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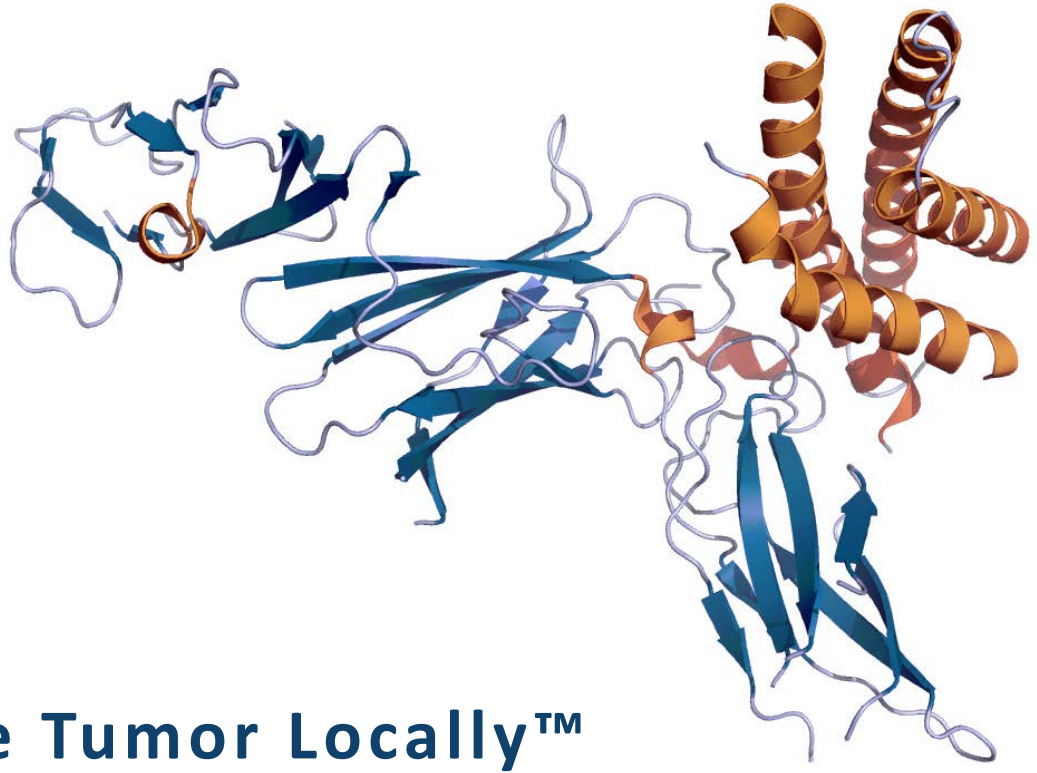

Targeting the Tumor Locally™

April 2018 | NASDAQ:ONCS

Cautionary Note Regarding 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.

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Converting immunologically “cold” tumors to immunologically “hot” tumors through the intratumoral administration of interleukin-12 (IL-12)

Improving Checkpoint Inhibitors (CPIs) by Converting "Cold" Tumors to "Hot" Tumor with IL-12

CHECKPOINT INHIBITORS (CPIs)

- Specific immune cells called "Cytotoxic T Lymphocytes" (CTLs) can destroy cancer cells
- Tumors produce "immune checkpoint proteins" that suppress the activity of CTLs and prevent them from performing their cancer-fighting role
- "Checkpoint inhibitors" or "CPIs" block the suppression of CTLs

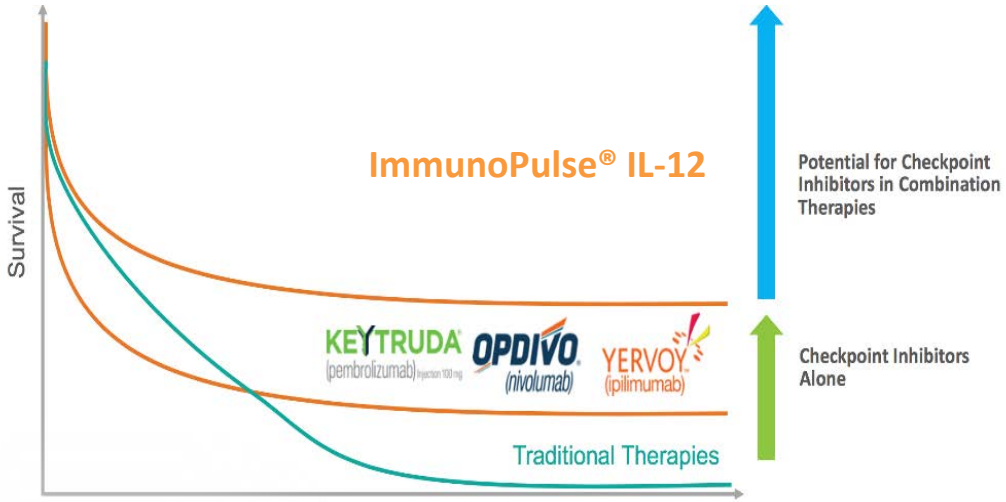
INTRATUMORAL IL-12

- IL-12 is a potent pro-inflammatory cytokine that promotes activation of CTLs
- IL-12, when administered directly into the tumor, is able to increase frequency of anti-tumor CTLs – thereby making the tumor "hot"
- The anti-tumor activity of CPIs is with greater with intratumoral CTLs

While CPI's help many cancer patients, the majority of patients with cancer do not benefit from CPIs because their tumors are immunologically "cold," or lacking immune cells, including CTLs

Between 60-90% of Patients Have No Anti-PD-1 Response

Checkpoint inhibitors dramatically increase survival in patients with **HOT** tumors but is largely ineffective in **COLD** tumors



Tumor Type	% Non-Responders
Melanoma	~60-80%
Triple Negative Breast	~95%[1]
Renal Cell Carcinoma	~71%[2]
Lung Carcinoma	~79-83%[2]
Head and Neck	~68-86%[3,4]
Bladder	~85%[5]
Gastric	~80%[6]

[1] ASCO 2017, KEYNOTE-086 Study; [2] Awad and Hammerman, JCO 2015; [3] Ferris et al., N Engl J Med. 2016; [4] Seiwert et al., Lancet Oncol. 2016; [5] Rosenburg et al., Lancet 2016; [6] Muro et al., Lancet Oncl. 2016

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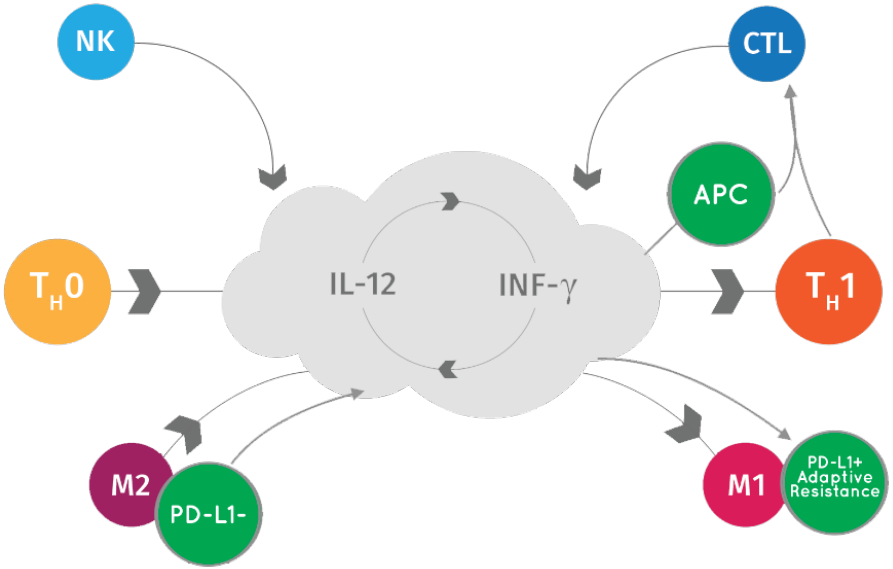
Intratumoral Administration Interleukin-12 (IL-12):
Tavokinogene Telseplasmid or "TAVO" encodes IL-12

