



Safe Harbor



Any statements contained herein that are not statements of historical facts may be deemed to be forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, including statements regarding the advancement, timing and sufficiency of our clinical trials or financial status, patient enrollments in our existing and planned clinical trials and the timing thereof, the results of our clinical trials, the timing and release of our clinical data, statements regarding our expectations about our cash runway, our goals to develop and commercialize our product candidates, our expectations regarding the size of the patient populations for our product candidates if approved for commercial use and other statements identified by words such as "could," "expects," "intends," "may," "plans," "potential," "should," "will," "would," or similar expressions and the negatives of those terms. Forward-looking statements are not promises or guarantees of future performance, and are subject to a variety of risks and uncertainties, many of which are beyond our control, and which could cause actual results to differ materially from those contemplated in such forward-looking statements. These factors include risks related to our limited operating history, our ability to generate positive clinical trial results for our product candidates, the costs and timing of operating our in-house manufacturing facility, the timing and scope of regulatory approvals, changes in laws and regulations to which we are subject, competitive pressures, our ability to identify additional product candidates, political and global macro factors including the impact of global pandemics and related public health issues, the ongoing military conflicts between Russia-Ukraine and Israel-Hamas and the impact on the global economy and related governmental imposed sanctions, and other risks as may be detailed from time to time in our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, and other reports we file with the Securities and Exchange Commission. Our actual results could differ materially from the results described in or implied by such forward-looking statements. Forward-looking statements speak only as of the date hereof, and, except as required by law, we undertake no obligation to update or revise these forward-looking statements.

Industry Innovator in Oncolytic Immunotherapy





Establishing a Broad Skin Cancer Franchise

Clinical activity demonstrated across multiple skin cancers and settings

- ✓ Submitted BLA for RP1 in anti-PD1 failed melanoma under accelerated approval pathway
- ✓ Granted Breakthrough Therapy designation by FDA
- ✓ IGNYTE-3 confirmatory phase 3 study in anti-PD1 melanoma enrolling
- ✓ IGNYTE primary analysis by independent central review shows durable responses in difficult-to-treat population
- ✓ ARTACUS clinical trial of RP1 as monotherapy in solid organ transplant patients shows encouraging response rates



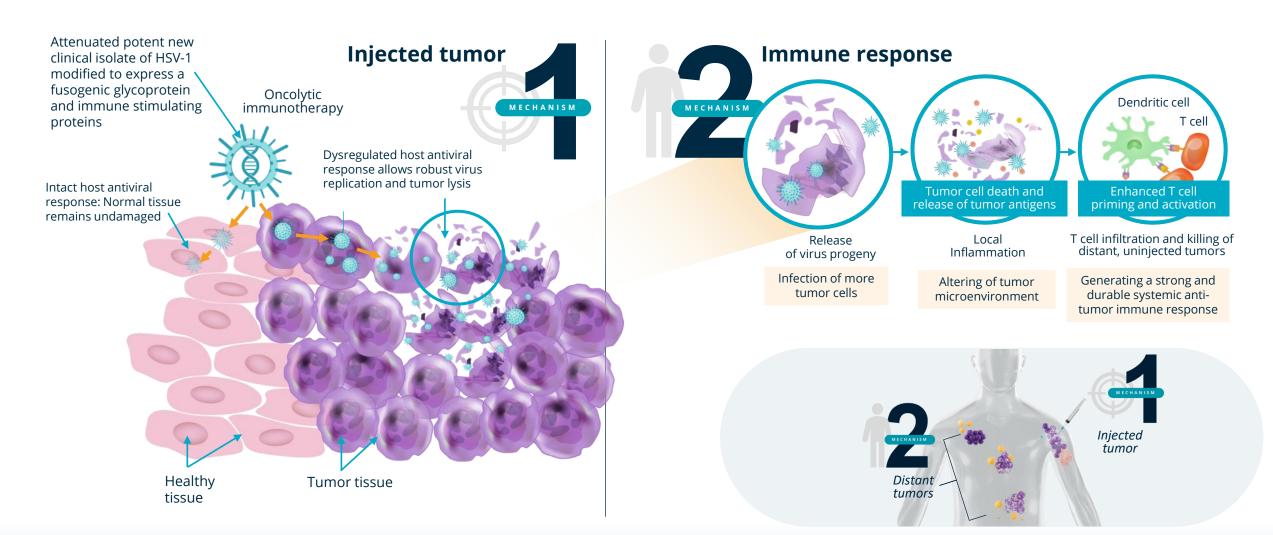
Expanding into Broader Opportunities

Clinical activity both as monotherapy and in combination with nivolumab

- ✓ Compelling phase 1 data in uveal melanoma with pivotal study in metastatic uveal melanoma initiated
- Monotherapy clinical activity seen in other difficult to treat tumors, including:
 - Sarcomas (e.g., chordoma)
 - Head & neck (e.g., mucoepidermoid)
 - Esophageal
- ✓ R&D Day planned for 1H 2025 to disclose pipeline expansion plans

Oncolytic Immunotherapy Intended to Activate a Powerful and Durable Systemic Anti-Tumor Response





