66.7% and pathologic major response (pMR) rate 88.9%
    - SWOG S1801 (pembrolizumab) 21% pCR (local review)
    - OpACIN-neo (ipilimumab/nivolumab) 57% pCR (Cohort B, selected dose) and 39% pRR in IFN-γ^{low}
  - No disease recurrence to date, with median follow up from surgery of 7 months (range 0.2–17.5).
  - No patient discontinued treatment due to toxicity
- All four patients with negative predictive markers for tumor response had pCRs
  - On-treatment tumor and systemic immune activation were observed
  - Additional biomarker analyses are underway
- The trial has met the prespecified efficacy criteria to pass stage 1 of the Simon's-2 stage design and is proceeding to enrolling additional patients to complete stage 2

*OMS-104 TAVO™-EP in combination with nivolumab;
IFN-γ: interferon gamma; IST: investigator sponsored trial; pCR: pathologic complete response; pMR: pathologic major response; pRR: pathologic response rate

TAVO™-EP melanoma neoadjuvant summary

Challenges

- ICI followed by surgery is not approved but may become SOC
- Ipi/nivo has ~50% pathological complete response rate (pCR), but high toxicity, including chronic immune-mediated events
- pCR is not an approvable end point; however, mounting evidence shows correlation with EFS and RFS; EFS is currently being used in Ph 3 study by BMS
- Supportive dataset (high pCR) in ongoing TAVO™-EP Phase 2 IST* in ten subjects; enrollment ongoing (target n=33)

Opportunities

- Currently no approved therapies
- Patients start with accessible disease
- Data from neoadjuvant clinical trials show that pCR correlates with long-term benefit, i.e., EFS and RFS at 2 years
- Determine efficacy in a Phase 2 trial with pCR and biomarker endpoints followed by RFS or EFS in Phase 3 to demonstrate clinical benefit with TAVO™-EP.

