

Igniting a Systemic Immune Response to Cancer

Replimune's mission is to revolutionize cancer treatment with therapies designed to activate a powerful and durable full-body anti-tumor response. We imagine a world where cancer is a curable disease.

December 7, 2022

REPLIMUNE INVESTOR EVENT

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, 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 the SARS-COV-2 coronavirus as a global pandemic and related public health issues, the ongoing military conflict between Russia and Ukraine 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.

Today's speakers/Q&A panel





PHILIP ASTLEY-SPARKE Chief Executive Officer Replimune



ROBERT COFFIN Founder, President & Chief Research & Development Officer, Replimune



SUSHIL PATEL Chief Commercial Officer Replimune



MARK MIDDLETON Professor Experimental Cancer Medicine, Head of Oncology, University of Oxford



MICHAEL WONG Professor Melanoma Medical Oncology, University of Texas MD Anderson Cancer Center



KEVIN HARRINGTON Professor Biological Cancer Studies at Institute of Cancer Research, London

SECTION I Overview

RP1: IGNYTE Melanoma Data Snapshot

RP1 Commercial Opportunity

RP2/3 Update

AGENDA



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Overview





Industry leader in tumor directed oncolytic immunotherapy (TDOI) field



Potential to be a cornerstone treatment in immuno-oncology; 3 wholly owned programs (RP1-3)



Major skin cancer franchise planned with RP1; two studies ongoing with registrational intent

- Snaphot data from the IGNYTE clinical trial (anti-PD1 failed melanoma cohort with registrational intent) presented today
 - First 75 patients with 6 months follow up* (target enrollment 125 patients)
- 1L CSCC (CERPASS) randomized controlled trial, primary analysis expected to be presented 1H 2023; accrual complete (211 patients)



Broad mid-stage development planned with RP2/3

• Several fast to market indications to be pursued to leverage commercial infrastructure



Potential for the portfolio to deliver **substantial commercial revenue** expected beginning in 2025

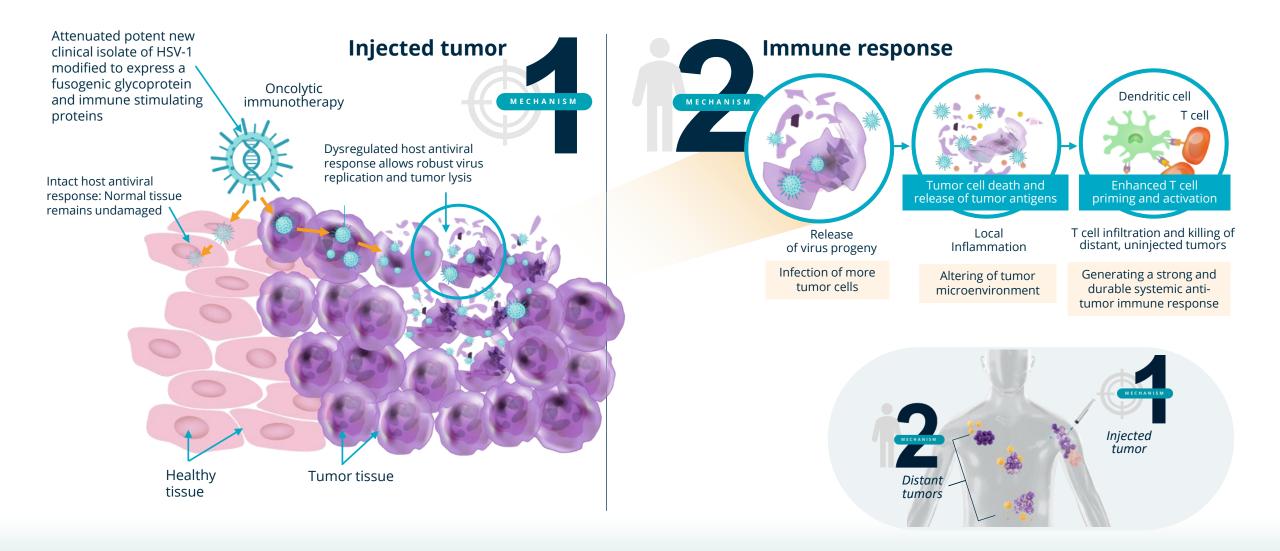


Capitalized to build a fully integrated global biotech company

- US commercial infrastructure
- In-house manufacturing facility established
- Cash & investments of \$372M as of 30 September 2022

Tumor directed oncolytic immunotherapy mechanism of action



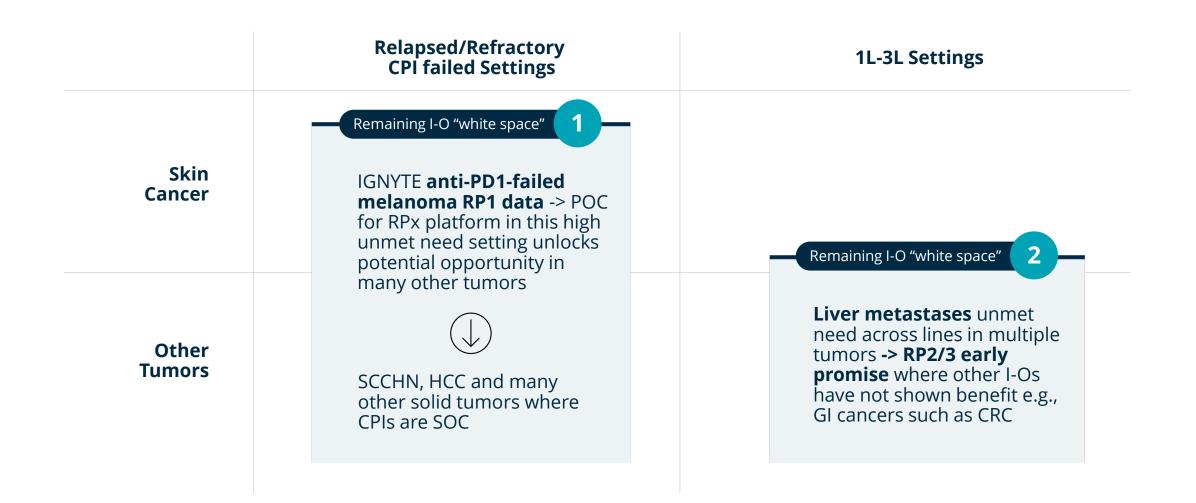


RPx positioning: Platform designed to address a range of tumor types with an optimal balance of potency & safety



	RP1	RP2	RP3	
Payloads	GALV-GP R-, GM-CSF	GALV-GP R-, anti-CTLA-4, GM-CSF	GALV-GP R-, anti-CTLA-4, CD40L, 4-1BBL	
Target	Immunologically responsive tumor types, including anti-PD1 failed	Less immunologically responsive tumor types	Less immunologically responsive tumor types (anticipated further improved compared to RP2)	
Intended indication(s)	Skin cancers (CSCC, anti-PD1 failed melanoma, anti-PD1 failed CSCC, other NMSCs, etc)	Various solid tumor including primary liver cancers and/or those with a high prevalence of liver metastases e.g. HCC, CRC; Early disease (neoadjuvant/LA opportunities) e.g. SCCHN		
Clinical activity in anti-PD1 failed patients demonstrated			Ongoing	
Safety & good tolerability demonstrated			Ongoing	
Injection location	Superficial, nodal & visceral	Superficial, nodal & visceral	Superficial, nodal & visceral	
Systemic activity	Clear systemic effects seen in responding responses are genero	Ongoing		
Other design considerations	Designed for more I-O sensitive tumor types with excellent safety alone & in combination	Increased I-O systemic activity, also with excellent safety alone & in combination	Designed to maximize systemic I-O activity & potency	

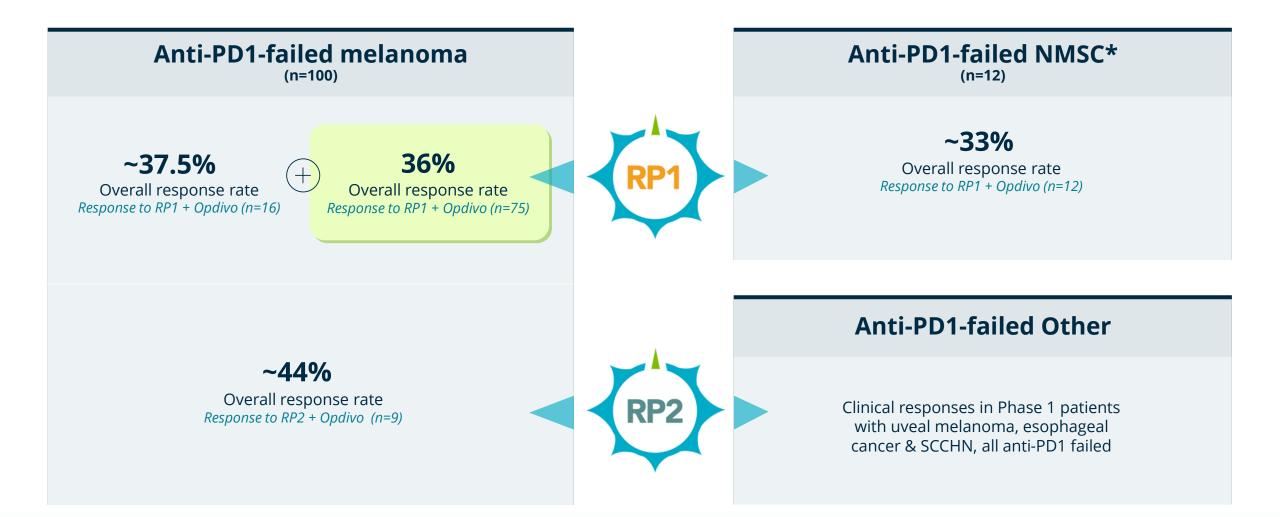
Addressing "White Space" in the I-O landscape



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RP1 and 2: Phase I data summary in anti-PD1 failed cancers*





Roche collaboration validates our GI/liver approach







C Replimune[®]

Replimune Enters into Clinical Collaboration Agreement with Roche for the Development of **RP3 In Colorectal Cancer and** Hepatocellular Carcinoma

RP3 will be developed in combination with atezolizumab and bevacizumab for the third-line treatment of colorectal cancer (CRC) and for the first- and second-line treatment of hepatocellular carcinoma (HCC)

Includes cost sharing for development in third-line CRC and second-line HCC

Update on the RP2/3 Phase 2 development plans to be provided by year

Woburn, MA, December 7, 2022 — Replimune Group, Inc. (NASDAQ: REPL), a clinical stage biotechnology company pioneering the development of a novel class of tumor-directed oncolytic immunotherapies, today announced that the company has entered into a Master Clinical Trial Collaboration and Supply Agreement in relation to Replimune's RP2/3 program in colorectal cancer (CRC) and hepatocellular carcinoma (HCC). Specifically, the companies will collaborate in third-line (3L) CRC and in first- and second-line (1L & 2L) HCC. Under the terms of the agreement, the companies will share costs and Roche will supply its currently approved drugs, atezolizumab and bevacizumab for 2L HCC and 3L CRC combined with RP3. Roche will also supply atezolizumab and bevacizumab for 1L HCC combined with RP3, and for 3L CRC combined with RP2. Approximately 30 patients will be enrolled within each cohort. Replimune will have responsibility for operationalizing the clinical trial.