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RPx Platform Addresses a Range of Tumor Types Intending to Optimize Clinical Outcomes







Payloads	GALV-GP R-, GM-CSF	GALV-GP R-, anti-CTLA-4, GM-CSF			
Target	Immunologically responsive tumor types, including anti-PD1 failed	Less immunologically responsive tumor types			
Intended indication(s)	Skin cancers (CSCC inc. SOT*, anti-PD1 failed melanoma, anti-PD1 failed NMSC/other NMSCs, etc)	Uveal melanoma registration study initiated with expansion into broader opportunities planned			
Clinical activity in anti-PD1 failed patients demonstrated					
Good tolerability and Safety profile demonstrated					
Injection location	Superficial, nodal & visceral	Superficial, nodal & visceral			
Systemic activity	Clear systemic effects seen in responding patients (non-injected tumor responses, responses are generally highly durable)				
Other design considerations	Designed for more I-O sensitive tumor types with excellent safety profile alone & in combination	Increased I-O systemic activity, also with excellent safety profile alone & in combination			

*SOT=solid organ transplant © 2024 Replimune Group Inc.



RP1: Establishing a Broad Skin Cancer Franchise

IGNYTE Clinical Trial: RP1+Nivolumab in Anti-PD1 Failed Melanoma

Potentially Significant RP1 Commercial Opportunity Based on Compelling Data and High Unmet Need



- Breakthrough Therapy Designation received Nov 2024 for advanced melanoma patients progressing on an anti-PD1 containing regimen
- BLA submitted with anticipated PDUFA date in 2H 2025
- Significant US market size with ~13K patients
- IGNYTE RP1 trial showed approximately one third of patients respond by independent central review (ORR: 33.6%*)
 - Clinically meaningful activity observed across all subgroups
- Responses are durable with (85% ≥1 year from starting treatment (baseline); median duration from response initiation was 21.6 months)
- Data demonstrates systemic activity including in patients with visceral disease
- Median OS has not been reached, 1-year (75.3%), 2-year (63.3%) and 3-year (54.8%)
- RP1 combined with nivolumab appears to be a well tolerated regimen

Clinical Efficacy Seen Across Subgroups*



Centrally reviewed mRECIST v1.1 responses (per protocol); all patients have ≥12 months follow up

BOR n (%)	All patients (N = 140)	Single- agent anti–PD-1 (n = 75)	Anti–PD-1/ CTLA-4 (n = 65)	Stage IIIb–IVa (n = 72)	Stage IVb–IVd (n = 68)	Primary resistance (n = 92)	Secondary resistance (n = 48 ^a)	Anti–PD-1 adjuvant (n = 36)	Anti–PD-1 not adjuvant (n = 104)
CR	21 (15.0)	16 (21.3)	5 (7.7)	17 (23.6)	4 (5.9)	16 (17.4)	5 (10.4)	11 (30.6)	10 (9.6)
PR	26 (18.6)	13 (17.3)	13 (20.0)	12 (16.7)	14 (20.6)	17 (18.5)	9 (18.8)	5 (13.9)	21 (20.2)
SD	41 (29.3)	20 (26.7)	21 (32.3)	24 (33.3)	17 (25.0)	22 (23.9)	19 (39.6)	10 (27.8)	31 (29.8)
PD	43 (30.7)	24 (32.0)	19 (29.2)	18 (25.0)	25 (36.8)	31 (33.7)	12 (25.0)	9 (25.0)	34 (32.7)
ORR	47 (33.6)	29 (38.7)	18 (27.7)	29 (40.3)	18 (26.5)	33 (35.9)	14 (29.2)	16 (44.4)	31 (29.8)

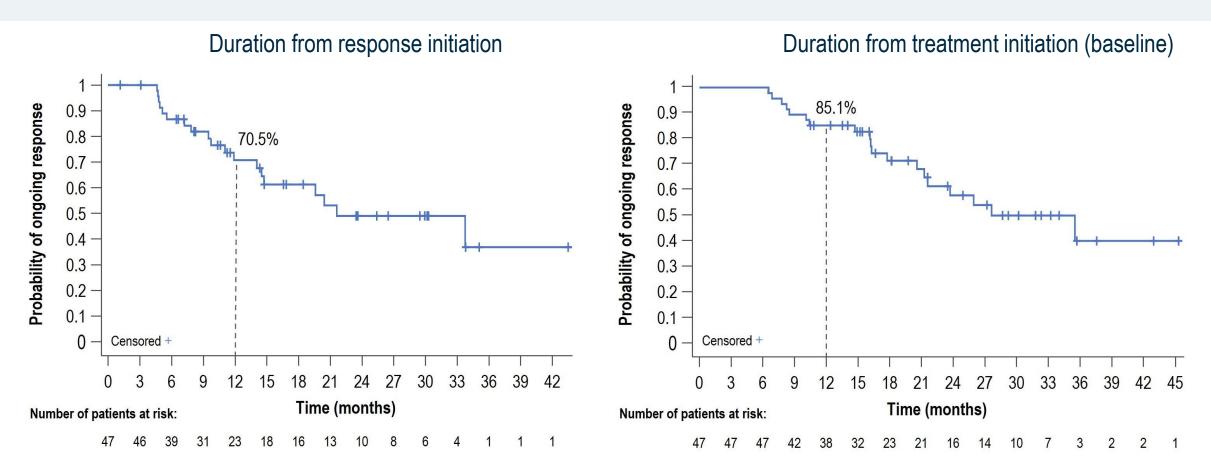
Consistent response rates were seen across patient subgroups, including:

- 27.7% ORR in patients who had prior anti-PD-1 and anti-CTLA-4
- 35.9% ORR in patients who had primary resistance to anti-PD-1

^{*}Data presented at ESMO 2024

Durable Response Shown (by mRECIST v1.1)*

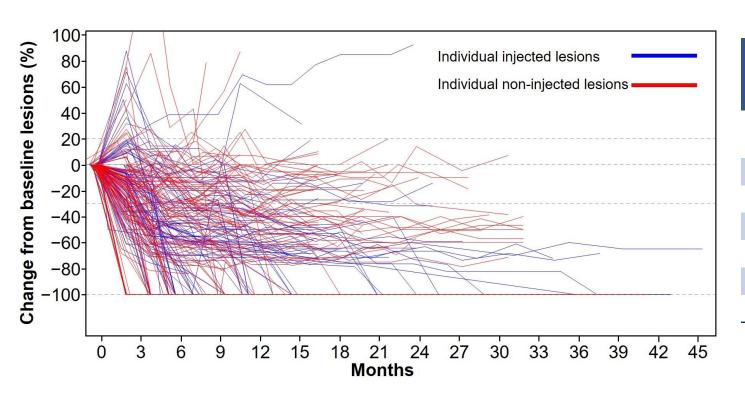




- Median (range) duration from response initiation was 21.6 months (1.2+ to 43.5+ months)
- Median (range) duration from treatment initiation (baseline) was 27.6 months (6.6+ to 45.3+ months)
- 85% of responses were ongoing ≥1 year from starting treatment

Systemic Non-Injected Responses Demonstrated (mRECIST v1.1)*





	Number (%) of measured lesions for responders (CR or PR; N = 47)		
	Injected (n = 79)	Non-injected (n = 123)	
Number of lesions with:			
No reduction	1 (1.3)	2 (1.6)	
Any reduction	78 (98.7)	119 (96.7)	
Best reduction >0 to <30%	4 (5.1)	21 (17.1)	
Best reduction ≥30 to <100%	31 (39.2)	48 (39.0)	
Best reduction of 100%	43 (54.4)	50 (40.7)	

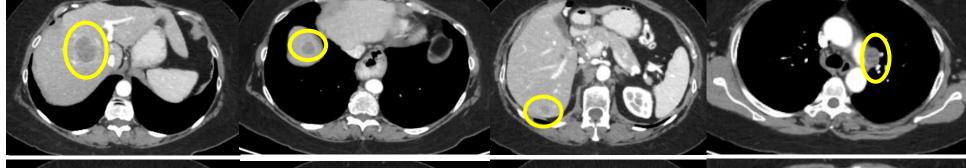
- · Injected and non-injected lesions responded with similar frequency, depth, duration, and kinetics
- Most lesions (85%) had a reduction >30%