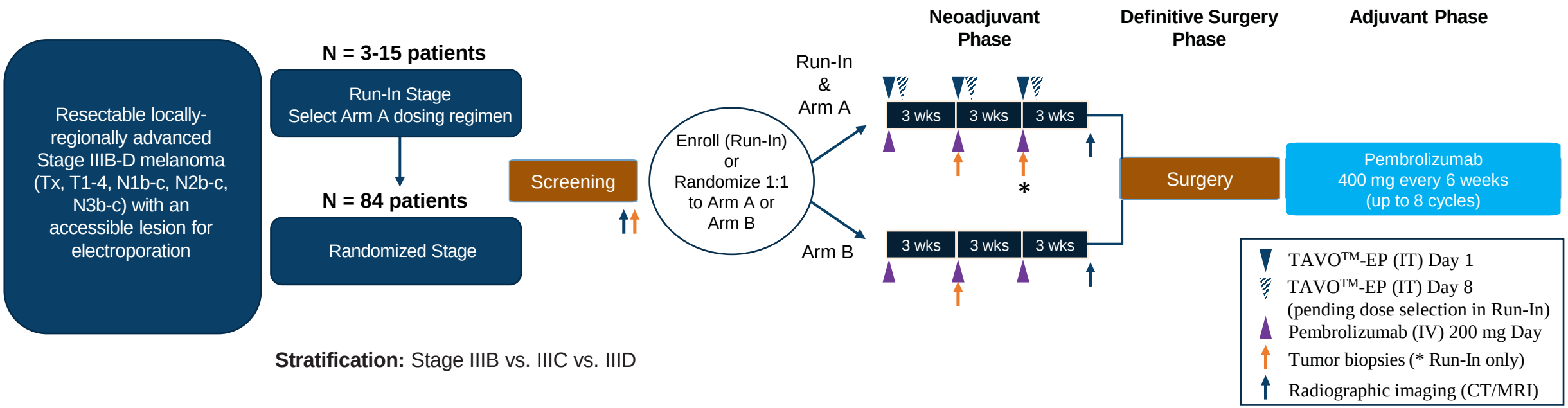
Proposed path forward

- Pursue neoadjuvant setting in melanoma as potentially "game changing opportunity"; supported by data in 10 subjects, 6 of 9** evaluable patients (66.7% vs. historical ~35% on SOC) had a pCR after 3 cycles** (D1/D8/D15, Q4W) and an additional 2 patients had a pathological major response (pMR), for a total 88.9% pMR rate, including the pCRs
- Discussions are ongoing with Merck for a Phase 2 randomized trial plan to validate efficacy and safety of TAVO™-EP in combination with KEYTRUDA® in the neoadjuvant melanoma setting.
- Discuss neoadjuvant data and Phase 2 protocol design with FDA at scheduled meeting in May 2023

*OMS-104 TAVO™-EP in combination with nivolumab; ** One patient declined surgery due to observed clinical response; BMS: Bristol-Myers Squibb, EFS: event-free survival; FDA: food and drug administration; ICI: immune checkpoint inhibitor; RFS: relapse-free survival; pCR: complete pathologic response; pMR; major pathologic response; RFS: relapse-free survival; SOC: standard of care

OncoSec neoadjuvant melanoma Phase 2 randomized trial design

Pembrolizumab ± TAVO™-EP



Stratification: Stage IIIB vs. IIIC vs. IIID

CT: computed tomography scan; IT: intratumoral; IV: intravenous,
MRI: magnetic resonance imaging;

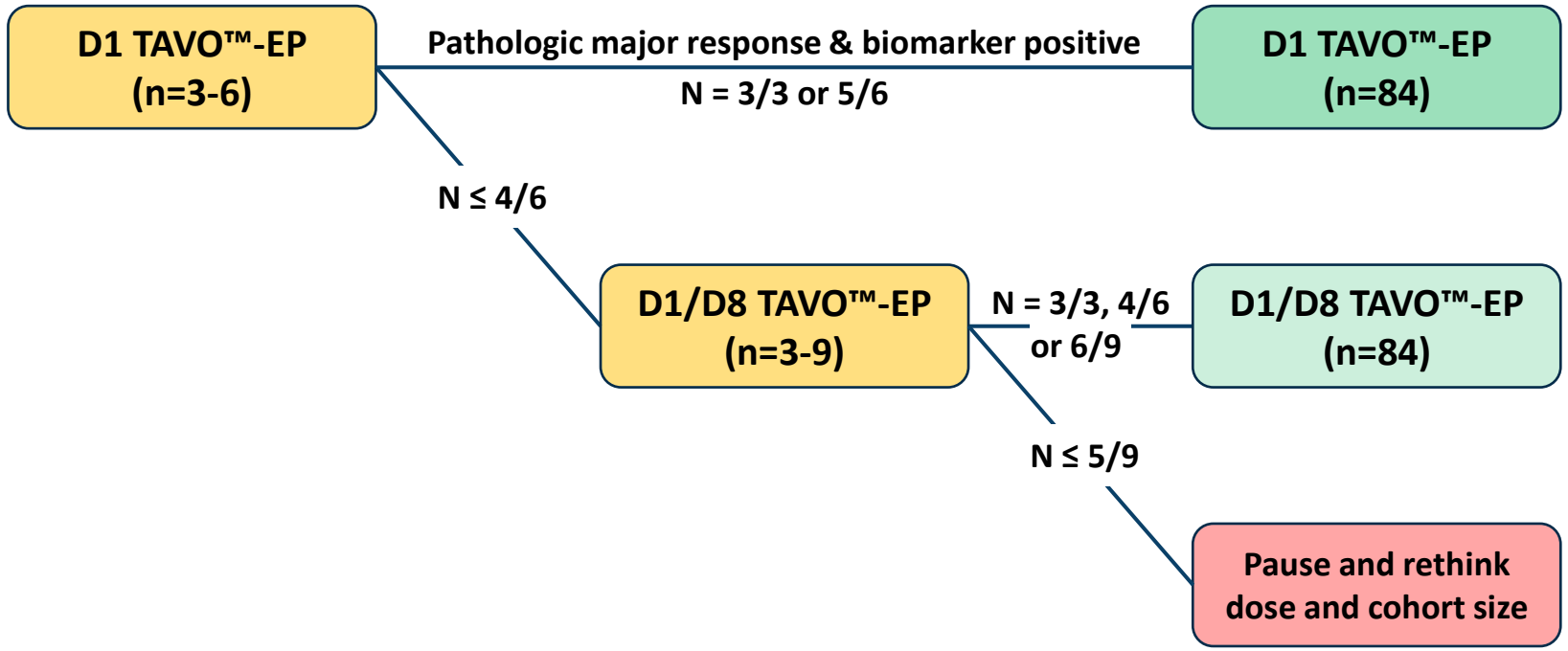
Run-In Design to assess TAVO™-EP dosing regimen for Ph2 RCT