- Potent, well-characterized proinflammatory cytokine
- Shown to make the tumor microenvironment (TME) immunogenic
- Locally targets innate cells allowing for productive Th1 adaptive immune responses
- Safer, local delivery with "systemic" benefits
- Local immune activation without observed systemic IL-12 toxicity
- Drives adaptive resistance in the tumor



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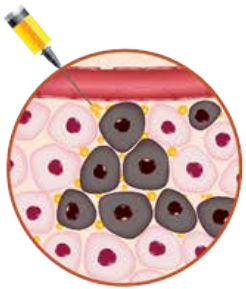
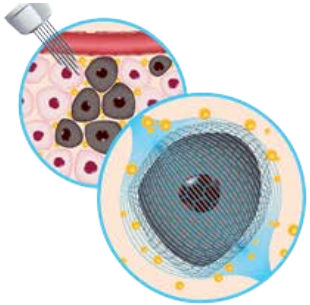
ImmunoPulse® Electroporation Platform
Designed to Boost the Immune System to Recognize and Attack Tumors



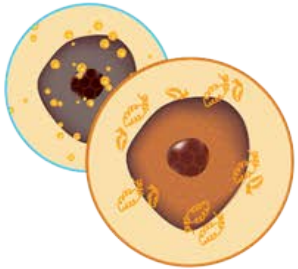
1

Billions of IL-12 coded DNA plasmids to produce immune modulatory proteins are injected directly into the tumor



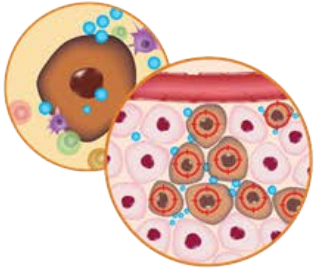
2

Intratumoral electroporation increases the permeability of cell membranes, facilitating uptake (“transfection”) of IL-12 coded DNA plasmids into cells



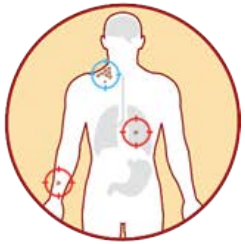
3

IL-12 transfected cells express and secrete IL-12 into the tumor microenvironment (TME)



4

IL-12 expression in the TME enhances immunomodulatory molecules to promote local tumor inflammation



5

IL-12 expression in the TME endues systemic immune activation and T-cell education for a systemic anti-tumor immune response

Interleukin-12 (IL-12) is a potent, well-characterized pro-inflammatory cytokine

Intratumoral delivery of IL-12 may stimulate a safe but powerful systemic immune response

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Intratumoral Delivery of IL-12
Followed by Electroporation, Increasing Cell Permeability

PULSE GENERATOR

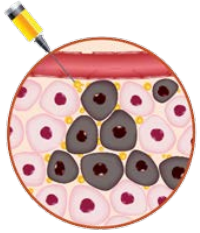
Pulse Generator

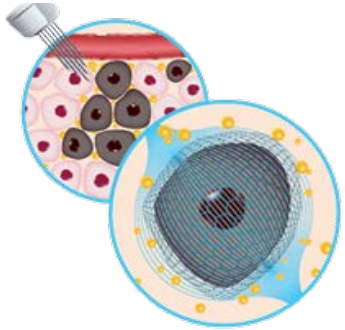
- 6 electrical pulses, 100 µsec duration and 300 millsec interval
- Fixed electrical field intensity
- Pulses activated by foot switch
- 16 lbs, 12.5” W x 5.5” H x 13” D

Applicator

- Handle with electrode needle array disposable tip
- Applicator 0.5 or 1.0 cm in diameter; needle array hexagonal
- Adjustable needles, 1 to 15 mm