^{*}Data presented at ESMO 2024

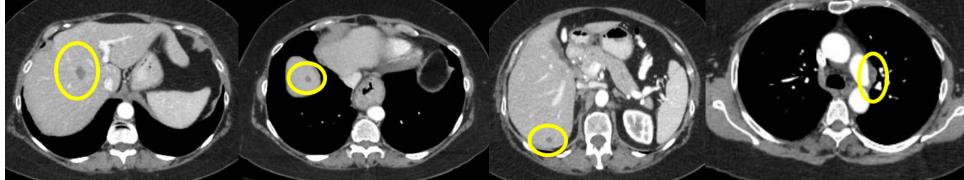




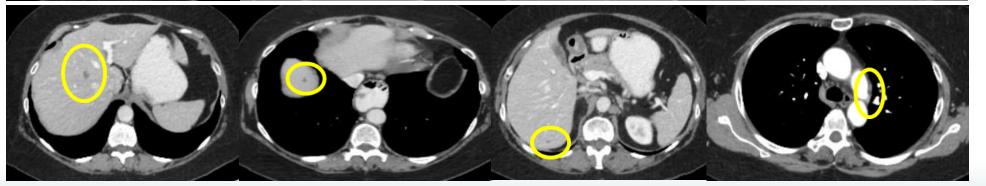
22 Jul 2021/ Baseline



22 Sep 2021/ Day 57

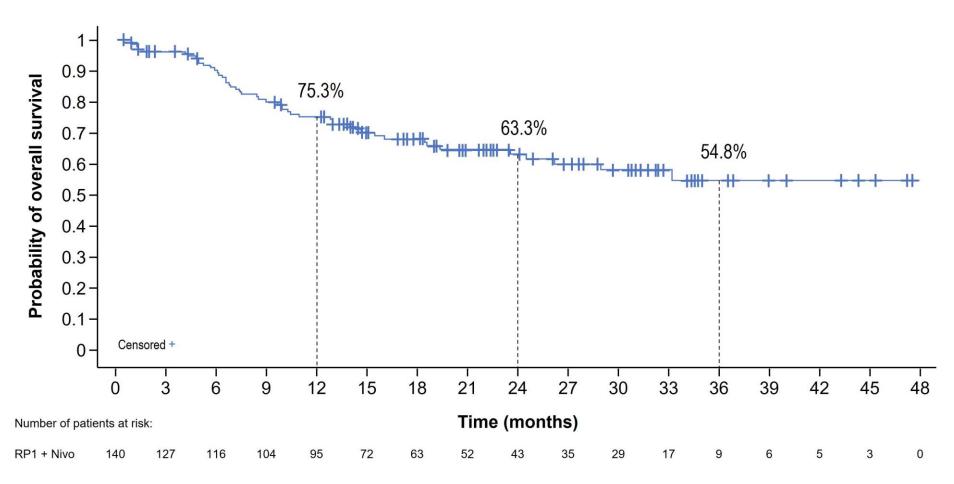


29 Dec 2021/ Day 155



Overall Survival*





- One-, two-, and three-year survival rates were 75.3%, 63.3%, and 54.8%, respectively
- Median overall survival has not been reached.

Safety Profile (N=141)*



Preferred term, n (%)	TRAEs occurring in ≥5% of patients (N = 141)				
	All Grades	Grade 3-4			
≥1 TRAE	126 (89.4)	18 (12.8)			
Fatigue	46 (32.6)	1 (0.7)			
Chills	45 (31.9)	0 (0.0)			
Pyrexia	43 (30.5)	0 (0.0)			
Nausea	31 (22.0)	0 (0.0)			
Influenza-like illness	25 (17.7)	0 (0.0)			
Injection-site pain	21 (14.9)	0 (0.0)			
Diarrhoea	20 (14.2)	1 (0.7)			
Vomiting	19 (13.5)	0 (0.0)			
Headache	18 (12.8)	0 (0.0)			
Pruritus	18 (12.8)	0 (0.0)			
Asthenia	14 (9.9)	1 (0.7)			
Arthralgia	10 (7.1)	1 (0.7)			
Decreased appetite	9 (6.4)	1 (0.7)			
Myalgia	9 (6.4)	0 (0.0)			
Cough	8 (5.7)	0 (0.0)			
Rash	8 (5.7)	0 (0.0)			
Injection-site reaction	7 (5.0)	0 (0.0)			
Vitiligo	7 (5.0)	0 (0.0)			

RP1 combined with nivolumab is generally well tolerated

- Predominantly grade 1 and 2 constitutional-type side effects
- Low incidence of grade 3 events (none occurring in >5% of patients); five grade 4 events in total
- No grade 5 events

Additional grade 3/4 TRAEs (grade 4 italicized):

- Two events each (1.4%): Hypophysitis, rash maculo-popular
- One event each (0.7%): Abdominal pain, acute left ventricular failure, amylase increased, cancer pain, cytokine release syndrome, eczema, enterocolitis, extranodal marginal zone B-cell lymphoma (MALT type), hepatic cytolysis, hyponatraemia, immune-mediated enterocolitis, infusion-related reaction, left ventricular dysfunction, lipase increased, memory impairment, meningitis aseptic, muscular weakness, myocarditis, palmar-plantar erythrodysaesthesia syndrome, paraesthesia, peripheral sensory neuropathy, radiculitis brachial, sinus arrhythmia, splenic rupture, tricuspid valve incompetence, tumor pain, type 1 diabetes mellitus

IGNYTE-3: Confirmatory Phase 3 Trial Design*

RP1 and Nivolumab in Ipi-Nivo Pretreated Patients



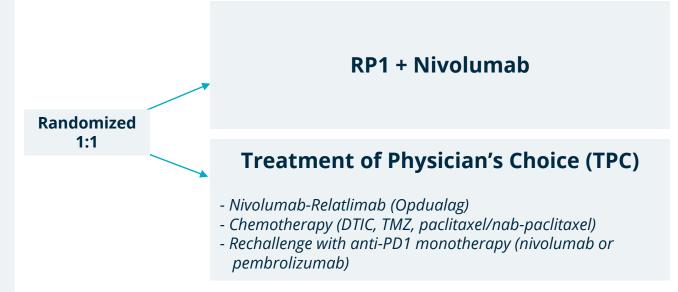
Advanced cutaneous melanoma

Progressed on anti-PD1 AND anti-CTLA-4 OR not candidates for anti-CTLA-4

Up to 2 prior lines of systemic therapy for advanced disease

BRAF mutant patients must have been treated with BRAF/MEK-directed therapy¹

N=~400



Primary EndpointOverall Survival

Key Secondary Endpoints Progression Free Survival and Objective

Response Rate



CERPASS: Confirmed ORR & CRR (ITT population)