PLANNING & FDA MEETING
1H2023

- Ad Board meetings **April 2023**
- FDA meeting to discuss **May 2023**
  - Study design
  - Accelerated approval path
- CRO engagement **2-3Q23**
- Trial (run-in stage) start **4Q23**
  - Stage-up to randomization as early as 4 months after study start with interim data for decision making regarding dosing
  - Early signs of clinical efficacy read-out to mitigate risk for stage-up
- Five-year study with interim readout after year 1 (run-in stage) -- pending FDA discussion and feedback
- Start randomization (two-arm RCT)**2024**

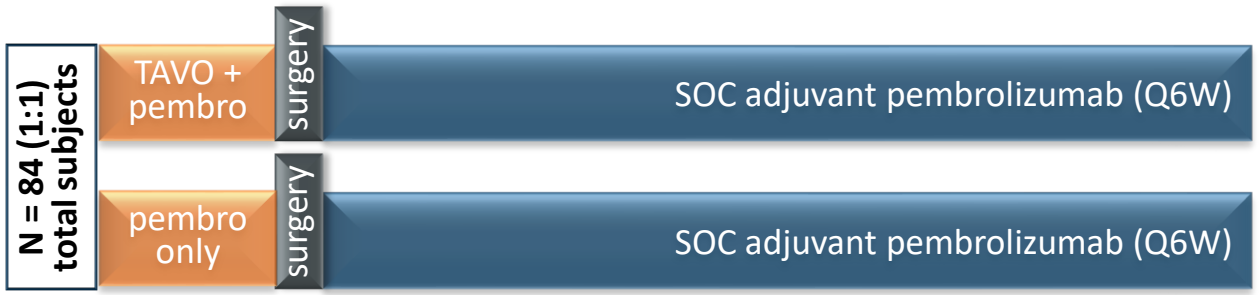
RUN-IN STAGE
4-10 months to interim data read-out

RANDOMIZATION
5 years



TAVO™-EP Phase 2 neoadjuvant melanoma trial (draft design)

Key eligibility criteria:	Resectable stage III (B-D), accessible for electroporation
Stratification factors:	Stage IIIB vs. IIIC vs. IIID
Treatment:	TAVO™-EP D1 & D8 Q3W for 2 or 3 cycles Pembrolizumab 200 mg IV Q3W
Run-in stage:	Determine optimal TAVO™-EP regimen
Endpoints:	Primary: pCR Secondary: EFS/RFS, OS, DMFS, R0-R2



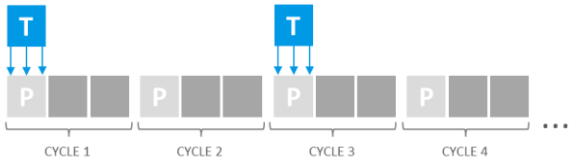
pathological and biomarker responses during run-in stage; data driven go/no go decision

Primary endpoint: pathological complete response (pCR)