- Master Clinical Trial Collaboration and Supply Agreement with Roche to study RP3 in combination with Roche's Tecentriq® (atezolizumab) and Avastin® (bevacizumab) for treatment of 1L & 2L HCC and 3L CRC
- In keeping with our philosophy of partnering with "the industry **leaders**" in indications where our oncolytic immunotherapies have the potential to become a key cornerstone of treatment
 - REGN in CSCC, BMS in melanoma and Roche in HCC/CRC

SECTION I Overview

SECTION II

RP1: IGNYTE Melanoma Data Snapshot

RP1 Commercial Opportunity

RP2/3 Update

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Overview of the current 2nd line melanoma landscape



- There are no good options for melanoma patients having progressed on anti-PD1 therapy (including patients who progressed on adjuvant anti-PD1 therapy)
- For patients who have not already received anti-CTLA-4 therapy, single agent Yervoy or Yervoy+Opdivo is an option
 - Expected response rate approx. 10%-30% for Yervoy or Yervoy/Opdivo combination, depending on the setting and whether prior progressive disease was confirmed, but with limited durability and high toxicity^{*}
- To date, while approved in the 1L setting adding anti-LAG3 to anti-PD1 has not demonstrated meaningful efficacy in anti-PD1 failed melanoma patients (BMS & Regeneron data)
- For BRAF mutant patients, if not already BRAF/MEK experienced, BRAF targeted therapy is an option, but in general responses are transient
- TIL therapy (lovance & others) has shown response rates in the 30% range, and may become FDA approved, but the treatment comes with considerable toxicity (nearly all patients experience grade 3/4 toxicity) and practicality considerations

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Data snapshot in anti-PD1 failed melanoma



- First 75 patients from the 125 patient registration intended cohort of IGNYTE in anti-PD1 failed melanoma at least 6 months follow up, median follow up 9.96 months
- ORR 36% across the population as a whole; CR rate 20%
 - Consistent with prior data in 16 anti-PD1 failed melanoma patients in the phase 2 melanoma cohort
 - Includes patients with moderate to high tumor burden of each type
 - Substantial majority of responses are in patients who did not respond to prior anti-PD1 therapy
 - Clinically meaningful ORR across all sub-groups analyzed i.e. by stage, setting and prior therapy
- 85% of responses are ongoing
- Responses seen in both injected <u>and</u> un-injected lesions

• Impressive abscopal (un-injected) responses seen, including of visceral disease

- **RP1 combined with Opdivo continues to be well-tolerated**, with mainly Grade 1-2 "on target" side effects observed
- While PFS/OS data is immature, promising positive trends observed

IGNYTE – Phase 2 study design (anti-PDI failed cutaneous melanoma cohort; intended for registration)



Radiographic imaging (CT) at baseline and every 8 weeks from first dose and every 12 weeks after confirmation of response 2 Weeks 2 Weeks 28 days **First Dose RP1+Opdivo Opdivo** 24 2 Weeks Opdivo Screening 1X10^7, 240 mg 480 mg (Q4W) RP11X10^6 0 mg 100 Day Safety **Anti-PD1 Failed Cutaneous** Follow-Up Melanoma (N=125) Cycle 1 Cycle 2-8 Cycle 9 Cycles 10-30* 3-year follow-up post first dose of RP1

Primary Objectives

- To assess the safety and tolerability of RP1 in combination with nivolumab
- To assess the efficacy of RP1 in combination with nivolumab as determined by ORR using modified RECIST 1.1 criteria

Secondary Objectives

To assess the efficacy of RP1 in combination with nivolumab as determined by DOR, CR rate, DCR, PFS, and 1-year and 2-year OS

Key Eligibility

Advanced or metastatic non-neurological solid tumors without treatment options; at least 1 measurable and injectable lesion (\geq 1cm LD); adequate organ function; no prior treatment with oncolytic therapy. ECOG performance status (PS) 0-1.

Tumor response assessment

Criteria for CPI-failed:

At least 8 weeks of prior anti-PD1, confirmed progression while on anti-PD1, anti-PD1 must be the last therapy before the clinical trial. Patients on prior adjuvant therapy must have progressed while <u>on</u> prior adjuvant treatment (confirmed by biopsy).

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Demographics



	Initial IGNYTE melanoma cohort anti-PD1 failed patients N=16	Anti-PD1 failed melanoma cohort first 75 patients N=75	Combined N=91
Age			
Range/Median	28-78/60	31-91/60	28-91/60
Sex, n (%)			
Female	7 (43.8%)	22 (29.3%)	29 (31.9%)
Male	9 (56.3%)	53 (70.7%)	62 (68.1%)
Prior Therapy, n (%)			
Failed anti-PD1 but not also anti-CTLA-4	7 (43.8%)	52 (69.3%)	59 (64.8%)
Also failed anti-CTLA-4	9 (56.3%)	22 (29.3%)	31 (34.1%)
Also failed BRAF/MEK inhibition	0 (0.0%)	7 (9.3%)	7 (7.7%)
Also failed other therapy	4 (25.0%)	9 (12.0%)	13 (14.3%)
Received prior anti-PD1 only as adjuvant therapy*	4 (25.0%)	26 (34.7%)	30 (33.0%)
Disease stage, n (%)			
lllb	0 (0.0%)	3 (4.0%)	3 (3.3%)
llic	0 (0.0%)	26 (34.7%)	26 (28.6%)
IVM1a	3 (18.8%)	12 (16.0%)	15(16.5%)
IVM1b	6 (37.5%)	14 (18.7%)	20 (22.0%)
IVM1c	7 (43.8%)	20 (26.7%)	27 (29.7%)
LDH, n(%)	12 (24 22()	10 (55 200)	C2 (C2 40()
LDH<=ULN	13 (81.3%)	49 (65.3%)	62 (68.1%)
LDH>ULN	3 (18.8%)	21 (28.0%)	24 (26.4%)
Unknown	0 (0.0%)	5 (6.7%)	5 (5.5%)
Baseline ECOG status, n(%)			
0	13 (81.3%)	48 (64.0%)	61 (67.0%)
1	3 (18.8%)	27 (36.0%)	30 (33.0%)

Notes:

- Baseline PD-L1 status is currently being generated
- Data from the prior 16 patients showed response to be independent of baseline PD-L1 status

Treatment related AEs – all IGNYTE skin cancer patients treated with RP1 combined with Opdivo (N=187)



Preferred Term	Grade 1-2 (>10%) (%)	Grade 3 (all) (%)	Grade 4 (all) (%)	Grade 5 (all) (%)	Total (N=187) (%)*
Fatigue	60 (32.1%)	6 (3.2%)	0	0	64 (34.2%)
Chills	54 (28.9%)	0	0	0	54 (28.9%)
Pyrexia	47 (25.1%)	1 (0.5%)	0	0	47 (25.1%)
Nausea	39 (20.9%)	0	0	0	39 (20.9%)
Influenza like illness	26 (13.9%)	0	0	0	26 (13.9%)
Pruritus	25 (13.4%)	1 (0.5%)	0	0	25 (13.4%)
Diarrhoea	18 (9.6%)	3 (1.6%)	0	0	19 (10.2%)
Rash	15 (8.0%)	1 (0.5%)	0	0	16 (8.6%)
Decreased appetite	11 (5.9%)	1 (0.5%)	0	0	12 (6.4%)
Rash maculo-papular	9 (4.8%)	4 (2.1%)	0	0	12 (6.4%)
Arthralgia	9 (4.8%)	1 (0.5%)	0	0	9 (4.8%)
Injection site reaction	7 (3.7%)	1 (0.5%)	0	0	7 (3.7%)
Dyspnoea	4 (2.1%)	1 (0.5%)	0	0	5 (2.7%)
Infusion related reaction	3 (1.6%)	2 (1.1%)	0	0	4 (2.1%)
Lipase increased	4 (2.1%)	2 (1.1%)	1 (0.5%)	0	4 (2.1%)
Amylase increased	3 (1.6%)	1 (0.5%)	0	0	3 (1.6%)
Colitis	2 (1.1%)	1 (0.5%)	0	0	3 (1.6%)
Eczema	3 (1.6%)	1 (0.5%)	0	0	3 (1.6%)
Hypophysitis	2 (1.1%)	1 (0.5%)	0	0	3 (1.6%)
Abdominal pain	1 (0.5%)	1 (0.5%)	0	0	2 (1.1%)
Arthritis	1 (0.5%)	1 (0.5%)	0	0	2 (1.1%)
Hypertension	1 (0.5%)	1 (0.5%)	0	0	2 (1.1%)
Hyponatraemia	2 (1.1%)	1 (0.5%)	0	0	2 (1.1%)
Hypotension	1 (0.5%)	1 (0.5%)	0	0	2 (1.1%)
Immune-mediated hepatitis	0	2 (1.1%)	0	0	2 (1.1%)
Muscular weakness	1 (0.5%)	1 (0.5%)	0	0	2 (1.1%)
Myocarditis	1 (0.5%)	0	1 (0.5%)	0	2 (1.1%)
Paraesthesia	1 (0.5%)	1 (0.5%)	0	0	2 (1.1%)
Acute left ventricular failure	0	0	1 (0.5%)	0	1 (0.5%)
Cytokine release syndrome	0	0	1 (0.5%)	0	1 (0.5%)
Ejection fraction decreased	0	0	1 (0.5%)	0	1 (0.5%)
Hepatic cytolysis	0	0	1 (0.5%)	0	1 (0.5%)
Localised oedema	1 (0.5%)	1 (0.5%)	0	0	1 (0.5%)
Lymph node pain	1 (0.5%)	1 (0.5%)	0	0	1 (0.5%)
Palmar-plantar erythrodysaesthesia syndrome	1 (0.5%)	1 (0.5%)	0	0	1 (0.5%)
Supraventricular tachycardia	0	0	1 (0.5%)	0	1 (0.5%)
Confusional state, Enterocolitis, Marginal zone B-cell lymphoma, Hypovolaemic shock, Left ventricular dysfunction, Liver function test increased, Memory impairment, Meningitis aseptic, Mental status changes, Oedema, Oral candid	0	1 (0.5%)	0	0	1 (0.5%)
Immune-mediated myocarditis	0	1 (0.5%)	0	1 (0.5%)	1 (0.5%)

Key Takeaway

Generally grade 1/2 "on target" side effects (i.e. indicative of systemic immune activation; highlighted), combined with the underlying safety profile of Opdivo

IGNYTE data: ORR



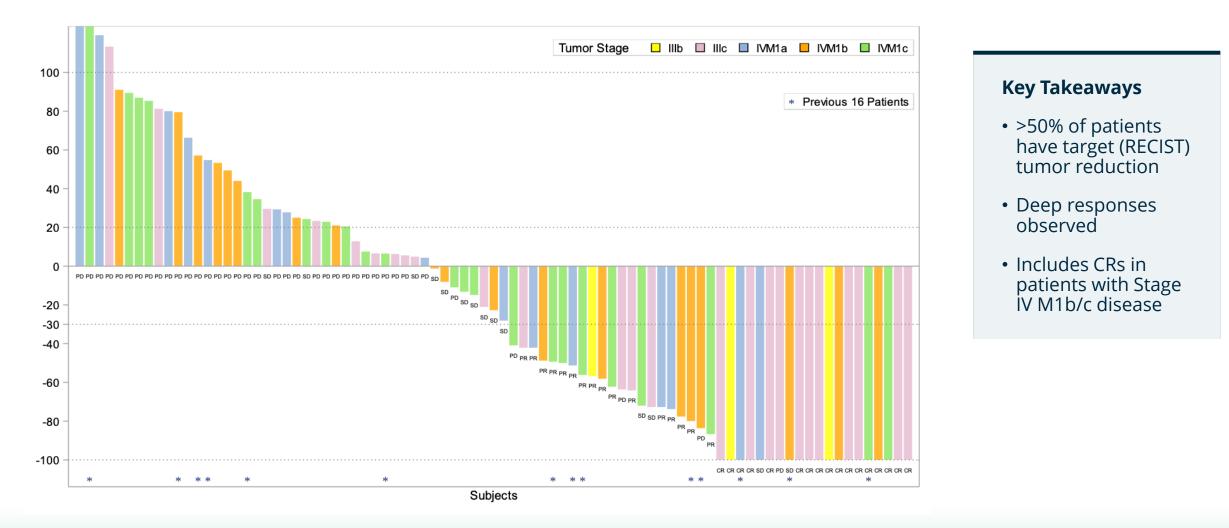
	N=16	N=75	N=91					
	Prior patients N=16 n(%)	Data snapshot patients N=75 n(%)	All patients N=91 n(%)	Prior adjuvant anti-PD1 only N=30 n(%)	Prior anti-PD1 other than adjuvant N=61 n(%)	Prior anti-PD1 & anti-CTLA4 N=31 n(%)	Stage IIIb/IIIc/IVa N=44 n(%)	Stage IVb/IVc N=47 n(%)
Best Overall Response								
CR	2 (12.5%)	15 (20.0%)	17 (18.7%)	9 (30.0%)	8 (13.1%)	2 (6.3%)	13 (29.5%)	4 (8.5%)
PR	4 (25.0%)	12 (16.0%)	16 (17.5%)	6 (20.0%)	10 (16.4%)	7 (21.9%)	7 (15.9%)	9 (19.1%)
SD	1 (6.3%)	13 (17.3%)	14 (15.4%)	7 (23.3%)	7 (11.5%)	5 (15.6%)	6 (13.6%)	8 (17.0%)
PD	8 (50.0%)	32 (42.7%)	40 (44.0%)	8 (26.7%)	32 (52.5%)	14 (43.8%)	18 (40.9%)	22 (46.8%)
ORR	6 (37.5%)	27 (36.0%)	33 (36.3%)	15 (50.0%)	18 (29.5%)	9 (29.0%)	20 (45.4%)	13 (27.7%)
DCR (CR+PR+SD)	7 (43.8%)	40 (53.3%)	47 (51.6%)	22 (73.3%)	25 (41.0%)	14 (45.2%)	26 (59.1%)	21 (44.7%)

Key Snapshot Takeaways

- 36% ORR overall
- At least 27.7% ORR in all sub-groups analyzed
- Particularly high ORR (50%) and CR rate (30%) in patients who progressed while on prior adjuvant anti-PD1 therapy
- Data from the 75 patient snapshot are consistent with the 16 patients enrolled into the prior melanoma cohort