Number of patients achieving CR substantially increased with RPI;

CR rate more than doubled for RPI in locally advanced CSCC



BOR (confirmed response)	AII N=211				
n/%	Cemiplimab n=72	RP1+ cemiplimab n=139			
PR	19 (26.4)	20 (14.4)			
SD	14 (19.4)	18 [*] (12.9)			
PD	12 (16.7)	27 (19.4)			
OB	37 (51.4%)	73 (52.5%)			
OR	P=(0.692 ¹			
CD.	18 (25.0%)	53 (38.1%)			
CR	P=0	0.040 ¹			

BOR (confirmed response)	Locally advanced CSCC n=83			atic CSCC 128
n/%	Cemiplimab n=31	RP1+ cemiplimab n=52	Cemiplimab n=41	RP1+ cemiplimab n=87
OR	18 (58.1 %)	33 (63.3 %)	19 (46.3%)	40 (46.0%)
CR	7 (22.6%)	25 (48.1 %	11 (26.6%)	28 (32.2%)

Key Takeaways / Next Steps

- Study missed its primary endpoints (ORR/CRR)
- In locally advanced CSCC, CR rate more than doubled for RP1+cemiplimab vs cemiplimab alone (48.1% vs 22.6%)
- Study continuing to allow time-based endpoints to mature (DOR, PFS and OS)

BOR=best overall response

^{*}One patient shown as SD was a CR due to the confirmatory assessment happening 21 days rather than later 28 days as required per protocol (CRR if included = 38.8%; p=0.031);

^{**&}amp;Nominal p value 0.013

¹Per the protocol p≤0.025 is required for formal statistical success in CERPASS for CRR or ORR alone and p≤0.05 if both endpoints were met

ARTACUS: High Risk of Skin Cancer in Organ Transplant Patients Drives the RP1 Monotherapy Opportunity





Addressable* Solid Organ Transplant Patients with skin cancer⁶

~50%↑ Growth in transplants over the last 8 years¹

Significant Unmet Need

ARTACUS Data

Increased Risk of Cancer

Increased risk of SoT patients developing skin cancer, with a high rate of metastasis²

RP1 showed an 35% ORR and a 22% CRR7 with safety similar to the profile seen in nonimmunocompromised patients

High Rate of Multiple Primary Lesions
Percentage of patients developing multiple primary lessions^{4,5}

RP1 has been **dosed up to 26 times to treat** patients, with the potential for retreatment

Treatment Options Risk Loss of Organ

Rate of organ rejection, due to treatment with ICIs for skin cancer³

RP1 monotherapy has shown the ability to treat skin cancer with **no cases of allograft** rejection⁷

^{*}Addressable defined as locally advanced or metastatic SoT (solid organ transplant) skin cancer patients

aStandardized incidence ratios were calculated by dividing the observed number of NMSC cases by the expected number of cases based on the general population. CSCC, cutaneous squamous cell carcinoma; NMSC, non-melanoma skin cancer; SOT, solid organ transplantation



Opportunity to Establish a Broad Skin Cancer Franchise Built Upon Strong Foundation in Melanoma



RP1 opportunity

Anti-PD1-failed melanoma

~13K patients¹

1L prior adjuvant
2L+ BRAF WT
2L+ BRAF MT

GOAL
Address high unmet need in anti-PD-1 failed settings

Potential NMSC* access via compendia⁺

~11K patients²

1L CSCC
SOT NMSC
Anti-PD1 failed
Immuno-compromised (other)

GOAL
Improve upon the SOC either as combo or as monotherapy

Future growth driver

Neoadjuvant skin cancers**

~45K patients

Neoadjuvant CSCC
Neoadjuvant melanoma

GOAL
Improve cure rates in early-stage patients

~70,000 treatable patients in the US

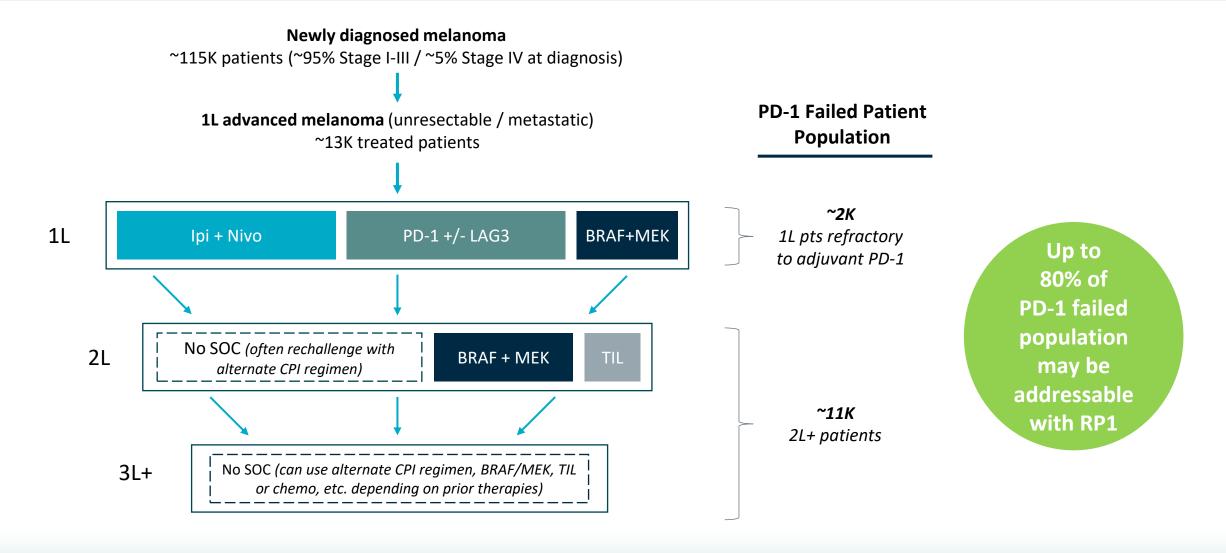
"Opportunity to change the treatment paradigm and ensure all appropriate patients can benefit from RP1"