Key secondary endpoint: 2-year event-free survival (EFS)

EFS: event-free survival; IV: intravenous; OS: overall survival; pCR: pathologic complete response; Q3W: once every three weeks, Q6W: once every six weeks; R0-R2: surgical resection rates; RFS: relapse-free survival; SOC: standard of care

KEYNOTE-695 Phase 2 in PD-1 refractory melanoma overview



TAVO + pembrolizumab | Survival Follow-up

Cohort 1a: post-anti-PD-1 treatment **(MedPulser device)**
- Completed enrolled N=105 (target N=100); LPI Dec 2020

Cohort 1b: post-anti-PD-1 treatment **(Next Gen Device/GenPulse)**
- Closed for strategic reasons in July 2022; Enrolled N=11 (target N=25)

Cohort 2: post-ipilimumab exposure **(MedPulser device)**
- Enrolling, currently at N=9 (target N=27)
- New high unmet need

Key eligibility criteria:	Patients with advanced melanoma and documented confirmed progression on immediate prior anti-PD-1 antibody therapy
Treatment:	TAVO™-EP Days 1, 5, 8 Q6W Pembrolizumab IV 200 mg Day 1 Q3W
Endpoints:	Primary: ORR (BICR) Secondary: ORR (investigator), PFS, OS, DOR

Key Eligibility

- Stage III/IV melanoma, target N = 152, ~30 global sites
- ≥12 weeks of anti-PD-1 therapy, with documented disease progression within 12 weeks of last dose
- No intervening therapies between checkpoint failure and trial enrollment

Treatment

- Intra-tumoral TAVO™-EP every 6 weeks with IV KEYTRUDA® every 3 weeks, for 18 and 35 cycles, respectively

Efficacy

- Primary Endpoint: ORR based on RECIST v1.1 (time: 2 years)
- Success Measures: ORR ≥17% (N=100)
- Secondary Endpoints:

  Overall response rate (ORR), durable response rate (DOR), Progression-free survival (PFS), Immune PFS, Immune ORR, Overall survival (OS)

BICR: blinded independent central review, EP: electroporation, DOR: duration of response, IV: intravenous, LPI: last patient in, ORR: objective response rate, OS: overall survival, PFS: progression free survival; Q3W: once every three weeks, Q6W: once every six

KEYNOTE-695 Phase 2: Cohort 1a BICR summary

- **The primary endpoint of KEYNOTE-695, overall response rate (ORR) by blinded independent central review (BICR), was not met. BICR ORR[1] of 10.2% (95% CI 5.00, 17.97%), including 4 CR and 6 PR, did not achieve the predefined clinically meaningful response rate of ≥17%.**
- **Treatment of patients with advanced melanoma did result in clinical activity**
  - Abscopal effects in visceral lesions as result of systemic immune response
  - Durable responses rate at ≥24 weeks by BICR 8.2%
  - Progression-free survival at 12 months by BICR 15.0%
  - Median overall survival 22.7 months
- **TAVO™-EP + pembrolizumab was well tolerated with a favorable safety profile**
  - No grade 4 or 5 TRAEs. Grade 3 TRAEs were observed in 8.6% of patients.
- **The Company is evaluating the differences between KEYNOTE-695 BICR results and 18.8% ORR (95% CI 11.7, 27.8) with TAVO™-EP + pembrolizumab by investigator assessment as key secondary endpoint of the trial that suggested that intratumoral IL-12 provides a critical immune stimulus that has the potential to reverse tumor resistance to prior anti-PD-1 therapy.**

[1] all ORR data shown are RECIST v1.1 confirmed responses
ORR: overall response rate; CR: complete response; CI: confidence interval;
PR: partial response; TRAE: treatment-related adverse events