Waterfall plots: All patients Maximum change in target lesions; patients with at least one follow up assessment

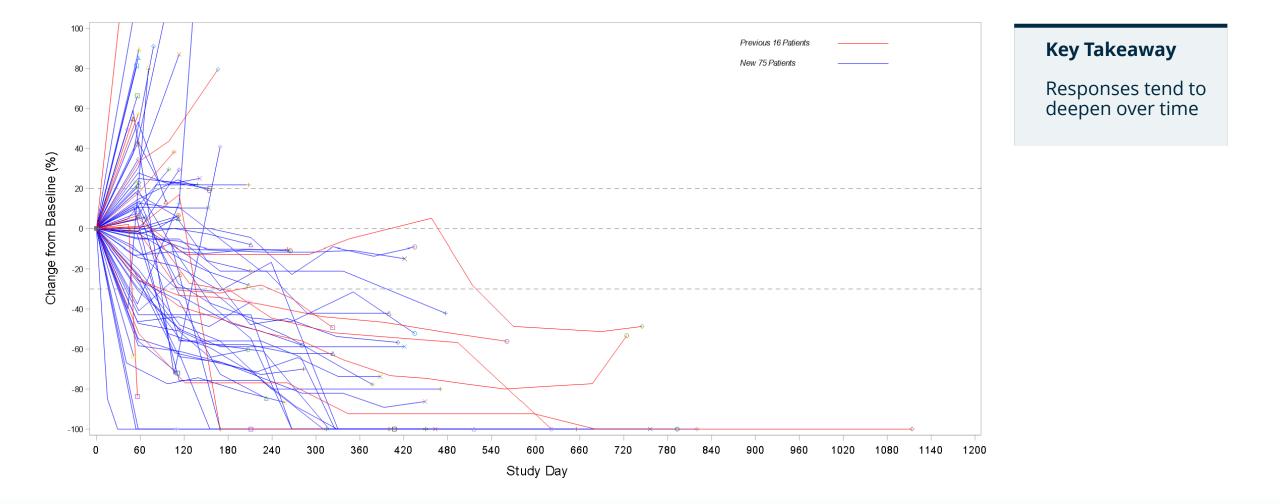




Spider plots: All patients Patients with at least one follow up assessment

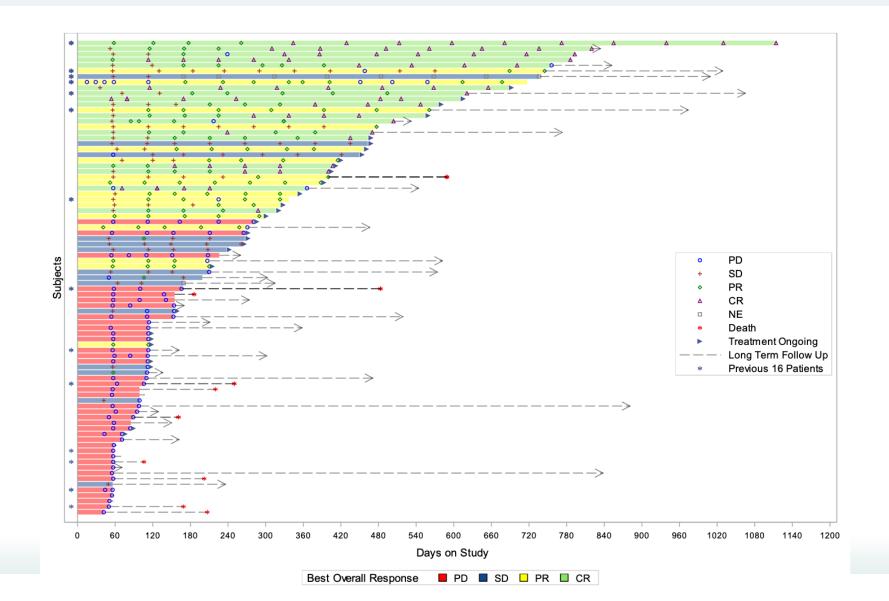
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Swimmer's plots: All patients Patients with at least one follow up assessment





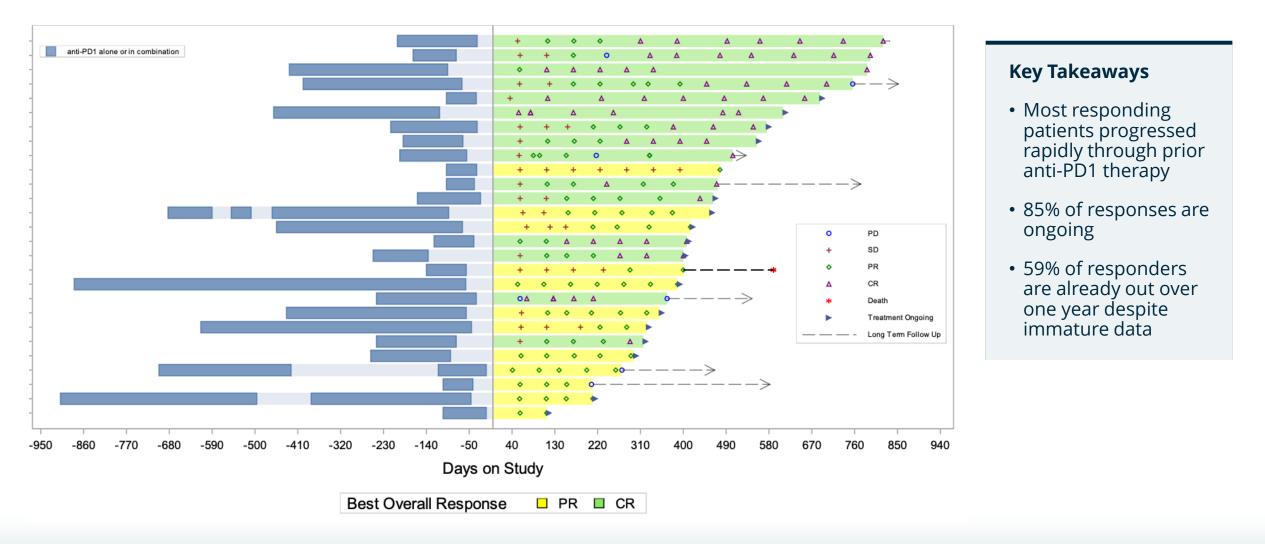
Key Takeaway

Responses are durable, indicating systemic overall benefit

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Timing and duration of prior anti-PD1 therapy for new responding patients





Response of injected & not injected lesions for responding patients

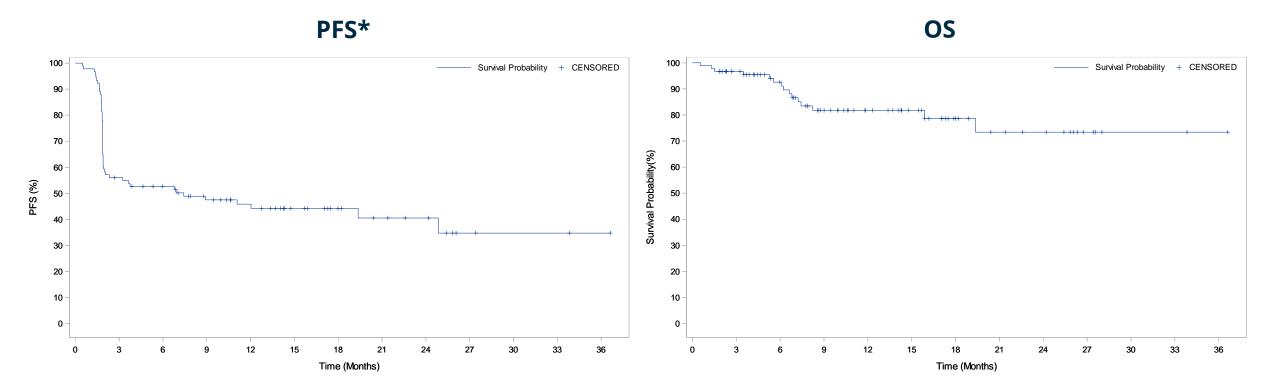




Injected lesions – all lesions as recorded in the database; not injected lesions – as recorded in the database supplemented by review of the CT scans (not all lesions may have been captured) © 2022 Replimune Group Inc.

Preliminary PFS and OS : All (N=91)





Key Takeaways

- While PFS relatively immature, a plateau appears to be developing
- OS data is immature but also appears promising

*The protocol requires PD to be confirmed, to allow for pseudo-progression. The definition of a PFS event is therefore PD where PD was subsequently confirmed (date of event = date of initial PD), any event of PD where treatment was then discontinued, or death from any cause

Patient 1121-2011: Prior Opdivo and Keytruda, Stage IVM1c



29 JUL 2021 / Screening

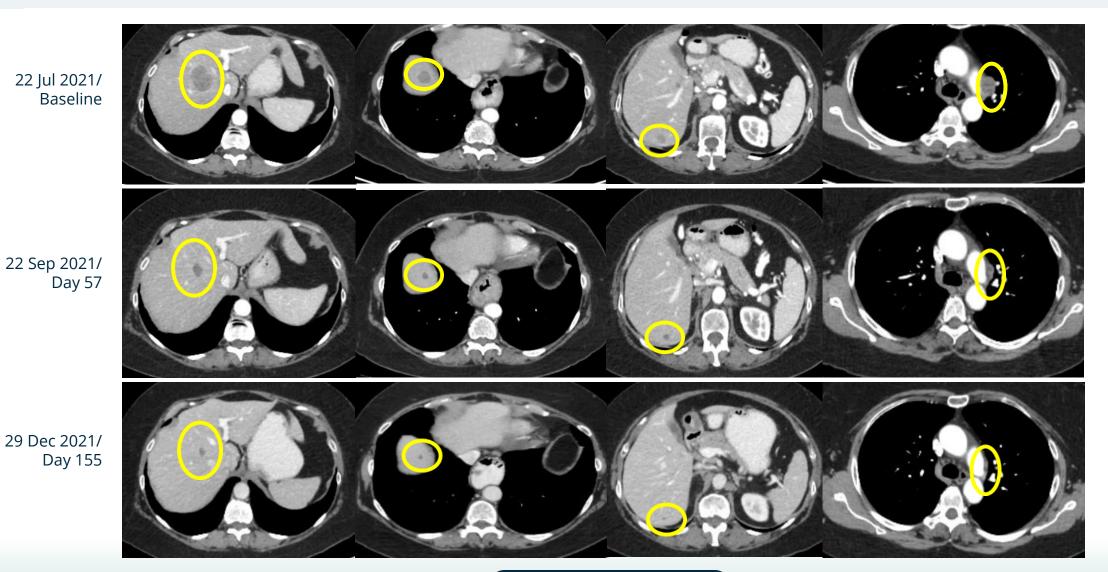
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Patient 1121-2011 Cont'd: Prior Opdivo, Keytruda: Stage IVM1c