*Spontaneous use will not be promoted

US Melanoma Patient Journey (2030 est.)



The majority of PD-1 failed patients could be potential candidates for RP1, if approved



Logistics with RP1 Fall Largely within the Established Treatment Paradigm, Regardless of Treatment Setting



	~20% Superficial Tumors Only	~80% Superficial & Deep OR Deep Tumors Only				
Primary Injector	Medical Oncologists / APPs (some accounts may have Surg Onc, Derm, or other in	Interventional Radiologist jectors) (with oncology procedure expertise/focus)				
Primary Site of Care	Office-based setting or hospital	Hospital				
Referral Pathway	No referral necessary	Leverage existing referral networks (used for other IR treatments/procedures)				
Storage of RP1	Typically use "just-in-time" ordering					
Biosafety	Publication of biosafety data intended to support simple cleaning procedures					

Strong Clinical Profile and Commercial Readiness Expected to Enable Rapid and Broad Uptake



RP1+ nivolumab is well positioned to be the first option for melanoma patients who progress on a PD-1 based regimen, if approved:

- Deep and durable systemic responses seen (including for patients with visceral involvement)
- Safety profile appears well tolerated
- "Off-the-shelf" product for ease of administration

IR referral patterns are largely aligned with the typical patient journey with few logistical challenges

- High & overlapping concentration of providers
- Established referral paths between Med Onc's and IR's
- Biosafety handling and cold chain storage are routine in many healthcare settings

Access and Reimbursement should support adoption across treatment settings

- Existing CPT (procedure) codes available for both superficial and image-guided injections
- Most accounts (hospitals and community-based practices) are expected to see RP1 as economically positive

Manufacturing on Track to Support RP1 BLA and Commercialization



Commercial scale in-house manufacturing established

- Pre-BLA meeting with FDA confirmed alignment on Chemistry, Manufacturing and Controls (CMC) plans to support RP1 BLA submission
- 63,000 square foot state-of-the-art facility for GMP manufacturing in Framingham, MA
 - RP1 BLA consistency lot runs complete
 - Commercial inventory build underway
- Scale expected to be sufficient to cover global commercialization of RP1 and RP2
- Commercially attractive cost of goods & 'off the shelf' product practicality









RP2 Expansion Opportunities



- RP2 is a fusion enhanced oncolytic HSV expressing Anti-CTLA-4
 - Delivers anti-CTLA-4 where it is needed (at the tumor) without systemic toxicity of other therapies
- Durable monotherapy activity seen in multiple hard to treat cancers
- Uveal melanoma registration study underway
- Activity seen in patients with liver/lung metastases and immune insensitive cancers
- RP2 and the RPx platform presents potentially significant opportunities in prevalent cancer types with high unmet need

RPx Expansion Process Towards Clinical Development



Universe of Solid Tumors¹



- Positive signal with RPx
- Favorable tumor accessibility
- Disease characteristics/ tumor biology (i.e., baseline T-cell infiltration, dx aggression)



- Addressable patient population
 - Unmet need •
- Time to market

- Level of investment
- Probability of technical success (PTS)
- Sites of Metastases



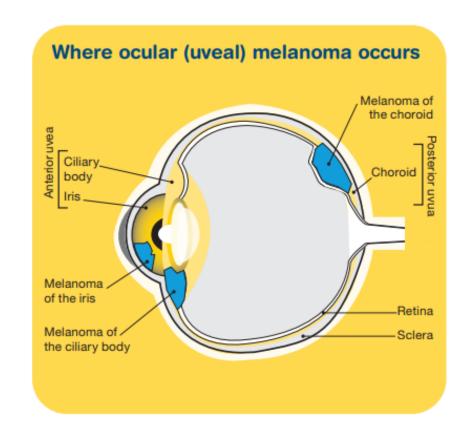
Indications filtered by:

- Favorable development assessment; sizeable opportunity
- Small studies for further PoS (proof of signal) and evaluation
- Areas of scientific interest