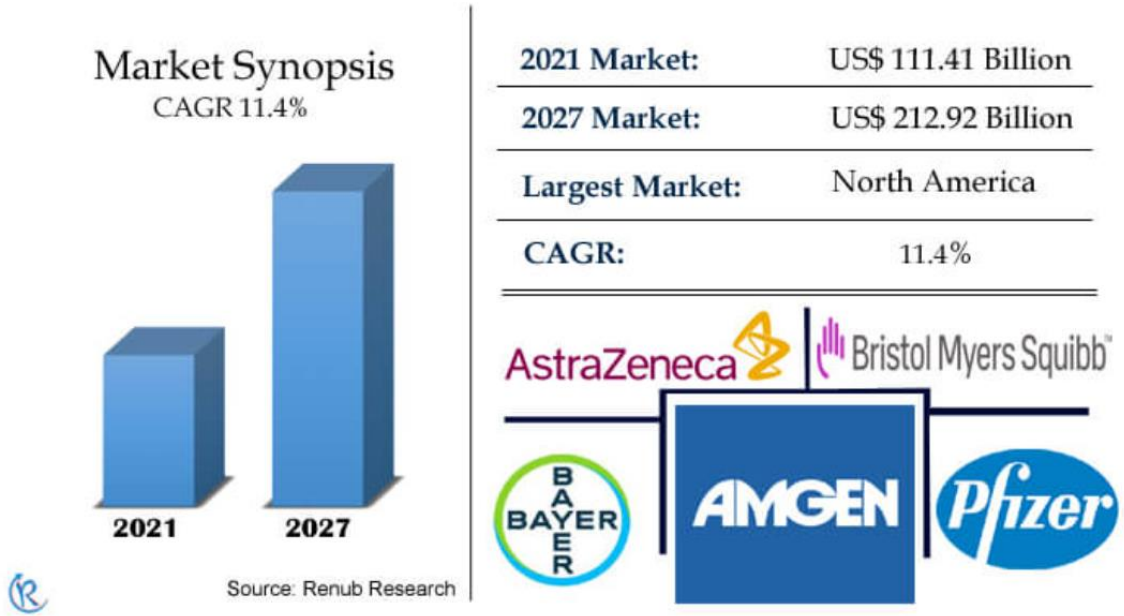
TAVO™-EP 2023 milestones

- Discussions with Regulatory Agencies regarding melanoma neoadjuvant [May 2023]
- TAVO™-EP Phase 2 RCT in neoadjuvant melanoma initiation [4Q2023]
- TAVO™-EP Phase 2 IST in neoadjuvant melanoma data update at upcoming medical meeting [4Q2023]
- Discussions with Regulatory Agencies regarding refractory melanoma and BICR results [2H2023]
- KEYNOTE-695 Phase 2 data presentation at upcoming medical meeting [4Q2023]

BICR: blinded independent central review; IST: investigator sponsored trial;
RCT: randomized controlled trial

Global intratumoral cancer therapy market growth

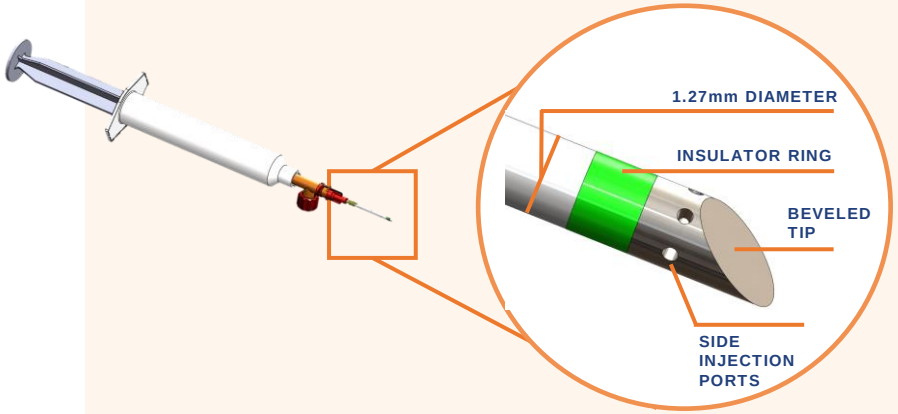
- **Several independent studies show that the intratumoral cancer therapy market grows rapidly**
  - monoclonal antibodies, vaccines, checkpoint Inhibitors, cell therapies, immune system modulators, adoptive cell transfer, **cytokines**, and others (left panel)[1]
  - intratumoral therapy is used to treat various cancer applications; lung cancer is currently the most attractive market opportunity (right panel)[2]