PROCEDURE





Step 1: IL-12 Injection

- IL-12 is injected into the tumor using a conventional needle and syringe

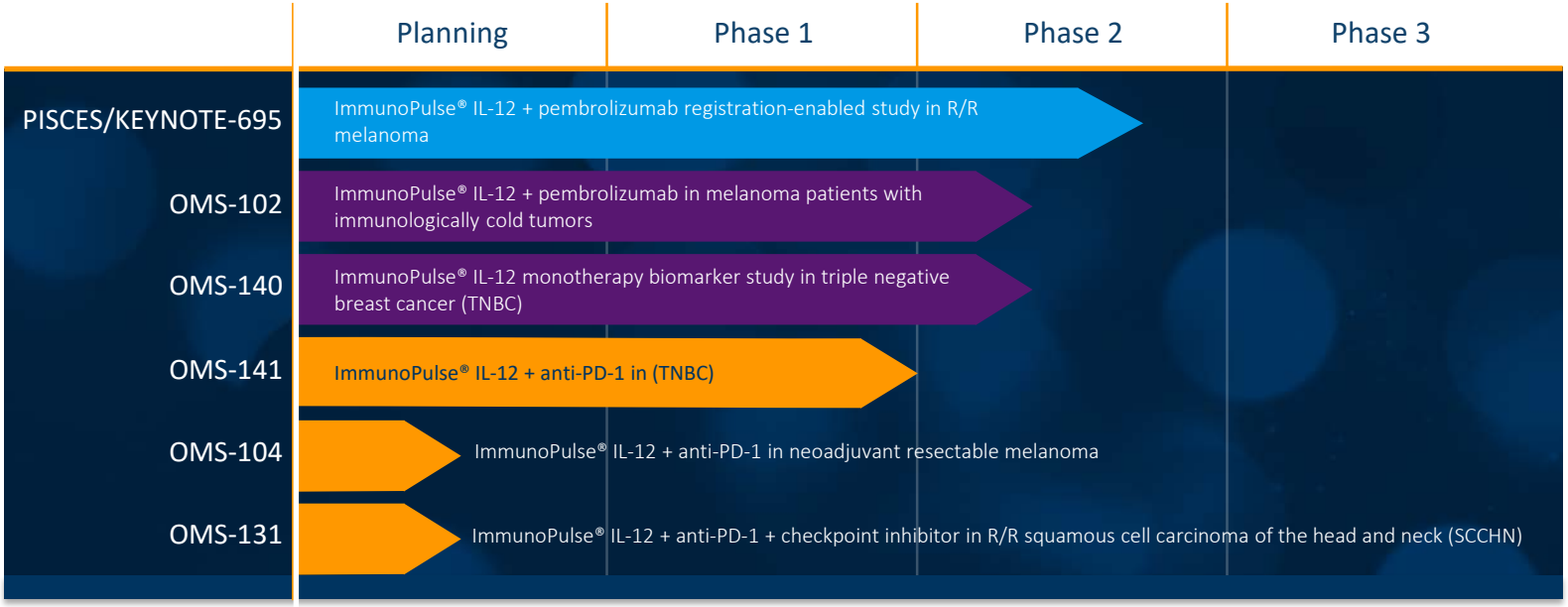
Step 2: Applicator Insertion

- 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

Pipeline



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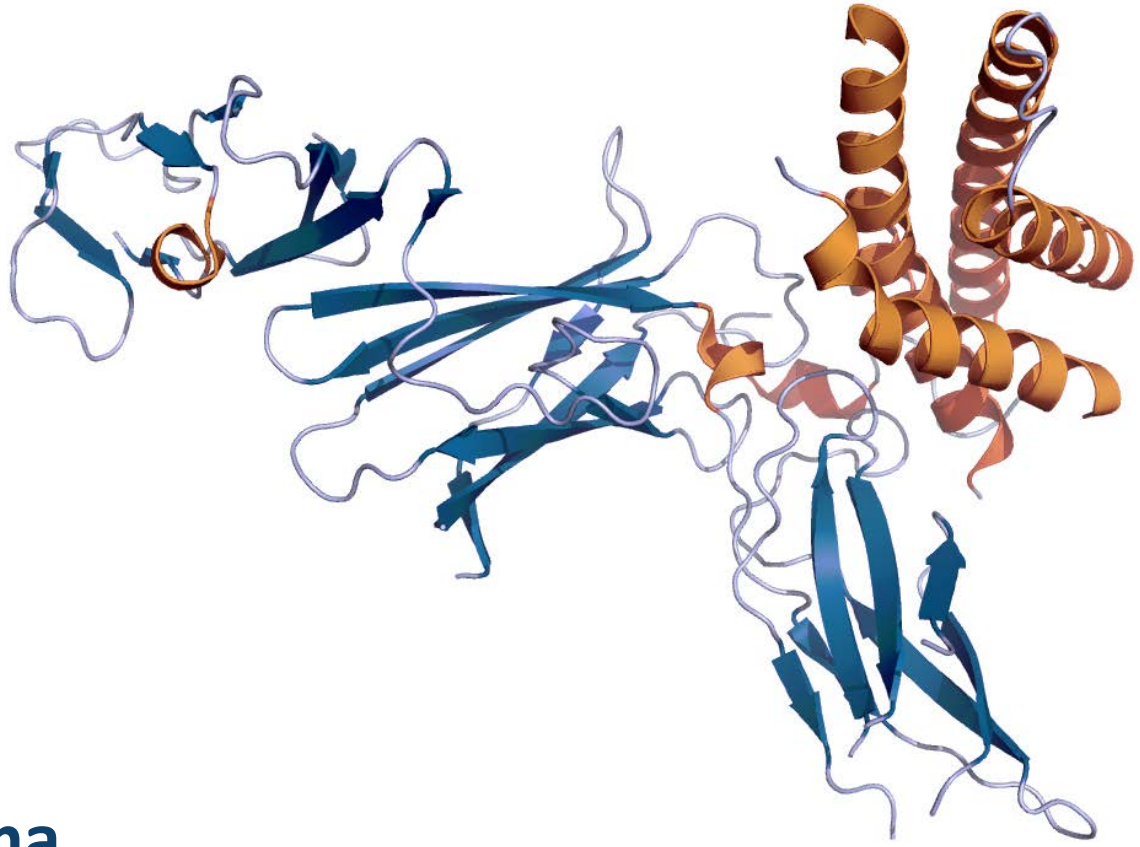


ImmunoPulse® IL-12 in Metastaic Melanoma

ImmunoPulse® IL-12 Development Program
in Metastatic Melanoma

OMS-100 Phase 1 Dose-Escalation Metastatic Melanoma:
Strong safety profile with early efficacy results

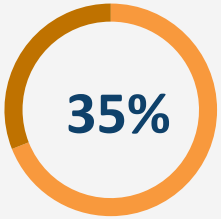
OMS-100 Phase 2 Repeat Dose:
Abscopal tumor response and continued safety

OMS-100 Phase 2 Retrospective Analysis:
Evidence of priming for anti-PD-1 response and continued safety

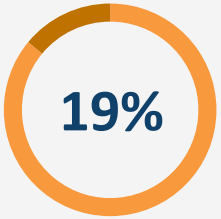
OMS-102 Phase 2 Combination Study with Pembrolizumab:
Evidence of efficacy in predicted anti-PD-1 non-responder population and continued safety

OMS-103 Phase 2 Combination Study with Pembrolizumab (PISCES/KEYNOTE-695):
Assess efficacy and safety in anti-PD-1 non-responder population

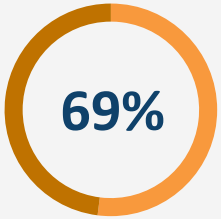
OMS-100 Phase 2 ImmunoPulse® IL-12 Monotherapy
Data Delivers CRs in Metastatic Melanoma



Best Overall Response



Complete Response



Disease Control Rate

Complete Regression in at Least One Lesion

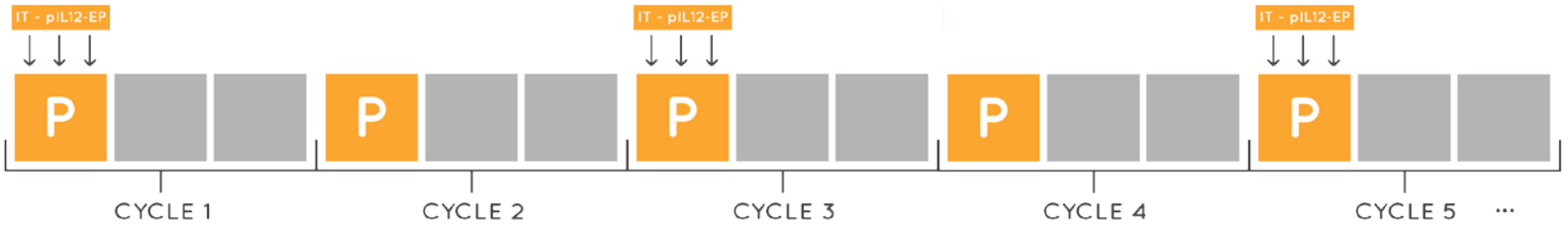
Data from our multi-center Phase 2 trial of ImmunoPulse® IL-12 (treated on a 90-day cycle, on Days 1,5 and 8) demonstrated encouraging single-agent activity in 29 patients with metastatic melanoma

Source: Le, Melanoma Bridge 2014

OMS-102 Phase 2 Trial Design
ImmunoPulse® IL-12 in Combination with Pembrolizumab

- Open-label, Phase 2 Multicenter Study
- Primary Endpoint: BORR based on RECIST v1.1
- Secondary Endpoint: DOR, PFS, OS
- Eligible patients using biomarker assay < 25% CTLA4^{hi}PD1^{hi} TIL phenotype
  - Stage III-IV Melanoma
  - 3 week treatment cycles with 200 mg pembrolizumab administered as a 30 minute IV infusion
  - Patients treated with ImmunoPulse® IL-12 on days 1, 5 and 8 of every other cycle (every 6 weeks)

22 patients
2 sites in the US
Dosing ongoing
Study completion date TBD



P = Pembrolizumab treatment

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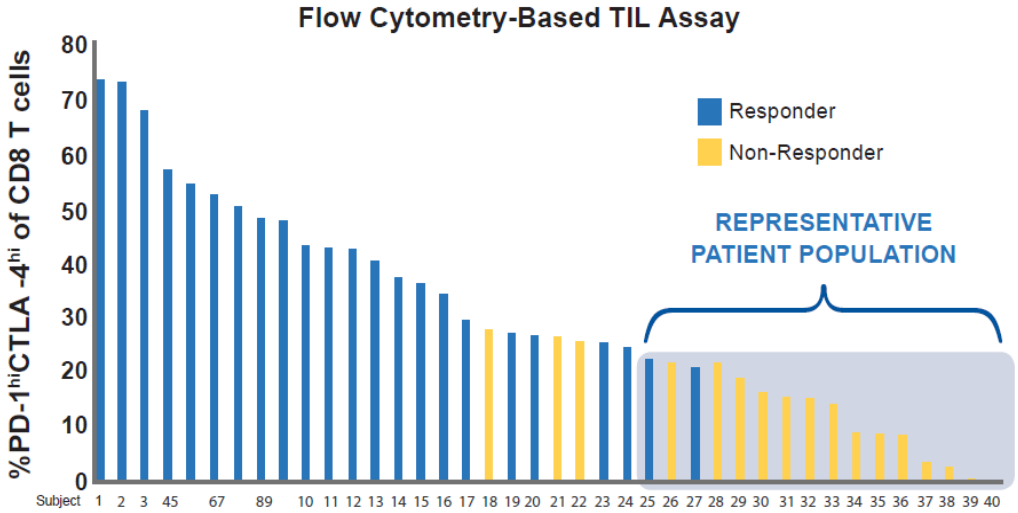
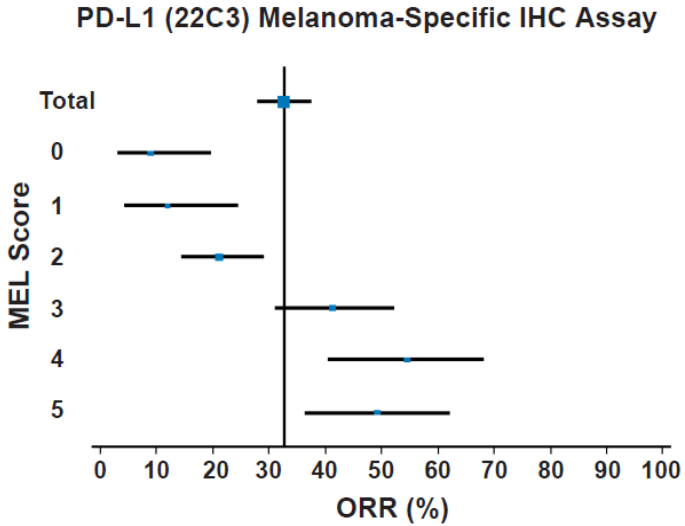
OMS-102 Patient Selection Based on Predictive Assay