Uveal Melanoma and Unmet Need



- Ocular or "uveal" melanoma is a rare cancer with approx. 1,000 cases in the US per year¹
 - The historic median OS is approx. 12 months¹
- Uveal melanoma behaves quite differently from skin melanoma
 - Mostly metastasizes to the liver (approx. 70-90% of cases) and once this occurs only about 10% of these patients survive beyond a year
 - Difficult to treat tumor where CPIs have demonstrated limited activity^{2,3,4}
 - Kimmtrak (tebentafusp) is the 1st approved agent in uveal melanoma in HLA-A-02:01-positive adult patients (approx. 50% of the total population)*
- Unmet need remains high across HLA subtypes



Encouraging Clinical Activity in Uveal Melanoma



- The ORR was 29.4% (all PRs) and DCR was 58.8%
 - At data cutoff, median (range) DOR was approximately $11.5 (\sim 2.8-21.2)^a$ months

	RP2 monotherapy (n = 3)	RP2 + nivolumab (n = 14)	Total (N = 17)	HLA-A*02:01 status	Positive (n = 6)	Negative (n = 11)	Total (N = 17)
Best overall response, n (%)				Best overall response, n (%)			
CR	0	0	0	PR	1 (16.7)	4 (36.4)	5 (29.4)
PR	1 (33.3)	4 (28.6)	5 (29.4)	SD	2 (33.3)	3 (27.3)	5 (29.4)
SD	0	5 (35.7)	5 (29.4)	PD/NE	3 (50.0)	4 (36.4)	7 (41.2)
PD	1 (33.3)	4 (28.6)	5 (29.4)	• Pospopsos word	observed in b	o+h ∐I ∧ ∧2*∩2	· ∩ 1
NE ^b	1 (33.3)	1 (33.3)	2 (11.8)	• Majority of patients (70.6% [12/17]) received both anti–PD-1 and anti–CTLA-4 therapy			
ORR (CR + PR)	1 (33.3)	4 (28.6)	5 (29.4)				
DCR (CR + PR + SD)	1 (33.3)	9 (64.3)	10 (58.8)				

^{*}Data presented at ASCO 2024

Promising Safety Profile in Uveal Melanoma



Patients with TRAEs	Grade 1–2ª	Grade 3	Grade 4–5
RP2 monotherapy (n = 3)	2 (66.7)	0	0
Hypotension	2 (66.7)	0	0
Chills	1 (33.3)	0	0
Hyperhidrosis	1 (33.3)	0	0
Pyrexia	1 (33.3)	0	0
Rash	1 (33.3)	0	0
Vomiting	1 (33.3)	0	0
RP2 + nivolumab (n = 14)	13 (92.9)	6 (42.9) ^b	0
Pyrexia	10 (71.4)	0	0
Chills	7 (50.0)	0	0
Fatigue	4 (28.6)	0	0
Pruritus	4 (28.6)	0	0
Hypotension	2 (14.3)	2 (14.3)	0
Infusion-related reaction	2 (14.3)	1 (7.1)	0
Headache	2 (14.3)	0	0
Influenza-like illness	2 (14.3)	0	0
Nausea	2 (14.3)	0	0

- The most common grade 1 or 2 TRAEs (≥20%) in both cohorts combined were pyrexia, chills, fatigue, hypotension, and pruritus
- Both cases of grade 3 hypotension were transient and readily managed with crystalloid repletion
- There were no grade 4 or 5 TRAEs
- In patients who underwent intrahepatic injections, there were no clinically significant bleeding events

^{*}Data presented at ASCO 2024

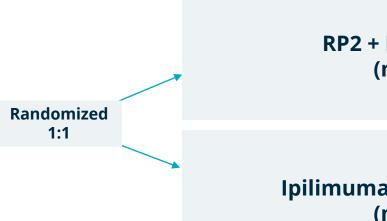
RP2-202: Metastatic Uveal Melanoma Study Registration-Directed Clinical Trial





Immune-checkpoint inhibitor naïve

≤1 prior line



RP2 + Nivolumab (n=140)

Ipilimumab + Nivolumab (n=140)

Dual Primary Independent Endpoints

Progression Free Survival **Overall Survival**

Key Secondary Endpoints

Objective Response Rate, **Duration of Response** and Disease Control Rate

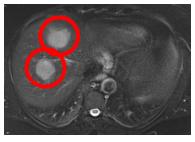
Uveal Melanoma Patient Featured in ITV News

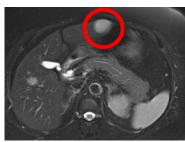
Prior nivolumab+ipilimumab - PR (RP2+nivolumab)

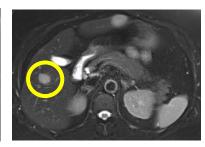


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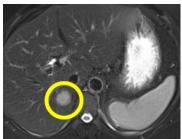
Screening











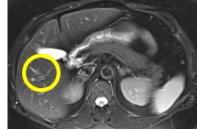


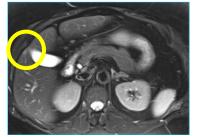
ongoing PR

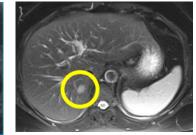












 Patient has ongoing PR at 19 months



"This trial has given me hope in the treatment, the trial, my care, and I'm happy. I don't think about dying anymore at all"