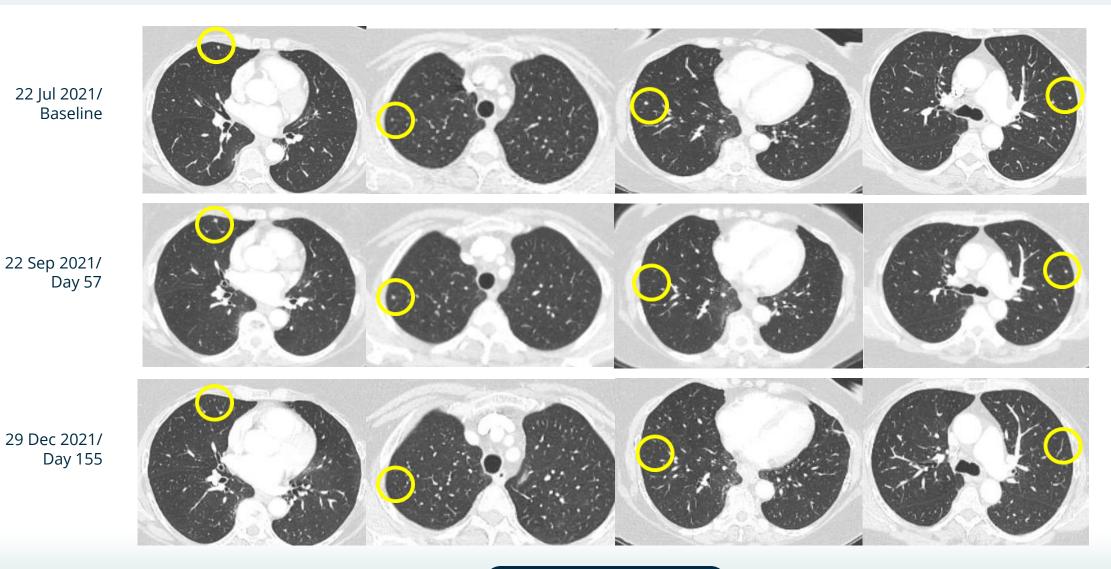






Patient 1121-2011 Cont'd: Prior Opdivo, Keytruda; Stage IVM1c





Injected O Un-injected

Patient 4405-2007: Prior Keytruda, Yervoy/Opdivo: Stage IVM1b







Patient 4405-2007 Cont'd: Prior Keytruda, Yervoy/Opdivo: Stage IVM1b



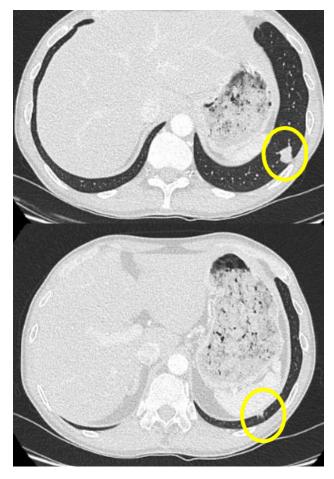
6 Aug 2021/Baseline



24 Jan 2022



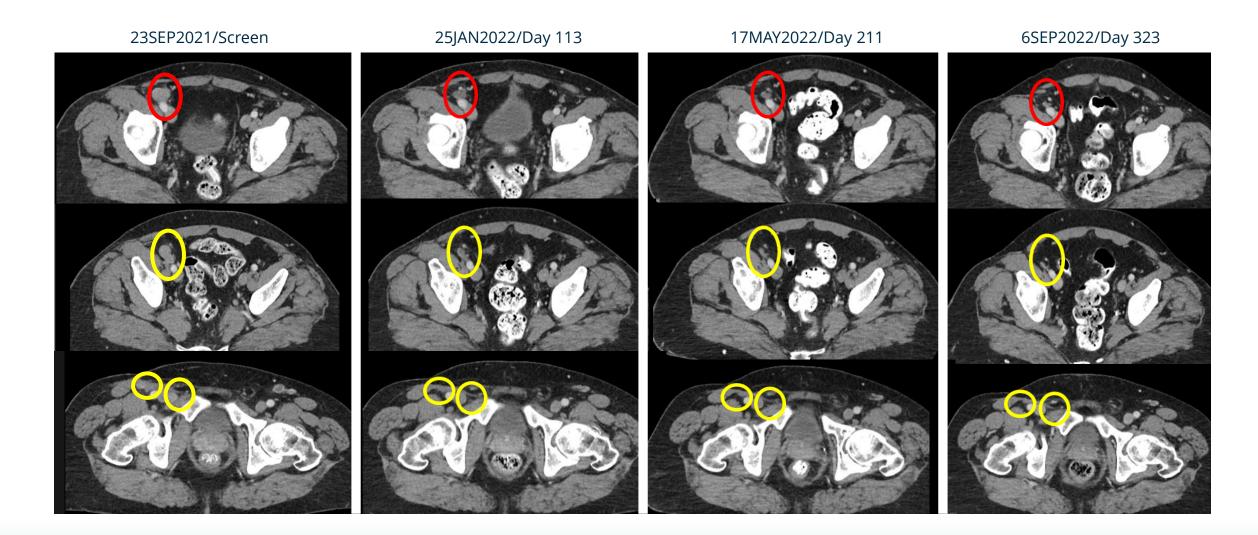
31 Aug 2022





Patient 3410-2001: Prior adjuvant Keytruda: Stage IVM1a

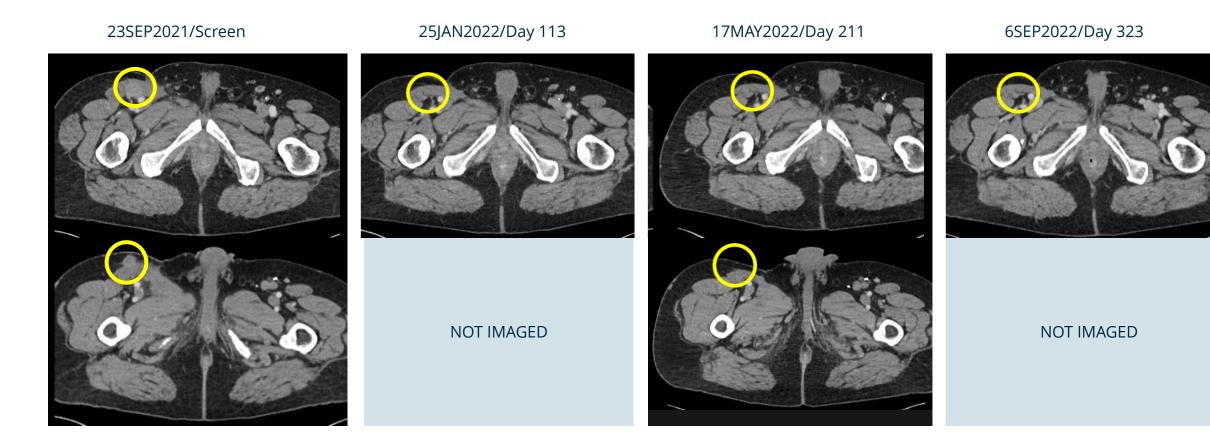






Patient 3410-2001 Cont'd: Prior adjuvant Keytruda: Stage IVM1a

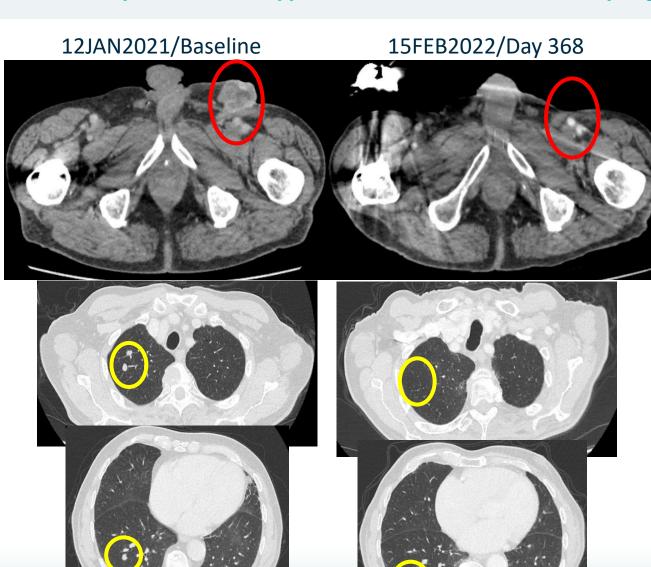






Patient 4401–2021: Prior Tafinlar/Mekinist, Keytruda Disease presentation type: Prior BRAF/MEK as well as progressed on anti-PD1 Stage IVM1c



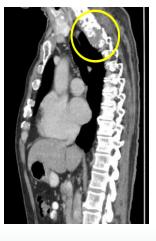


12JAN2021/Baseline













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Data snapshot date: 3 Nov 2022

Summary & Conclusions



- RP1 combined with Opdivo **continues to have an attractive safety profile**, with generally 'on target' and transient Grade 1-2 side effects, i.e. indicative of systemic immune activation
- 36% ORR and 20% CRR was seen
- 85% of responses are durable to date
- Most responses are in patients who did not respond to prior anti-PD1 therapy
- RP1 combined with Opdivo has shown **clinically meaningful activity across the range of anti-PD1 failed cutaneous melanoma presentations**:
 - Failed adjuvant anti-PD1 therapy
 - Failed one or more lines of anti-PD1 therapy for recurrent or metastatic disease
 - Failed anti-PD1 combined with anti-CTLA-4 therapy
 - This includes in patients with moderate to high tumor burden of each type
- Responses seen in both injected and in un-injected lesions
 - 70% of responding patients have both injected & un-injected lesions
 - Impressive abscopal responses, including in visceral disease
- Preliminary PFS/OS data are promising



SECTION I Overview

RP1: IGNYTE Melanoma Data Snapshot

RPI Commercial Opportunity

RP2/3 Update

AGENDA



Translating the commercial opportunity in anti-PD1 failed melanoma

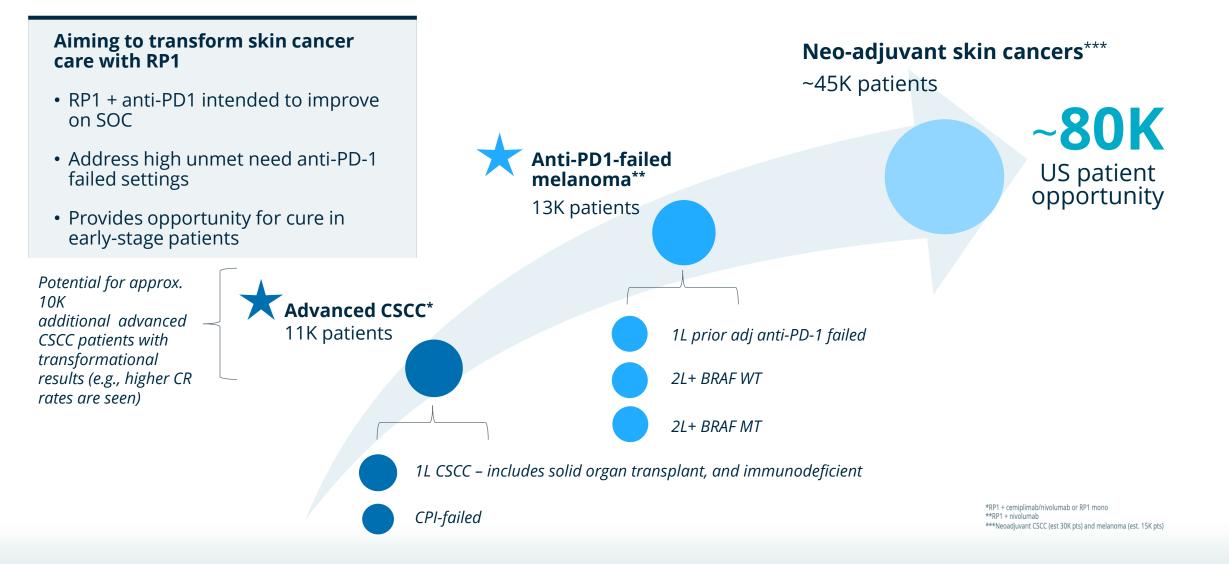


- The IGNYTE data supports a potential sizeable commercial opportunity to address the complete range of anti-PD1 failed melanoma patients regardless of tumor burden, setting, stage, line of treatment, resistance profile, or prior treatment(s)
- Increasing anti-PD1 treatment of early disease following neoadjuvant and/or adjuvant data for stage III-IV patients represents an attractive opportunity as.....
 - Approx. a third of patients will relapse on anti-PD1 treatment within a year¹, and are expected to make up a significant and growing population in the future
 - Given the strong data in prior adjuvant failed anti-PD1 patients including a high rate of complete response, RP1+Opdivo provides a compelling potential option for these patients
- **RP1+Opdivo is very well tolerated especially relative to other options** including Yervoy, Yervoy+Opdivo, Lenvima (lenvatininb)+Keytruda and TIL therapy all of which have high rates of grade 3-4 toxicity
 - This provides an **opportunity to increase the treated market as many patients currently forego treatment** due to toxicity concerns



RP1: A significant skin franchise opportunity



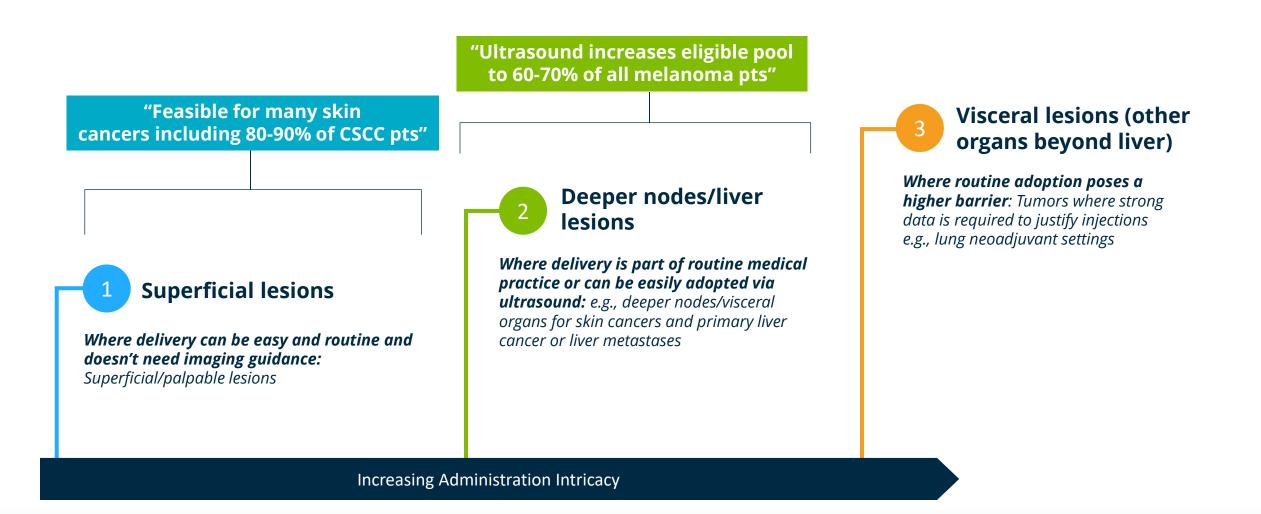


Note: CSCC US treated patient population for 2029 based on multiple sources including IQVIA claims, primary market research, and company data.