Daud, *et al.* J. Clin. Invest. 2016:1–6.



Daud, *et al.* Journal of Clinical Oncology. 2016:1–12.

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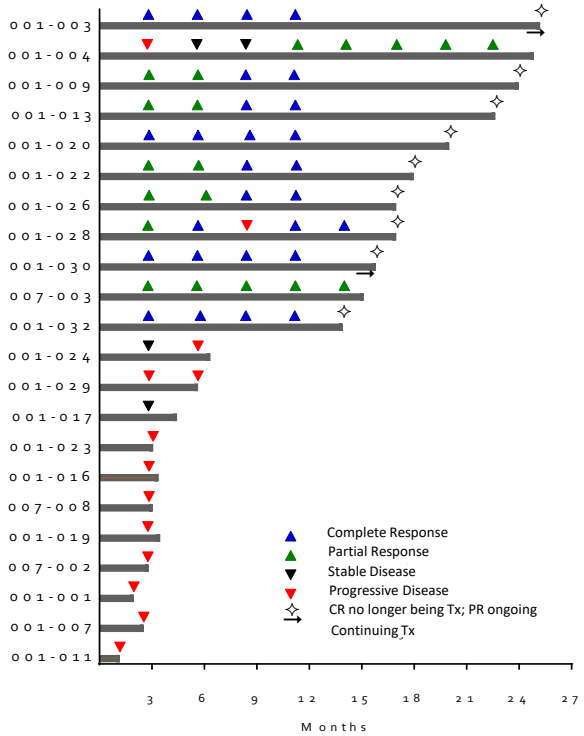
OMS-102 ImmunoPulse® IL-12 + Pembrolizumab Delivers
Durable Responses in 50% of Patients with Metastatic Melanoma

Clinical data suggest combination is an effective therapeutic modality in patients unlikely to respond to anti-PD-1 therapies

- Best overall response rate (BORR) of 50% (11/22)
  - 43% [9/21] achieved RECIST v1.1 BORR
- Complete response (CR) rate of 41% (9/22)
  - 38% [8/21] achieved RECIST v1.1 durable CR
- Disease control rate (DCR) of 59% (13/22)
  - 52% [11/21] achieved RECIST v1.1 DCR
- Progression free survival (PFS) of 57% at 15 months
- Duration of response (DOR) of 100% (11/11)

Durable Responses in Patients Failing Prior Checkpoint Inhibitors

Target Patient Population for PISCES/KEYNOTE-695



	Clinical	RECIST
Best Overall Response Rate (BORR = CR + PR)	11/22 (50%)	9/21 43%
Disease Control Rate (DCR = CR + PR + SD)	13 /22 (59.0%)	12/21 57%
Complete Response (CR)	9/22 (41.0%)	8/21 38%
Partial Response (PR)	2/22 (9.0%)	1/21 5%
Stable Disease (SD)	2/22 (9.0%)	2/21 10%
Progressive Disease (PD)	9/22 (41.0%)	9/21 43%

BORR on T+P therapy	Patient	Previous Immunotherapies in Responding Patients			
		Medication	Cycle	Dose	Best Response
PR	001-004	IPILIMUMAB	2	Unknown	PD
		PEMBROLIZUMAB	1	Unknown	Unknown; AE - severe headache
		NIVOLUMAB	4	1mg/kg	PD
CR	001-013	PEMBROLIZUMAB	1	200 mg	Unknown
CR	001-028	TVEC	3	1.0 mL	PD
PR	007-003	IPILIMUMAB	4	3 mg/kg	PD

Source: Algazi SITC Presentation 2017

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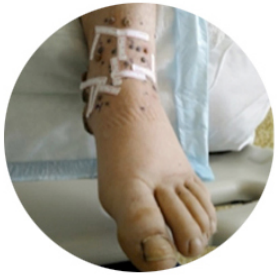
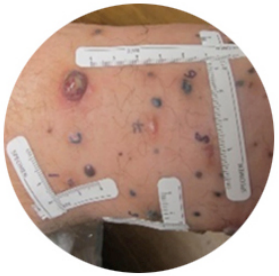
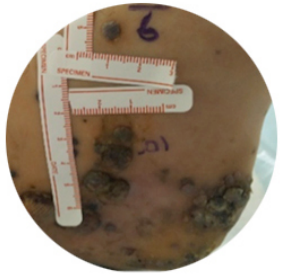
Case Example: Patient 001-004