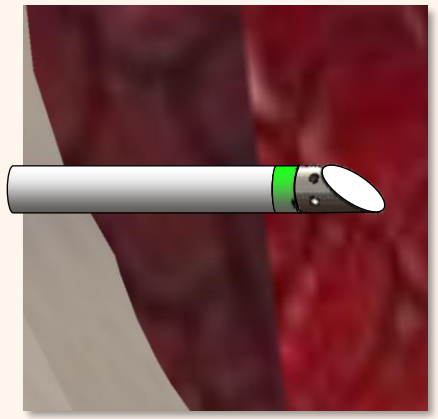
1.Global Intratumoral Cancer Therapy Market, Size, Forecast 2022-2027, Industry Trends, Growth, Impact of COVID-19, Company Analysis
2. https://www.delveinsight.com/blog/intratumoral-cancer-therapy-market

OncoSec beyond TAVO™-EP: Visceral Lesion Applicator (VLA)

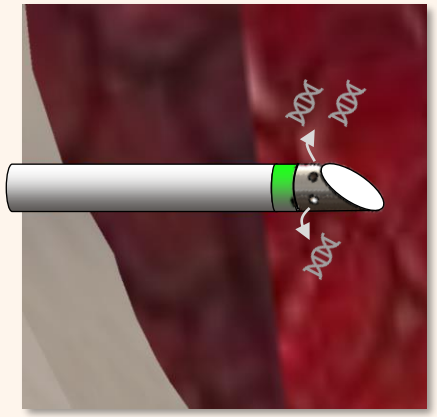
VLA (preclinical prototype)



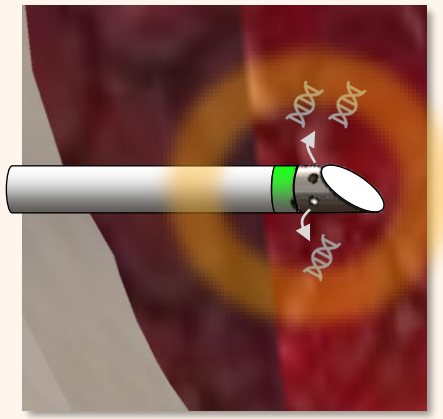
1 Organ Entry



2 Plasmid Injection



3 Gene Delivery



- Applicable to **solid tumors located deep inside the body** through our unique **intra-tumoral delivery**, with potential for improved anti-tumor efficacy due to **abscopal effect**
- Capable of delivering a **cocktail of therapeutics** in a single injection; **safe and well-tolerated** due to **no systemic exposure** of payload
- Highly scalable with **low manufacturing costs**

Investment opportunity

Differentiated Intra-tumoral Platform

TAVO™ designed to overcome key immuno-therapy shortcomings, with improved safety, efficacy, and durability

Best-in-class Therapeutic Potential

Neoadjuvant Melanoma with encouraging preliminary efficacy data

Robust Development Strategy

Experienced management team and key strategic partnerships designed to maximize pipeline value

Experienced industry leaders with track record of success

Leadership Team

Robert H. Arch, Ph.D
President and
Chief Executive Officer

Bridget O'Keeffe, Ph.D
Vice President,
Clinical Development

David Canton, Ph.D
Vice President,
Research

George Chi
Chief Financial Officer

Robert J. DelAversano, CPA
Vice President
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Jeff Silverman
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Kevin R. Smith
Director
Chao Zhou
Director

Clinical Advisor

Alain Algazi, M.D., Prof. UCSF

THANK YOU!