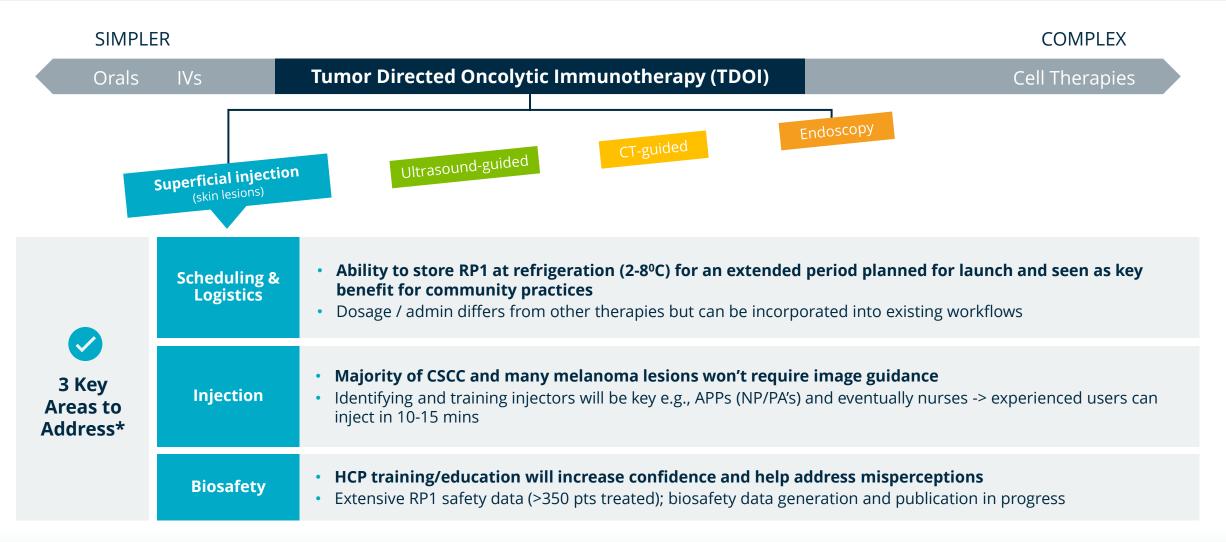
Melanoma US treated patient population for 2029 based on CancerMPact® Patient Metrics, Cerner Enviza (available from www.cancermpact.com Accessed 11 Oct 2022), with adjustments to © 2022 Replimune Group Inc. future 2L+ treatment rates based on primary market research

RP1: Initial launch in skin cancers maximizes the chance of commercial success due to high unmet need & tumor directed administration feasibility





Superficial skin lesion injections are feasible and can routinely be incorporated across the majority of practice settings



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Intended RP1 launches in skin cancer: Critical success factors for the RP1 go to market model



	Confidence & Positive Experience	Community Launch
High PRs and CRs with long duration are meaningful clinical endpoints in <u>both</u> skin indications		
Strong US patient enrollment/site involvement in REPL skin studies	\checkmark	
Skin cancers treated by the same physicians (and also significant KOL overlap in CSCC and melanoma)	\checkmark	\checkmark
Transformative data including in high unmet need anti-PD1-failed pts drive customer excitement to adopt a new modality	\checkmark	\checkmark
High % of easily injectable lesions in skin tumor types (no need for image guidance for most patients)	\checkmark	\checkmark
Two indications within a short period increases customer experience/confidence due to higher patient volume		\checkmark
Adding RP1 onto vs. replacing anti-PD1 aligns with practice "buy and bill" economics to use the combination		\checkmark

Investment in manufacturing to support full commercialization



Commercial scale in-house manufacturing established

- 63,000 square foot state-of-the-art facility for GMP manufacturing
 - RP1-3 technology transfer from CMO successfully completed
 - *RP1 released to clinic post comparability analysis*
 - RP1 BLA consistency lot runs underway
- Scale expected to be sufficient to cover global commercialization of all Replimune's product candidates at full capacity
- Commercially attractive cost of goods & 'off the shelf' product practicality





SECTION I Overview

RP1: IGNYTE Melanoma Data Snapshot

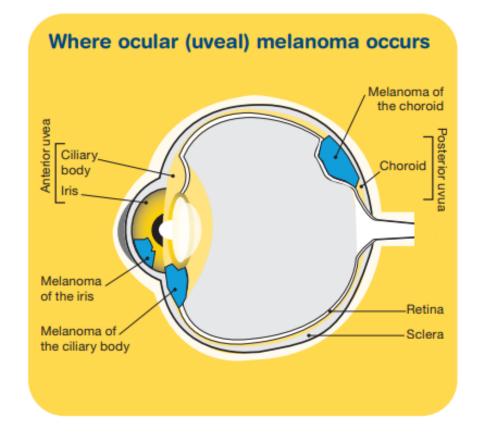
RP1 Commercial Opportunity

RP2/3 Update

AGENDA

RP2: Uveal melanoma disease context & unmet need

- Ocular or "uveal" melanoma is a rare cancer with approx. 1,000 cases in the US per year¹
 - Originates from melanocytes and can occur in several eye locations
 - 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
 - A difficult to treat tumor where **CPIs have previously 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 for uveal melanoma patients remains high, including improved efficacy/tolerability, effective options for HLA negative patients, and options for Kimmtrak and anti-PD1 failed patients





42

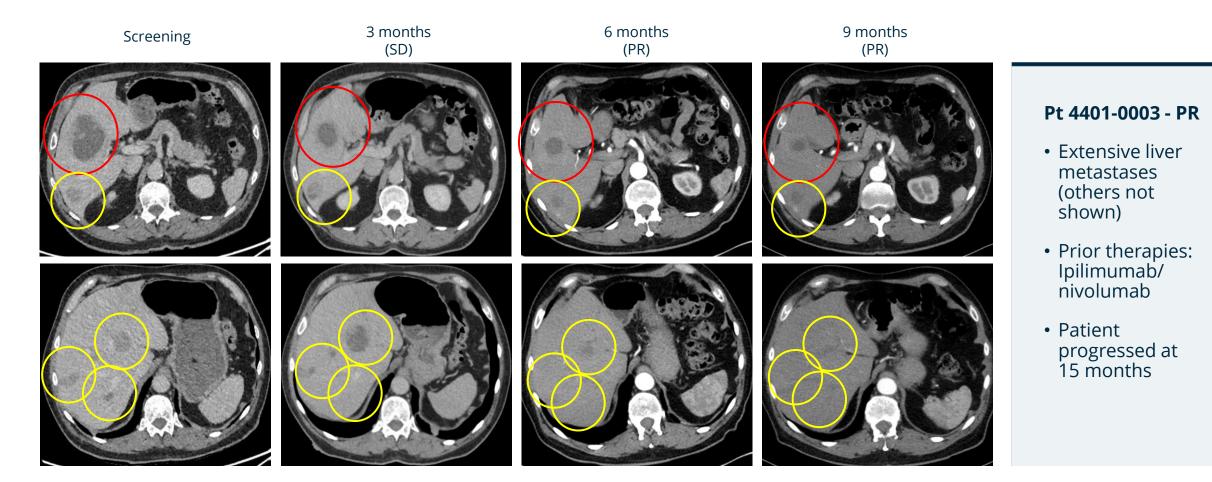
Uveal melanoma patients treated with RP2 4 out of 14 patients for whom the outcome is known responded (28.6%) – all anti-PD1 failed



Patient #	RP2 monotherapy or combination w/ nivolumab	Prior therapies	Sites of disease	Best response	Current status
4401-0002	Monotherapy	lplimumab+ nivolumab, temozolomide , selumetinib+ vistusertib , carboplatin	Lung, liver, abdomen, chest, lymph nodes, subcutaneous, bone	PD	Died
4401-0003	Monotherapy	lplimumab+ nivolumab	Liver	PR to 15 months	Died post PD
4401-0007	Monotherapy	lplimumab+ nivolumab , <u>intratumoral</u> AGI-134	Liver, kidney, head and neck, peritoneal, intramuscular, subcutaneous, bone	Not done (non- evaluable)	Died
4401-0014	Combination	None	Liver	SD	Died
4402-0007	Combination	Nivolumab	Orbital mass, bone (pelvis, vertebral), cheek	PR	Ongoing PR (CR by PET scan reported by investigator) at 21 months from first dose
4401-0021	Combination	Selumtinib+paclitaxel, pembrolizumab, ipilimumab, melphalan intrahepatic chemoperfusion	Liver, GI lymph nodes, abdominal wall, leg,	SD	Died
4401-0022	Combination	Ipilimumab, dacarbazine	Liver	Not captured	Died
4402-0014	Combination	lpilimumab , pembrolizumab	Retroperitoneal, SCF	PR	Ongoing PR at 12 months from first dose
4403-0014	Combination	IMCGP100	Liver	PD	Died
4403-0015	Combination	IMCGP100 , nivolumab+ ipilimumab	Lung, liver, vertebra	SD	Patient withdrew consent
4401-0026	Combination	Ipilimumab+ nivolumab , chemosaturation	Liver	PD	Lost to follow-up
4403-0017	Combination	lpilimumab +nivolumab	Liver	PR	Ongoing PR at 9 months from first dose
4402-0018	Combination	None	Liver	SD	In follow up
4402-0019	Combination	Ipilimumab , pembrolizumab	Liver, perirenal	PD	In Follow-up
4403-0018	Combination	Nivolumab+ ipilimumab	Liver	SD	On treatment
4403-0019	Combination	lpilimumab+ nivolumab	Liver	Not done yet	On treatment
3412-0001	Combination	Ipilimumab+nivolumab, IL-2, carboplatin, paclitaxel	Liver, lung	Not done yet	On treatment

Patient 201-4401-0003: Uveal melanoma Prior Yervoy/Opdivo - PR (RP2 monotherapy)

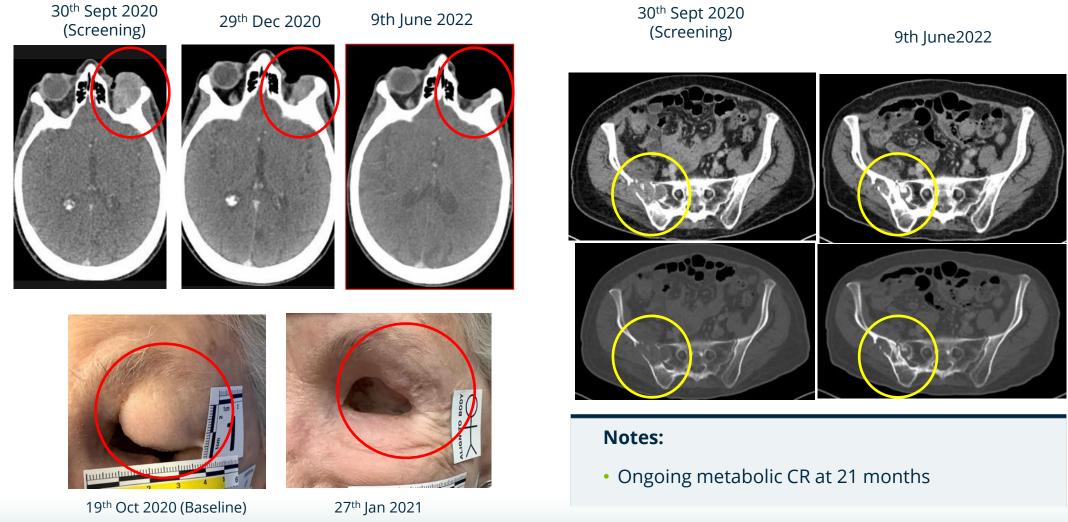






Patient 201-4402-0007: Uveal melanoma Prior Opdivo – PR (RP2+Opdivo)