ITV, 03 November 2023



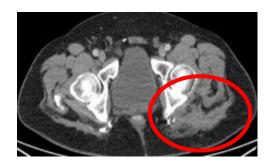
RP2 Monotherapy Patient with Chordoma Prior imatinib - ongoing PR at over 8 months (RP2 monotherapy)



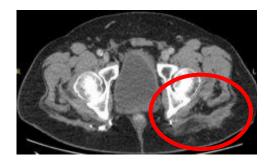
Screening

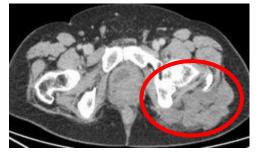


3 months

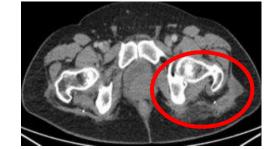


6 months









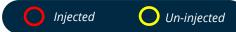






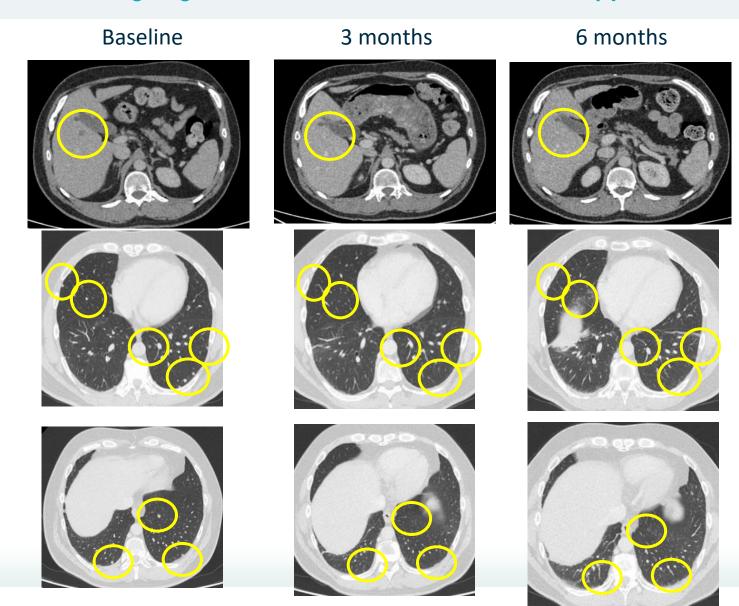
Pt 4401-0029 ongoing PR

- Left gluteal muscle injected
- Liver & >50 small lung lesions also disappeared during treatment



RP2 Monotherapy Patient with Chordoma Prior imatinib - ongoing PR at over 8 months (RP2 monotherapy)





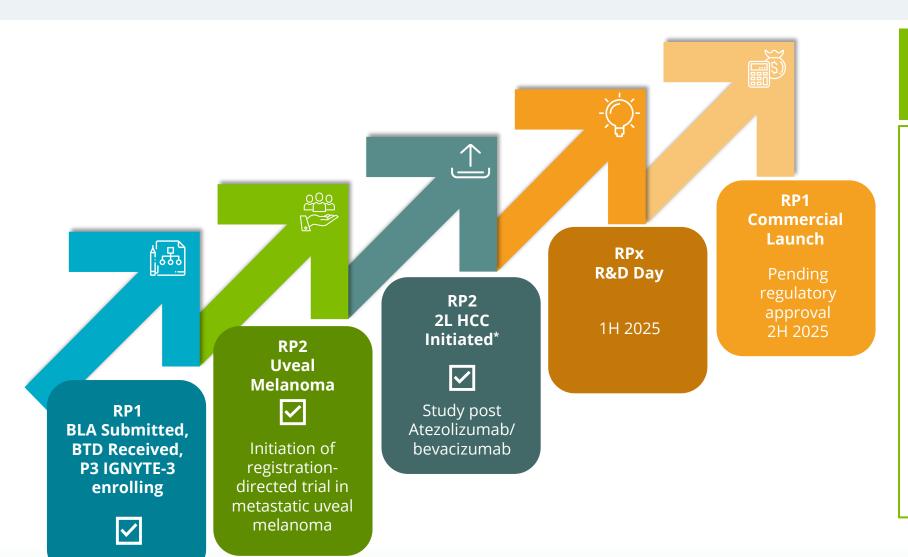
Pt 4401-0029 ongoing PR

- Left gluteal muscle lesion injected
- Liver & >50 small lung lesions also disappeared during treatment



Upcoming Milestones to Drive Value





Positioned to Bring our Oncolytic Immunotherapies to Market

- ✓ All programs wholly owned
- ✓ In house commercial "off-theshelf" manufacture
- ✓ Potential to deliver commercial revenue beginning in 2H 2025
- ✓ Strong financial position with cash of \$432 million as of 30 September 2024
- ✓ Cash runway expected into 2H 2026 (does not include potential revenues)