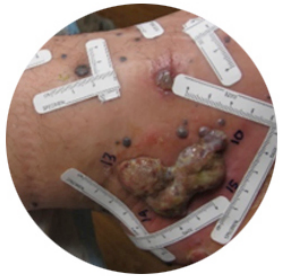
Pre-treatment



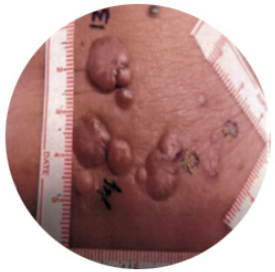


Post-treatment
(Week 12) – PD by RECIST

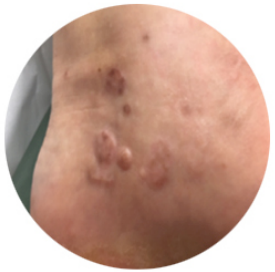




Post-treatment
(Week 48) – PR*

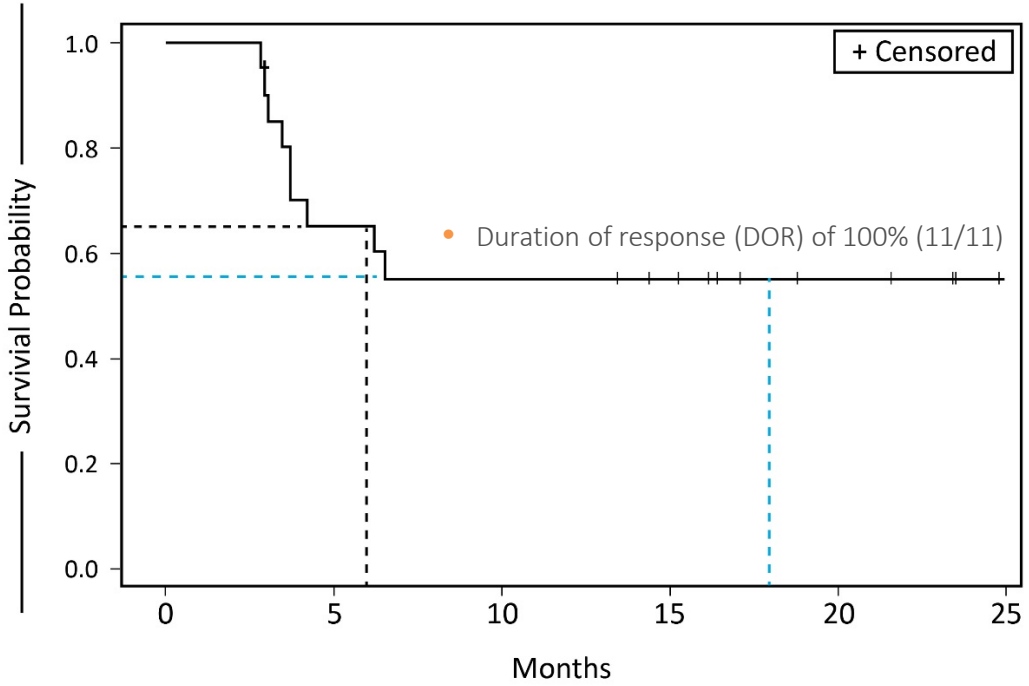


Post-treatment
(Week 60) – PR*



*PR by clinical assessment

Median PFS Not Yet Reached: 57% PFS at 18 Months
Multiple Patients Still Responding Beyond 18-24 Months

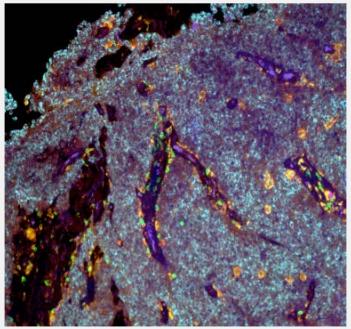


Response Type	N
RECIST v 1.1	9
Progression then response	1
Non-measurable (<1 cm)	1

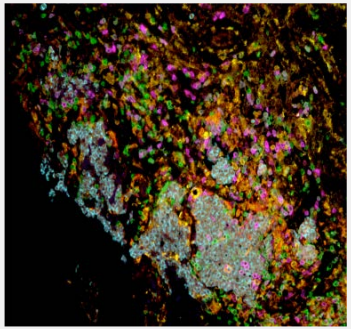
Source: Algazi SITC Presentation 2017

ImmunoPulse® IL-12 Converts "Cold" to "Hot"
in Other Solid Tumor Types

Merkel Cell Carcinoma



Pre-ImmunoPulse® IL-12
"Low TIL"

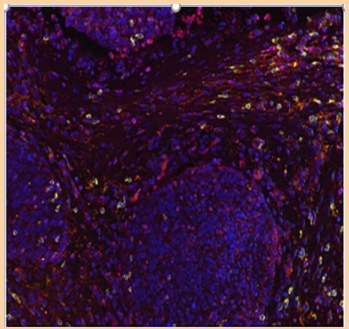


Post-ImmunoPulse® IL-12
"High" TIL

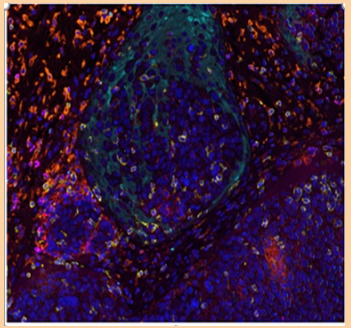
CD8 – Green	Foxp3 – White
PD-L1 – Red	Sox-10/CK20 – Blue
CD68 – Yellow	

Source: Bhatia, ESMO 2015

Head & Neck Cancer



Pre-ImmunoPulse® IL-12
"Low TIL"



Post-ImmunoPulse® IL-12
"High" TIL

FoxP3 – Green	CD3 - Pink
PD-L1 – Red	DAPI – Blue
CD8 – Yellow	CD163 - Orange

Source: Pierce, Eurogin 2016

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PISCES/KEYNOTE-695:
Clinical Trial Collaboration with Merck & Co.

Collaboration Highlights

- Access to key clinical and development expertise
- Provide KEYTRUDA® throughout the study
- Joint development committee
- 2nd study done in collaboration with MERCK

A leading biotechnology company developing DNA-based intratumoral immunotherapies

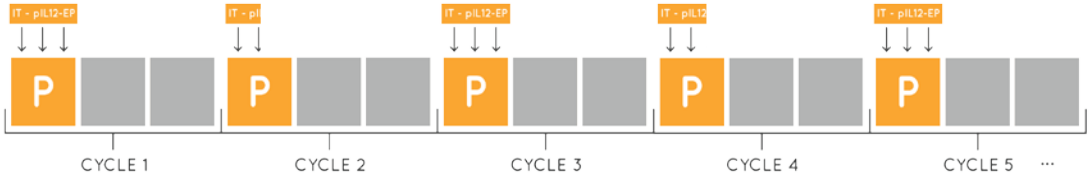
Global leader in development and commercialization of innovative therapeutics for cancer

PISCES/KEYNOTE-695: ImmunoPulse® IL-12 for Stage III/IV Melanoma

Primary outcome may support accelerated approval in 2019

Anti-PD-1 IL-12 Stage III/IV Combination Electroporation Study

- Single Arm Phase 2/3 study, Simon 2 stage minimax design
  - 4 responders out of 23 in the first stage → additional 25 patients
- Primary outcome: BORR based on RECIST v1.1
- Secondary outcomes: DOR, PFS and OS
- Eligible patients: anti-PD-1 non-responders with stage III/IV melanoma
  - Received 4+ doses of anti-PD-1
  - Progressive disease according to RECIST v1.1
  - Documented disease progression ≤24 weeks of the last dose of anti-PD-1



P = Pembrolizumab treatment

R/R: relapsed/refractory

- ✓Orphan designation
- ✓Fast Track
- Accelerated pathway
- Breakthrough status

Up to 48 patients
Up to 20 sites across US & Australia
Dosing ongoing
Primary completion by 2H 2018

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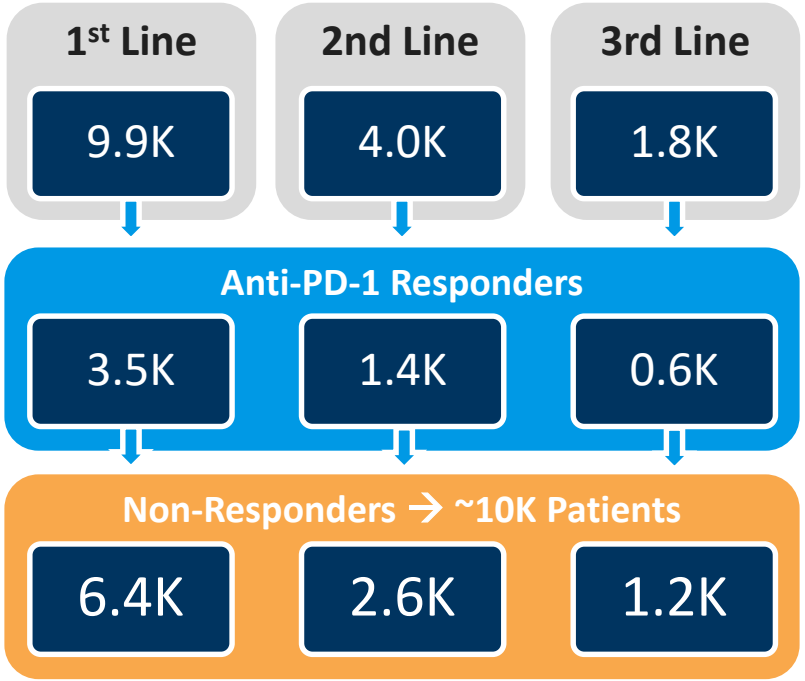
Favorable PISCES Data Could Unlock ~10K Stage III/IV
Melanoma Anti-PD-1 Failure Patients (US Only)