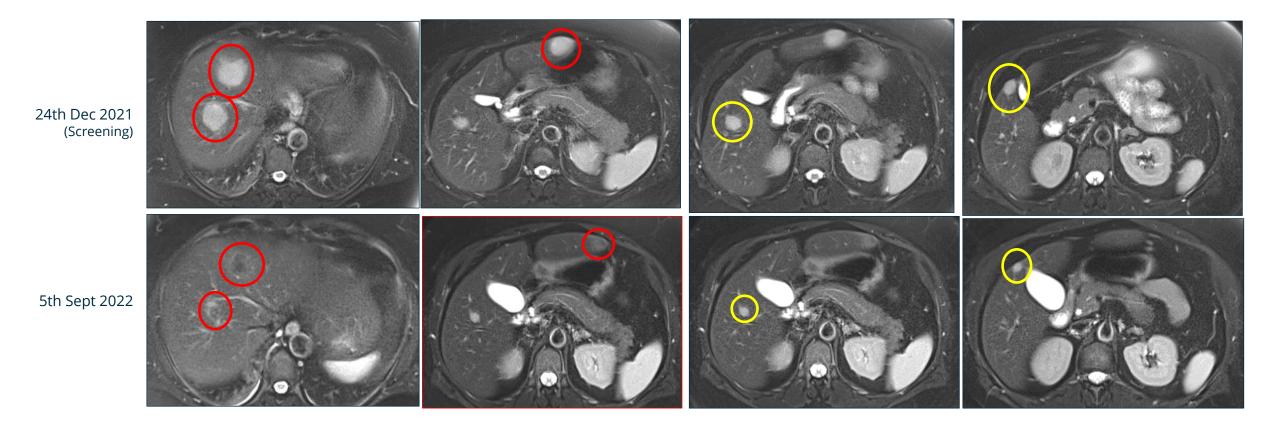
Injected

Un-injected

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Patient 201-4403-0017: Uveal melanoma Prior Yervoy/Opdivo - PR (RP2+Opdivo)







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RP3: Sarcoma disease context & unmet need



- Considerable unmet need: 13,190 new cases in the US in 2022¹
- SOC is generally radiation followed by chemotherapy; anti-PD1 may be used in responsive sub-types
- FDA approvals include trabectedin (Yondelis) for unresectable/metastatic leiomyosarcoma and liposarcoma after anthracycline
 - PFS 4.2 vs 1.5 months
 - ORR 7% vs 6%

Tumor type where single arm data based on unmet need, strong ORR, and durability of response may be suitable for approval – example where opportunistic data-driven development of RP3 might be considered



- Across most subtypes, ORR's of ~25% (often lower) are considered promising, especially 2L and later
- Several subtypes/settings with no FDA approval agents (NCCN listings for various agents)
- Many sub-types resistant to anti-PD1 therapy
- Combination with anti-PD1 remains unapproved for any sarcoma type
- Considerable unmet need in STS remains, including new therapies for patients having failed SOC

RP3 in sarcoma



So far 5 patients have been treated with RP3 combined with nivolumab

- Epithelioid sarcoma
- Leiomyosacoma
- Myxofibrosarcoma
- Osteosarcoma
- Chondrosarcoma
- All have failed standard of care (chemotherapy and other therapies)
- So far the first three patients have follow up and all are responding to therapy



BASELINE: Patient 301-402-0003



BASELINE: Patient 301-402-0005 (Leiomyosacoma)

Patient 301-4402-0003: Epithelioid sarcoma





March 2022 (baseline)

Pleural effusion required drainage Q2W at baseline – not needed since

August 2022



PET scan in Aug showed no SUV in lungs/pleura, with residual small areas of uptake in the chest wall – too small to inject

Notes:

- Metastatic epithelioid sarcoma of the perineum. Excision in 2008, pleural relapse followed by palliative thoracic RT in 2017, PD with pleural effusion in 2021, clinical trial of tazemetostat, discontinued due to PD, referred for RP3
- In 80 patients with rare sarcomas (inc ES), 15% achieved a PR, none CR, with single agent pembrolizumab (ESMO 2020 abstract 1619O)

Patient 301-4402-0005: Leiomyosacoma

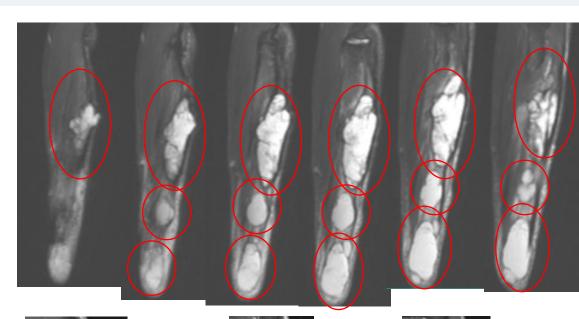


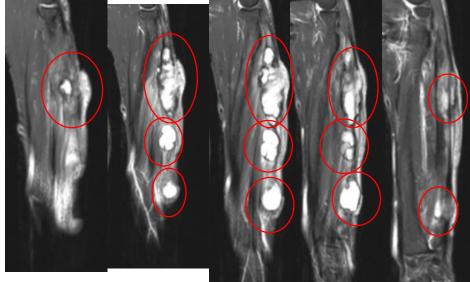


Patient 301-402-0006: Myxofibrosarcoma



22nd May 2022 (Screening)



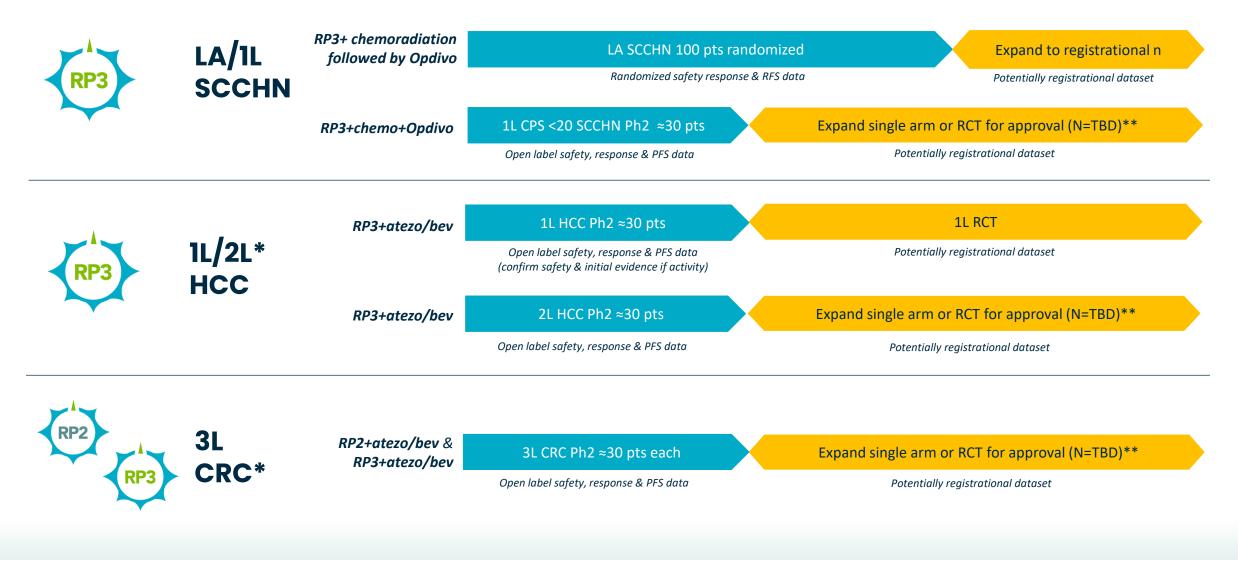




23rd Aug 2022

RP2 vs. RP3 positioning and ph2 development plan Liver/liver mets enriched development post Roche collaboration





*Potential fast to market opportunities

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**Pending FDA agreement Note: Replimune has clinical trial collaboration & supply agreements with BMS & Roche for the supply of Opdivo and atezo/bev in its clinical trial programs with RP2/3

A high unmet need in liver cancer/liver metastases remains



Unmet need¹

- The liver is a common site of metastasis across tumor types
- Patients with liver metastases have a poor prognosis
 - IO has a particularly poor outcome in pts with liver metastases
 - Liver metastases are often the primary driver of mortality

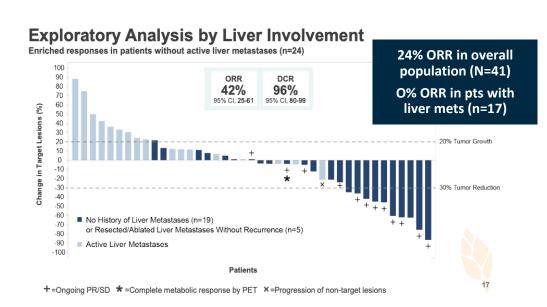
Scientific rationale²

- Liver metastases are associated with the antigenspecific elimination of T cells from the circulation by macrophages
 - Leads to systemic loss of T cells and diminished immunotherapy efficacy

"Ol" rationale/ feasibility

- RPx MOA powerful direct tumor killing & systemic immune activation
 - Relief of organ (liver) symptoms & systemic disease control
- Liver/liver metastases are routinely injected by ultrasound, and radiologists already play a key role in patient management

Agenus: 2L+ MSS CRC – Botensilimab (CTLA4)+PD-1 EMSO 2022



RP1/2 can be administered safely and repeatably in the liver



Treatment related AEs	RP1		RP2			
Preferred term, n (%)	Liver mets injected (n = 30)	Liver mets not injected (n = 27)	All liver mets (N = 57)	Liver mets injected (n = 10)	Liver mets not injected (n = 5)	All liver mets (N = 15)
Pyrexia	20 (66.7)	5 (18.5)	25 (43.9)	7 (70.0)	3 (60.0)	10 (66.7)
Nausea	17 (56.7)	8 (29.6)	25 (43.9)	2 (20.0)	3 (60.0)	5 (33.3)
Chills	18 (60.0)	5 (18.5)	23 (40.4)	2 (20.0)	4 (80.0)	6 (40.0)
Hypotension	-	-	-	3 (30.0)	2 (40.0)	5 (33.3)
Fatigue	14 (46.7)	10 (37.0)	24 (42.1)	2 (20.0)	2 (40.0)	4 (26.7)
Back pain	-	-	-	2 (20.0)	2 (40.0)	4 (26.7)
Constipation	7 (23.3)	7 (25.9)	14 (24.6)	0	2 (40.0)	2 (13.3)
Vomiting	12 (40.0)	4 (14.8)	16 (28.1)	0	3 (60.0)	3 (20.0)
Influenza-like illness	8 (26.7)	6 (22.2)	14 (24.6)	1 (10.0)	1 (20.0)	2 (13.3)
Abdominal pain	8 (26.7)	4 (14.8)	12 (21.1)	2 (20.0)	2 (40.0)	4 (26.7)
Pruritus	-	-	-	2 (20.0)	1 (20.0)	3 (20.0)
Arthralgia	6 (20.0)	5 (18.5)	11 (19.3)	0	2 (40.0)	2 (13.3)
Cough	-	-	-	3 (30.0)	0	3 (20.0)
Diarrhea	7 (23.3)	4 (14.8)	11 (19.3)	0	1 (20.0)	1 (6.7)
Decreased appetite	4 (13.3)	5 (18.5)	9 (15.8)	0	1 (20.0)	1 (6.7)
Injection site pain	9 (30.0)	2 (7.4)	11 (19.3)	2 (20.0)	0	2 (13.3)
Doses administered, n median (min–max)	5.0 (1–8)	5.0 (2–8)	5.0 (1–8)	6.0	6.0	6.0

Conclusions

- RP1/2 ± Opdivo demonstrated good tolerability in patients with liver metastases
- No difference in the adverse event profile according to administration route was seen, although the incidence of pyrexia, nausea, chills, and fatigue was increase with RP1 injection into liver mets vs. when liver mets were not injected.
- Patients with various tumor types have responded following injection into liver mets, includes patients with melanoma, uveal melanoma, esophageal cancer & MSI-H CRC

Data snapshot summary in anti-PDI failed melanoma



RESPONSE RATE	DURABILITY	SAFETY
36% ORR 20% CRR across the trial population • Consistent with prior phase I data in 16 anti-PD1 failed melanoma patients	85% of responses ongoing, with 59% of responders out over one year	Well-tolerated mainly Grade 1-2 "on target" and transient side effects observed
 Includes patients with moderate to high tumor burden and visceral disease Most responses are in patients with primary resistant disease ORR of at least 27.7% across all sub-groups analyzed* 	SYSTEMIC ACTIVITY Abscopal activity many un-injected tumor responses seen including visceral disease	SURVIVAL (PFS/0S) Plateaus developing
	Replimune believes that RP1 combined become the preferred treatment opti with anti-PD1 failed melanoma presen	on for a wide range of patients

Overall summary



1111 Major skin cancer franchise **RP2/3 mid-stage** Strong cash position to planned with RP1 pipeline execute on our vision • Cash and Investments as of • Strong data to date in multiple skin • Focused on easily injected tumor September 30, 2022 \$372M cancers in both the PD1 naïve and types with high commercial value, failed setting such as SCCHN, HCC, & CRC • Cash Runway into 2025 • Fast routes to randomized • Anti-PD1 failed data presented • Availability of \$200M nontoday potentially transformative in controlled trials or expansion of dilutive debt facility anti-PD1 failed melanoma single arm trials for approval • CERPASS registrational data in CSCC expected 1H 2023 • Scale manufacturing in place • Sufficient to serve worldwide market at attractive COGS • Commercial planning ramping up for intended US launch*

THANK YOU

MISSION

To enable tumor directed oncolytic immunotherapy (TDOI) to become a cornerstone in the treatment of cancer

VISION

To deliver **transformational** results for patients **across cancers** using tumor directed oncolytic immunotherapy to induce a powerful and durable systemic anti-tumor immune response resulting in **quality survival** and a **chance for a cure**



APPENDIX Responding patient images from the 75 patient snapshot in anti-PD1 failed melanoma

AGENDA

Patient 4405–2007: Prior Keytruda, Yervoy/Opdivo Disease presentation type: Progressed on combined anti-CTLA-4/anti-PD1 Stage IVM1b



6 Aug 2021/Baseline







24 Jan 2022





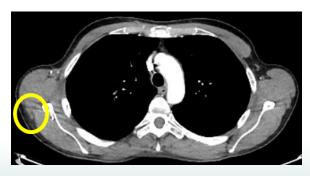


Un-injected Injected

31 Aug 2022





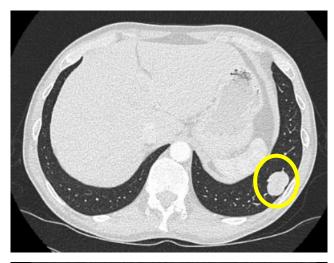


Data snapshot date: 3 Nov 2022

Patient 4405-2007 contd.



6 Aug 2021/Baseline





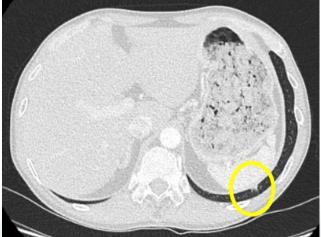
24 Jan 2022





31 Aug 2022

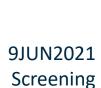




60

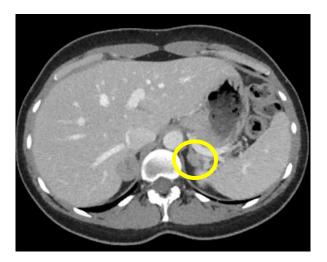
Patient 1122–2031: Prior Yervoy/Opdivo Disease presentation type: Progressed on combined anti-CTLA-4/anti-PD1 Stage IVM1c

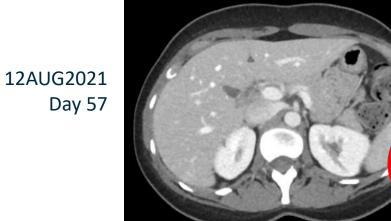


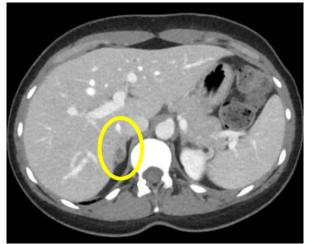


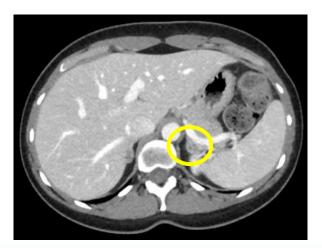














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Patient 1121-2011: Prior Opdivo, Keytruda Disease presentation type: Progressed on anti-PD1 Stage IVM1c

Replimune°

29JUL2021/Screening

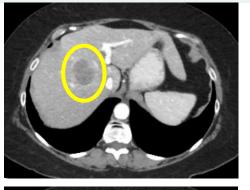




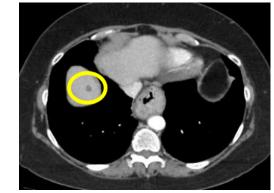
Patient 1121-2011 contd.

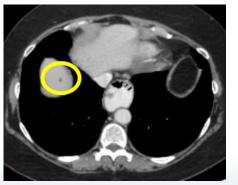
Replimune



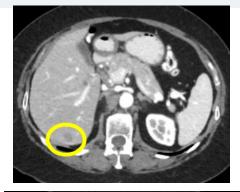








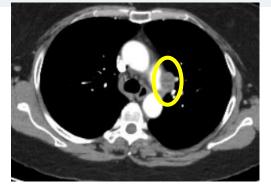
Injected

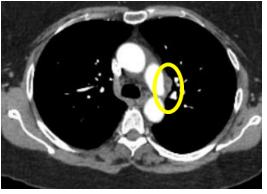


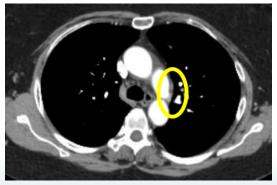




O Un-injected

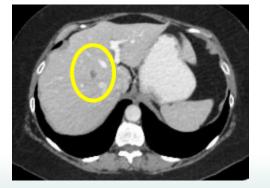






22 Sep 2021 Day 57

29 Dec 2021 Day 155



Data snapshot date: 3 Nov 2022

63

Patient 1121-2011 contd.

Replimune°

22 Jul 2021/ Baseline

22 Sep 2021/

Day 57

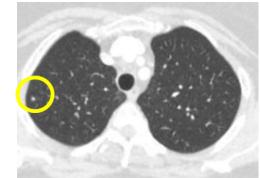




29 Dec 2021/ Day 155





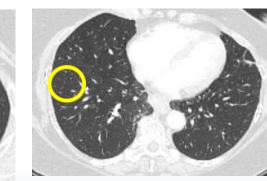
















Patient 1121–2013: Prior Keytruda Disease presentation type: Progressed on anti-PD1 Stage IVM1c



11NOV2021/Screening



17MAR2022/Day 113



17JUN2022/Day 211

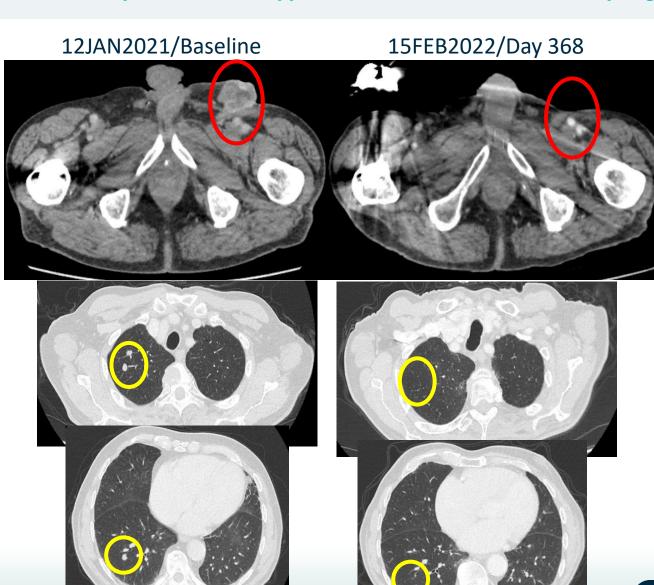




65

Patient 4401–2021: Prior Tafinlar/Mekinist, Keytruda Disease presentation type: Prior BRAF/MEK as well as progressed on anti-PD1 Stage IVM1c





12JAN2021/Baseline













66

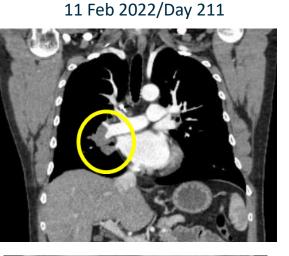
Data snapshot date: 3 Nov 2022

Patient 1156–2001: Prior Keytruda Disease presentation type: Progressed on anti-PDI stage IVM1c (near PR; on treatment)



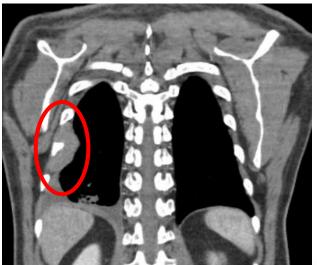
18 Jun 2021/Baseline





19 Aug 2022/Day 379



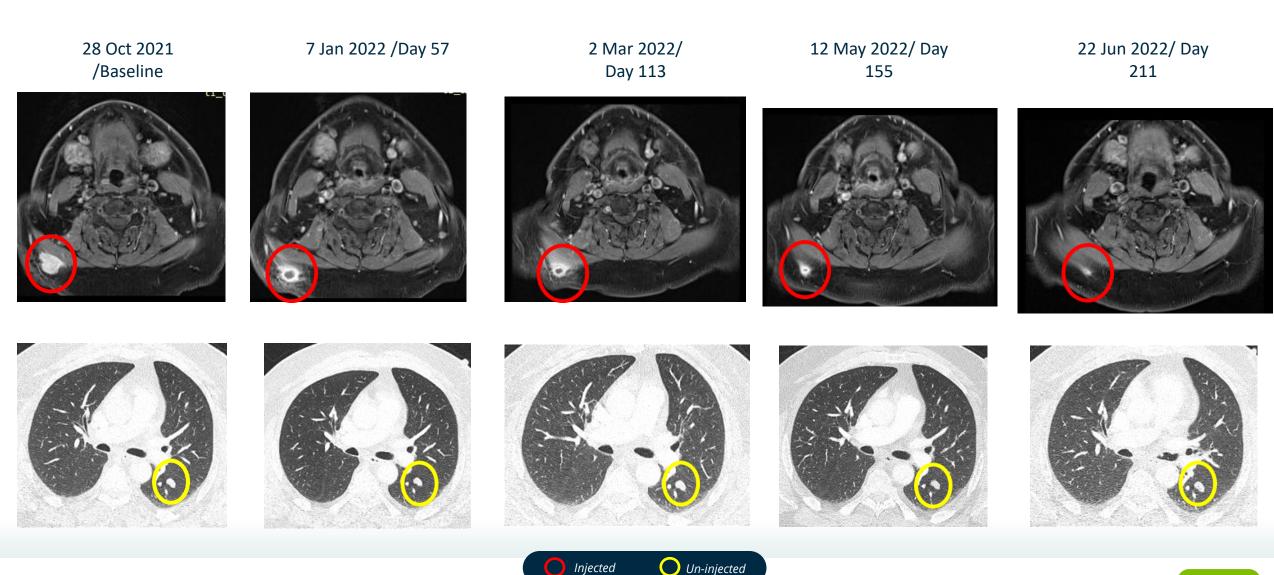








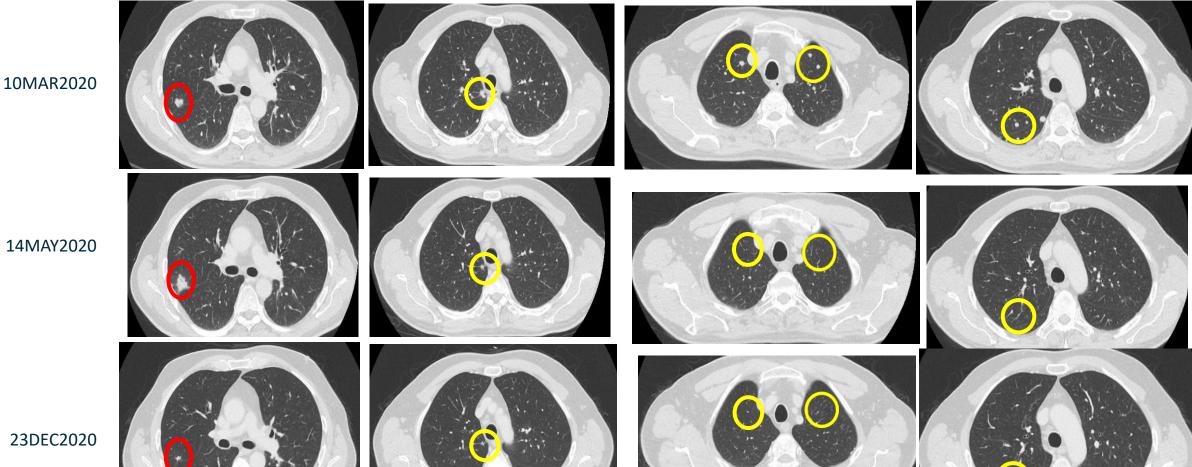
Patient 4403-2012: Prior Yervoy/Opdivo Disease presentation type: Progressed on prior anti-PD1/anti-CTLA4 Stage IV MIb



Replimune°



Patient 4401–2013: Prior Yervoy, Opdivo Disease presentation type: Progressed on anti-CTLA-4 as well as anti-PD1 Stage IVM1b