- Combo therapy with checkpoint inhibitors rapidly becoming SOC in cancer
- Checkpoint products becoming backbone therapy for ~60% or more of all treatable cancers
- Anti-PD-1 an effective and durable 1st line Tx for responders
- ImmunoPulse® IL-12 offers a potentially innovative therapeutic intervention for non-responders



R/R: relapsed/refractory

Source: DataMonitor Melanoma Forecast & Epidemiology Datapacks, April 2016

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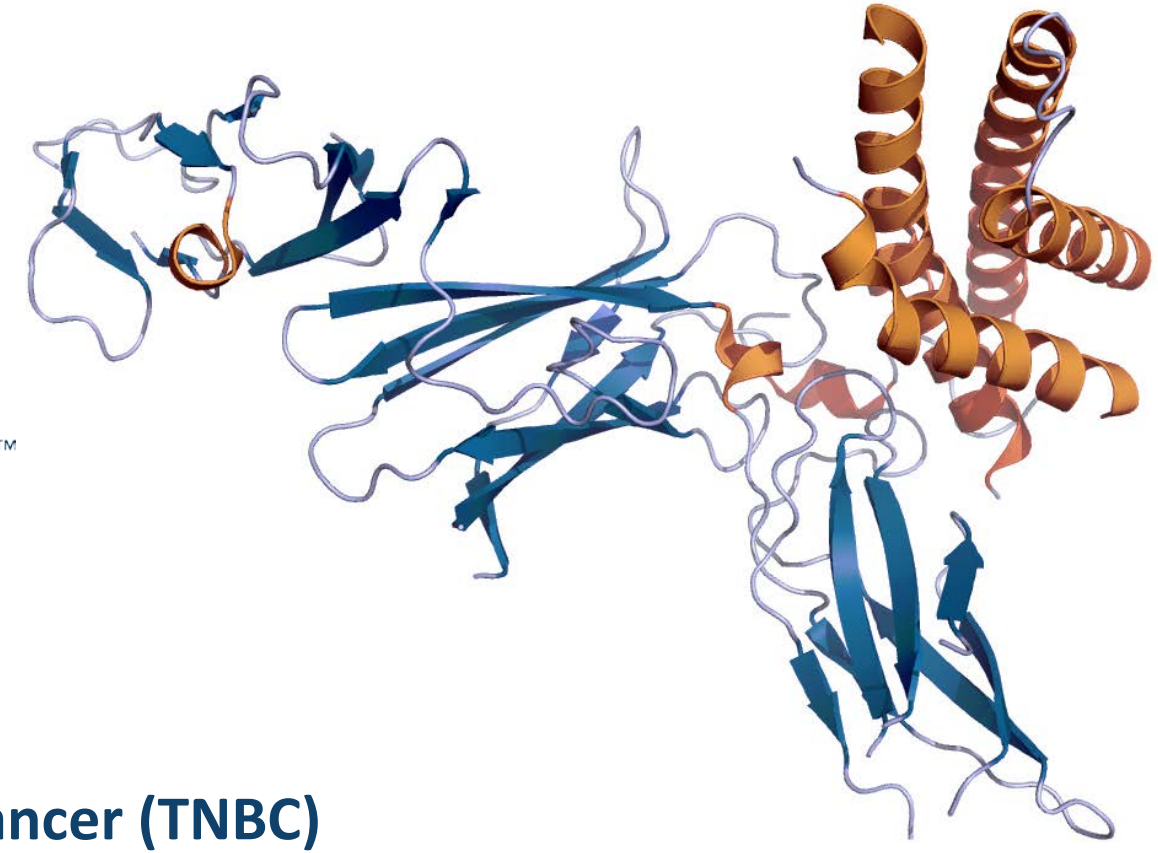

ImmunoPulse® IL-12 in Triple Negative Breast Cancer (TNBC)

Metastatic TNBC

Patients are ineligible for HER2 and ER-targeted therapies

Urgent need for additional therapeutic options in TNBC

Disease progression is rapid, and chemotherapy responses are not durable

Poor overall survival for metastatic patients

Novel targeted therapies (e.g., PARP inhibitors) are only suitable for select patient segments

Unmet need is likely to endure

Checkpoint inhibition with PD-(L)1 monotherapy is only effective in a minority of patients

Need for IO combos

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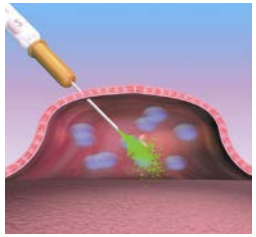
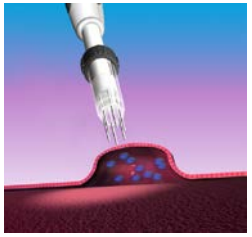
OMS-140: ImmunoPulse® IL-12 Monotherapy in Metastatic TNBC Patients

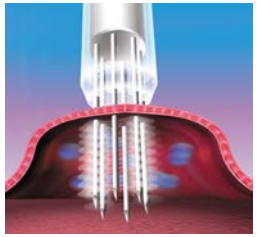
TNBC Accessible chest wall lesions



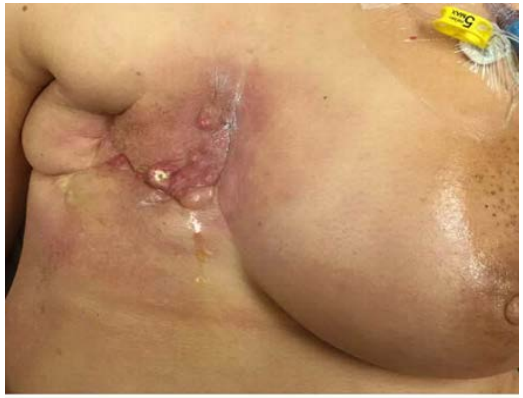
Insertion of the OMS Applicator Tip needles into the tumor.



Intralesional injection of the therapeutic agent into the tumor.



Electroporation of the tumor using the OMS.



January 18, 2018

ONCOSEC PROVIDES ENCOURAGING CLINICAL OBSERVATION RELATED TO TRIPLE NEGATIVE BREAST CANCER STUDY

March 15, 2018

OncoSec's Intratumoral IL-12 In Metastatic Triple Negative Breast Cancer (TNBC) Selected For Poster Presentation At The American Association For Cancer Research (AACR) Annual Meeting 2018

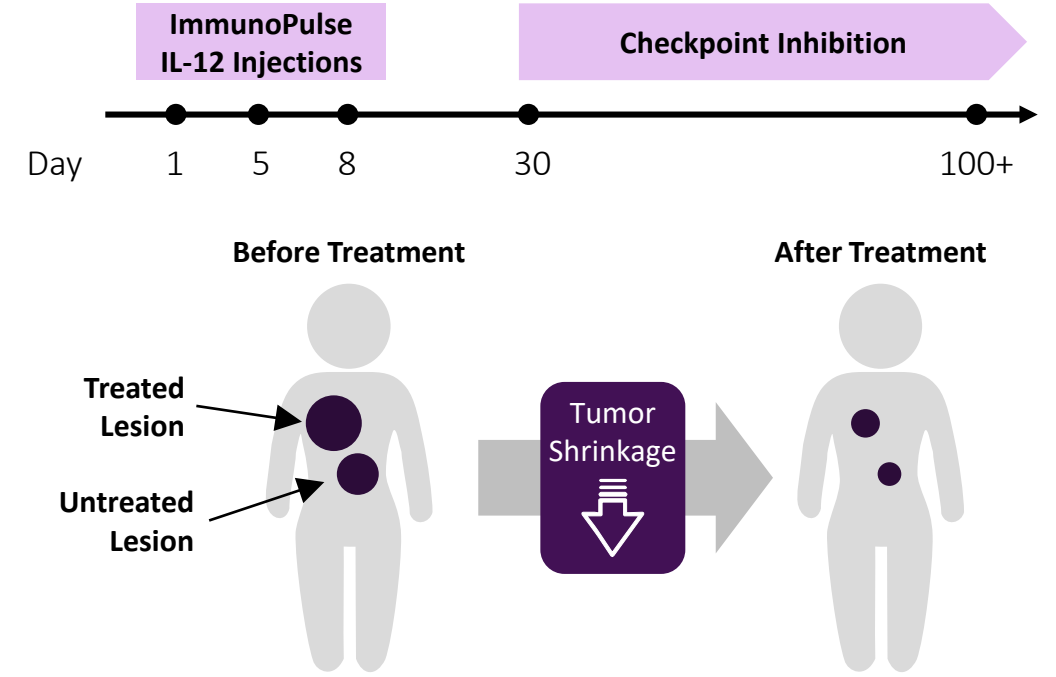
AACR 2018 Abstract & Poster

Initial Safety and Efficacy Data

OMS-I140 Trial

Therapy:	ImmunoPulse IL-12, followed by checkpoint inhibition in select patients
Patients:	Patients with advanced or metastatic TNBC (2L+)
Timeline:	Ongoing; eight of ten patients enrolled
Results:	Dramatic reduction in tumor size observed

Sample Data



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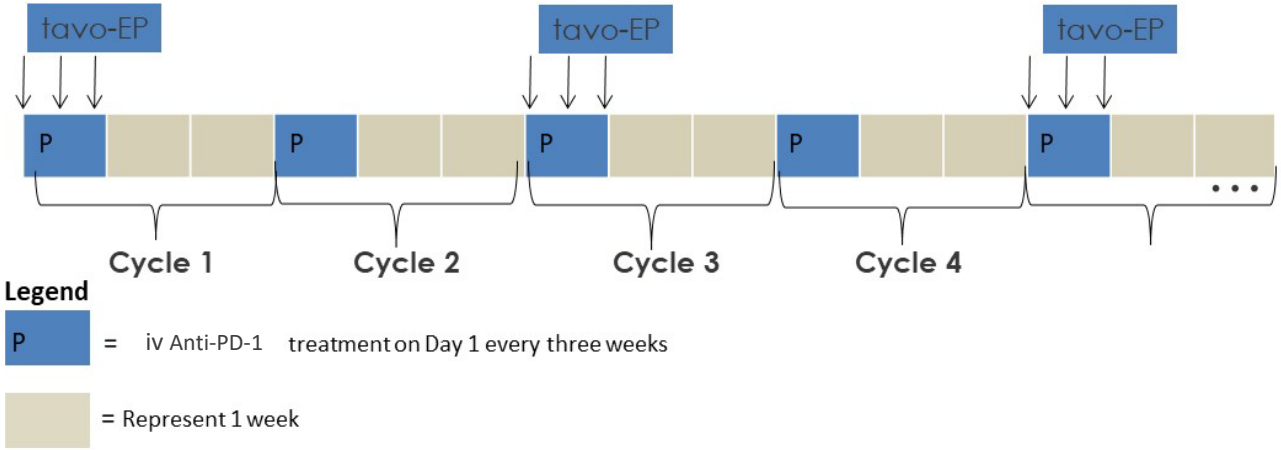
OMS-141 Trial Design

- 3 week treatment cycles with anti-PD-1 administered as a 30-minute IV infusion Day 1 of every cycle (flat dose of 200 mg)
- Subjects treated with IT-TAVO-EP on days 1, 5 and 8 every 6 weeks
- Subjects with histologically confirmed diagnosis of inoperable locally advanced or metastatic TNBC and at least 1 prior line of approved systemic chemotherapy or immunotherapy.



tavo-EP = intratumoral tavokinogene telseplasmid injections followed by electroporation on days 1, 5 and 8 every 6 weeks

Clinical Development Path

Initial Clinical Data

An expanded clinical trial has been planned based on **favorable initial data** from OMS-140

Execution of the OMS-I141 Trial

Therapy:	ImmunoPulse IL-12 with anti-PD-1
Patients:	Patients with metastatic TNBC (2L+)
Timeline:	Initiating in near term
Endpoints:	ORR, DOR, PFS, and safety endpoints

Expedited FDA Approval

ImmunoPulse IL-12 is **likely to qualify** for expedited regulatory programs:

1. Fast track designation
2. Breakthrough therapy designation
3. Accelerated approval

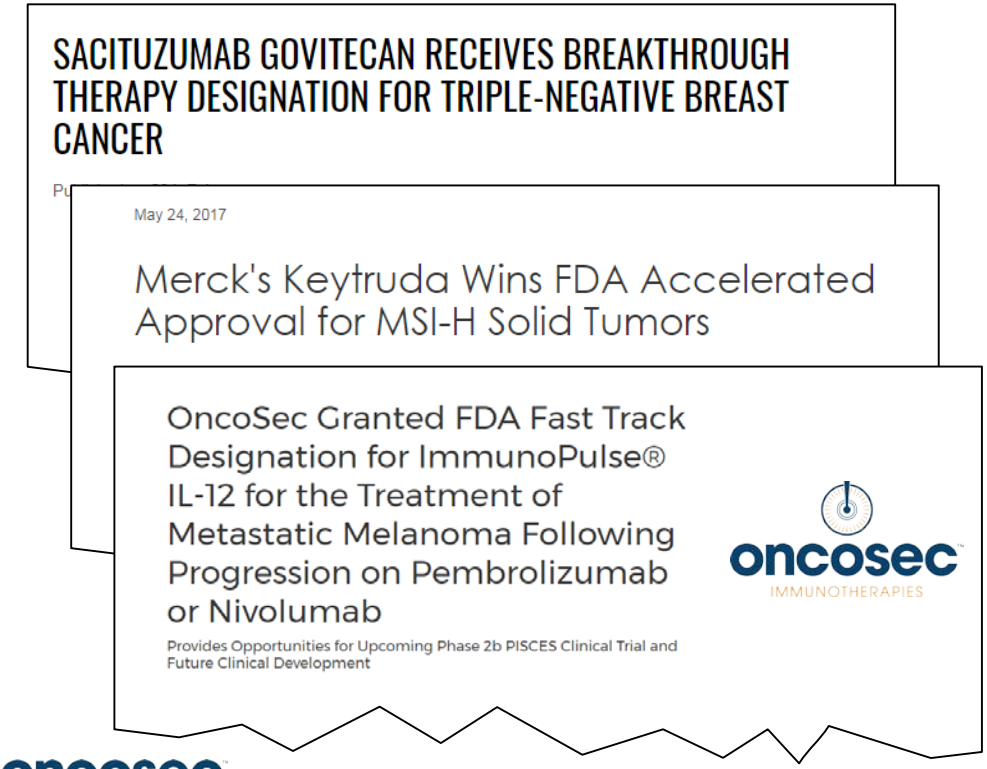
ImmunoPulse IL-12 may achieve a **rapid path to FDA approval**

Utilization in Late-Line TNBC

Following approval as a late-line therapy in TNBC, **utilization is highly likely** due to:

- ✓ Compelling efficacy
- ✓ Strong safety profile
- ✓ Broad eligibility
- ✓ Favorable reimbursement landscape in oncology

Regulatory Avenues to Rapid Approval



Benefits of expedited regulatory programs

- Frequent Guidance from FDA
- Approval Through Surrogate Endpoint
- Rolling and Priority Review

Expedited regulatory programs may allow ImmunoPulse IL-12 to achieve rapid FDA approval

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Rationale for Special Regulatory Status in TNBC

Requirements for special regulatory status	Relevant to IL-12 plus checkpoint inhibition in TNBC?
Serious disease	✓
Unmet medical need	✓
Evidence of efficacy	✓

Supporting Information in TNBC

- Overall survival for metastatic TNBC is 1 -2 years from diagnosis
- Current therapies result in short-lived responses and/or significant toxicity
- Initial clinical data demonstrates compelling efficacy and tolerability

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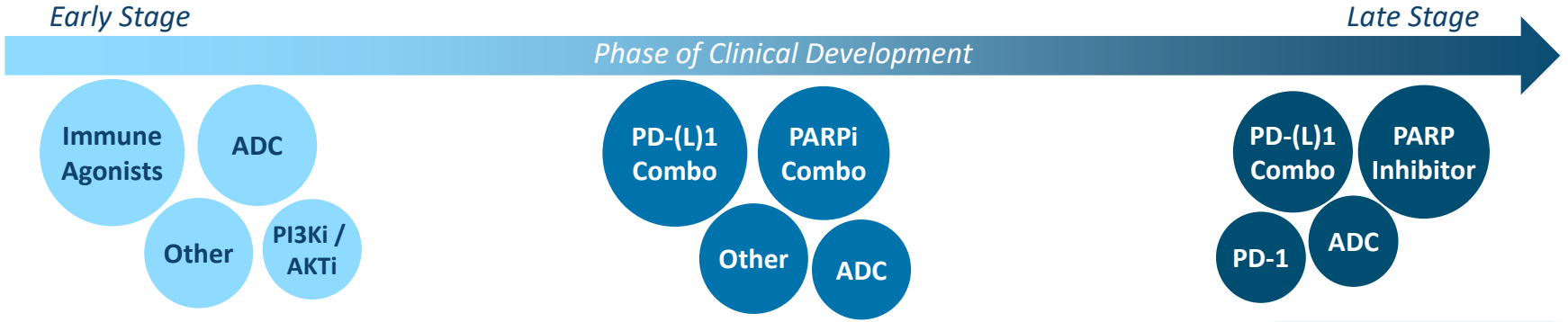
Strong Competitive Positioning



	PI3K/AKT Inhibitors	ADCs	PARP Inhibitors	PD-(L)1 Inhibitors	Immuno-Pulse IL-12
Developed for all-comers?	✗	✓	✓	✓	✓
Potential for high ORR?	⚠	✓	✓	?	✓
Known to be tolerable?	✓	✓	✓	✓	✓

OncoSec uniquely positioned relative to competitors

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IMMUNOMEDICS, INC.
AstraZeneca
Genentech
SeattleGenetics

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PIPELINE SCHEMATIC IS NOT EXHAUSTIVE

ImmunoPulse® IL-12 Summary

- **ImmunoPulse® IL-12 for stage III/IV relapsed/refractory melanoma positioned for accelerated approval**
  - Initial data 2018, seek FDA feedback on accelerated approval
  - Potential US approval in 2019 via accelerated pathway
- **ImmunoPulse® IL-12 converts checkpoint inhibitor non-responders to responders**
  - 60-70% of melanoma patients do not respond to checkpoint inhibitors 1st line
- **ImmunoPulse® IL-12 + checkpoint inhibitor in low-TIL (cold) at 50% BORR**
  - Predominantly complete responses with significant durability, to date
  - Opportunity to expand 1st line anti-PD-1 response beyond 30-35%

Financial Summary

CASH SUMMARY	
Cash on hand (as of 02/28/18)	$36.7M

EQUITY SUMMARY	
Shares Outstanding (as of 03/07/18)	51,482,206

NO DEBT

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Investment Highlights

Registration-Enabled Clinical Program with Near-Term Commercial Opportunity in advanced melanoma	• Ongoing global, multi-center Phase 2 PISCES/KEYNOTE-695 trial in combining patients with stage III/IV melanoma • Preliminary Data anticipated 2018; expected US filing 2019
Clinical combination therapy program in TNBC planned	• High unmet medical need; ImmunoPulse IL-12 demonstrated synergy with checkpoint inhibitor
No Added Side Effects or Toxicities Observed When Combined with Checkpoint inhibitors	• Demonstrated synergy with checkpoint inhibitors • ImmunoPulse® IL-12 shown to be safe and well-tolerated in over 100 patients dosed, with > 1000 doses administered to-date
ImmunoPulse® IL-12 Converts "Cold" Tumors to "Hot"	• Resensitizes tumors to anti-PD-1 therapy in patients • Tumor profiling supports activation of multiple immune pathways
Versatile, Flexible Technology Platform	• ImmunoPulse® platform designed to enhance local delivery and expression of DNA-based immune-targeting agents, such as IL-12

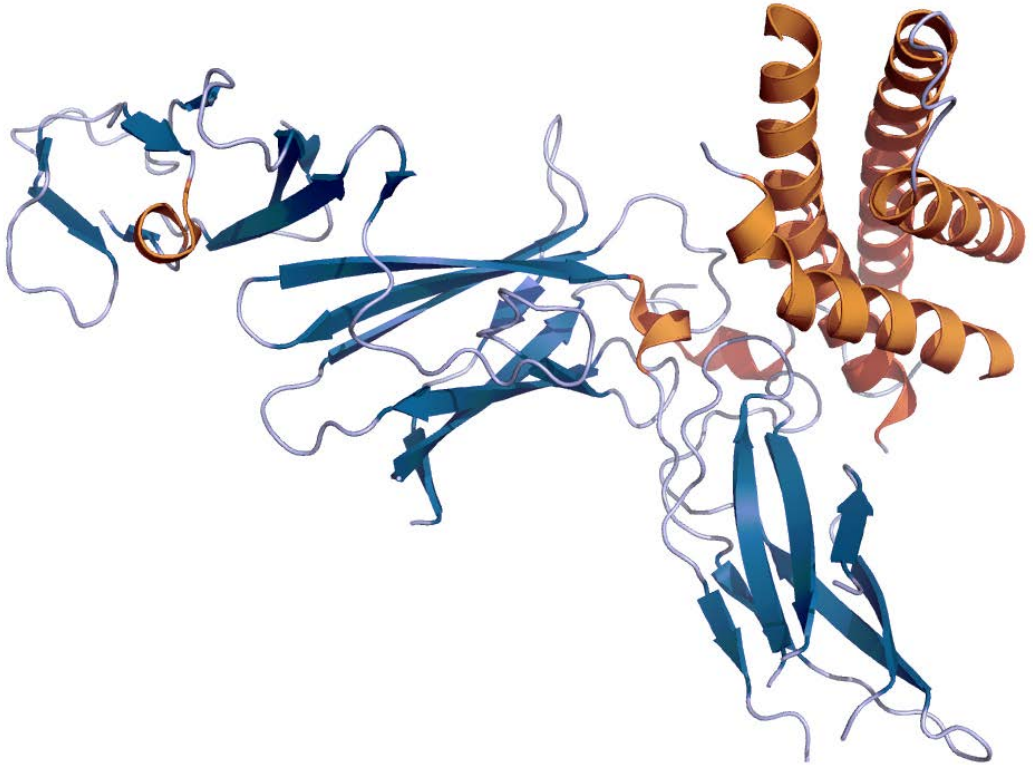
Anticipated Milestones

- ✓ Present preliminary data for OMS-140 TNBC study at a medical meeting
- Initiate a Phase 2 combination study with an anti-PD-1 therapy in the TNBC recurrent and/or metastatic setting
- Complete Stage 1 enrollment in PISCES/KEYNOTE-695 trial
- Present preliminary data from PISCES/KEYNOTE-695
- Seek FDA feedback on accelerated approval pathway for ImmunoPulse® IL-12 BLA

- Prepare an IND for a second product candidate utilizing our proprietary, multi-gene expression
- Initiate a Phase 2 investigator-sponsored combination study in SCCHN with two other immunotherapies in the recurrent and/or metastatic setting
- Initiate a Phase 2 combination study in melanoma with an anti-PD-1 therapy in the neoadjuvant setting
- Apply for classification as an Advanced-Therapy Medicinal Product (ATMP) for the treatment of unresectable metastatic melanoma

2018

Thank You



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