23DEC2020

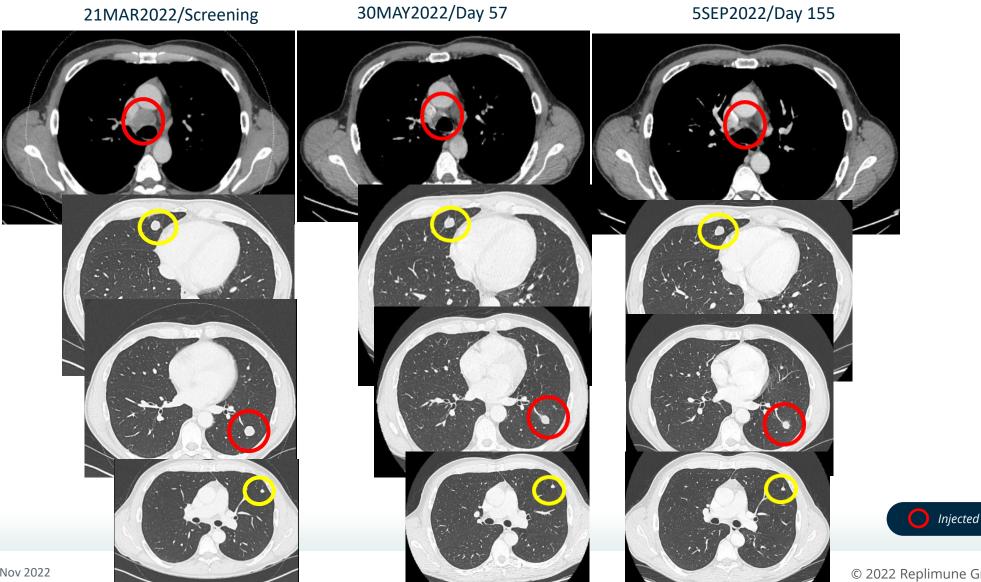


69

Keplimune[®]

Patient 3314-2002: Prior Opdivo, Keytruda/MK13085 (anti-CTLA-4)/ MK7684 (anti-TIGIT) Disease presentation type: Progressed on multiple immunotherapies Stage IVM1b



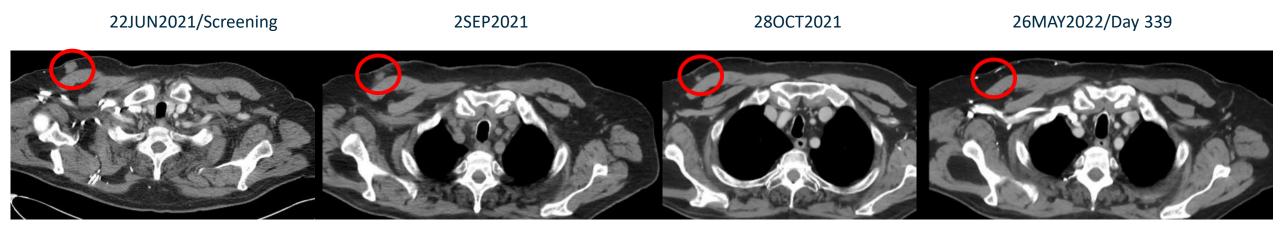


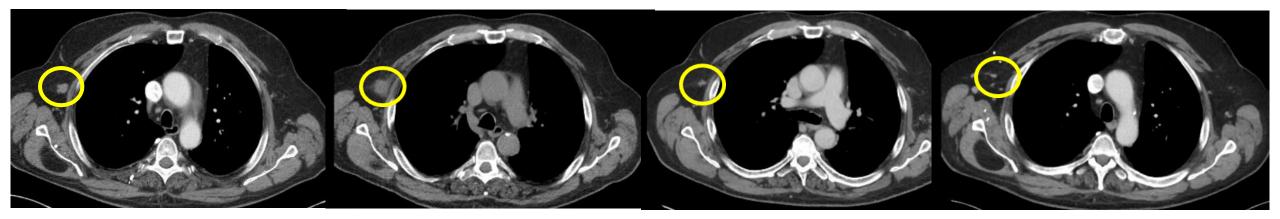
70

O Un-injected

Patient 1122–2032: Prior Opdivo Disease presentation type: Progressed on anti-PD1 Stage IVM1b



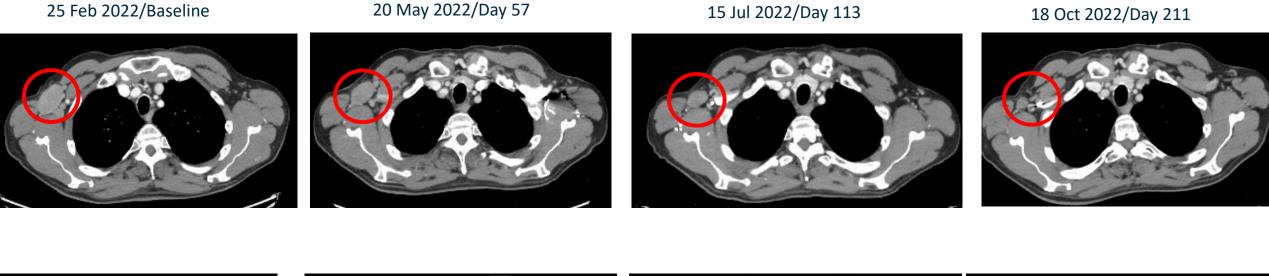






Patient 1120–2001: Prior Keytruda, Opdivo/bempeg/NKTR 262, Yervoy/Opdivo Disease presentation type: Progressed on multiple immunotherapies Stage IVM1a (near PR; on treatment)









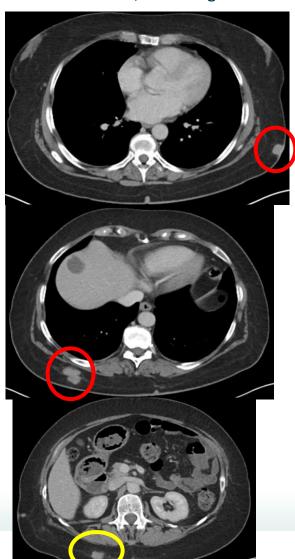






Patient 4403–2013: Prior Keytruda Disease presentation type: Progressed on anti-PD1 Stage IVM1a





20JAN2022/Screening

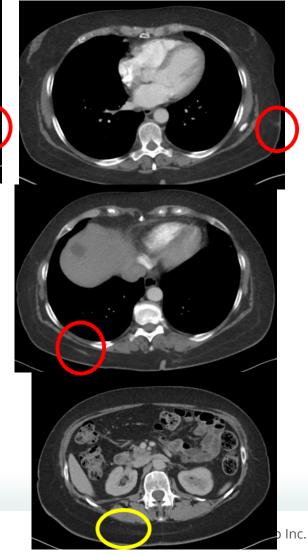


31MAR2022/Day 57





24MAY2022/Day 113



NOTE:

Day 57 top 2 rows different slices through abdomen due to different breath hold

Injected

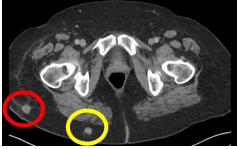
O Un-injected

Patient 4403-2013 contd.



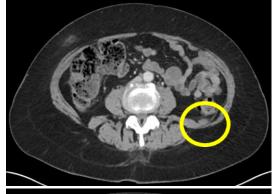
20JAN2022/Screening







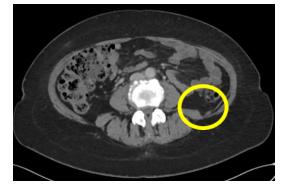
31MAR2022/Day 57

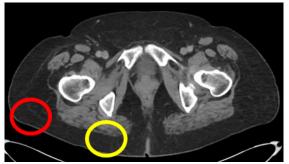






24MAY2022/Day 113



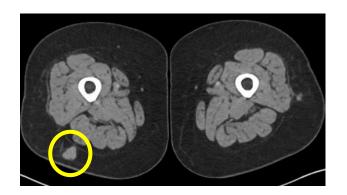




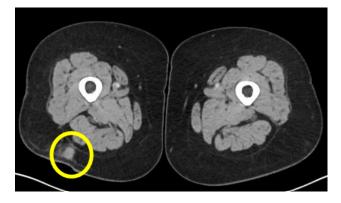
Patient 4403-2013 contd.



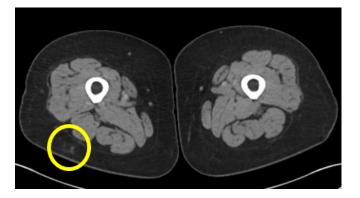
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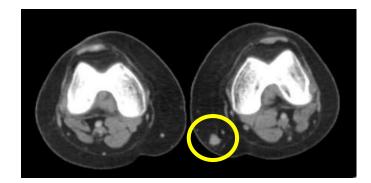


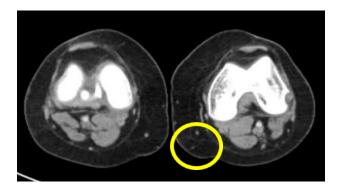
31MAR2022/Day 57



24MAY2022/Day 113







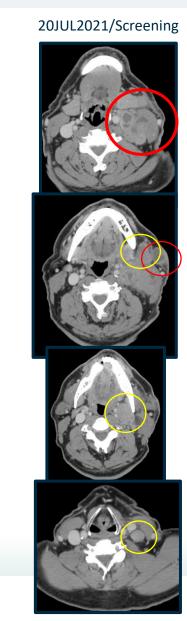
THIS SCAN DID NOT EXTEND DISTALLY TO THE KNEES

NUMEROUS OTHER LESIONS NOT SHOWN

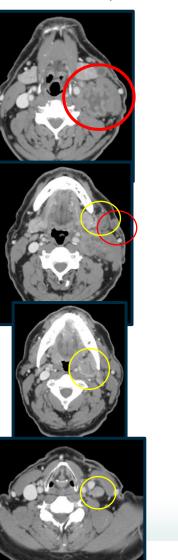


Patient 1126-2001: Prior Opdivo Disease presentation type: Progressed on prior anti-PD1 Stage IIIb

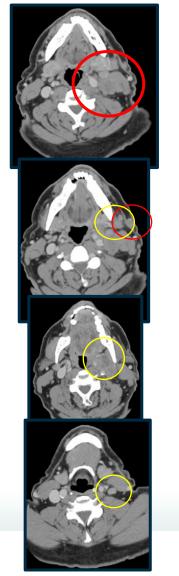




21DEC2021/Day 155



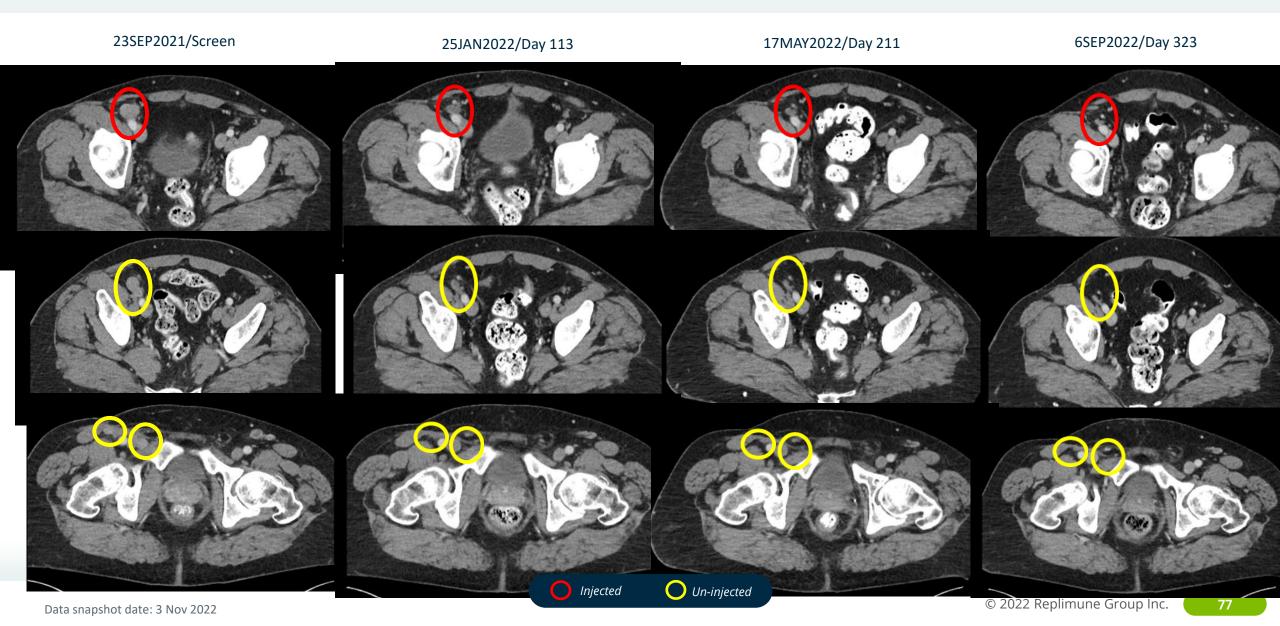
14JUN2022/Day 323





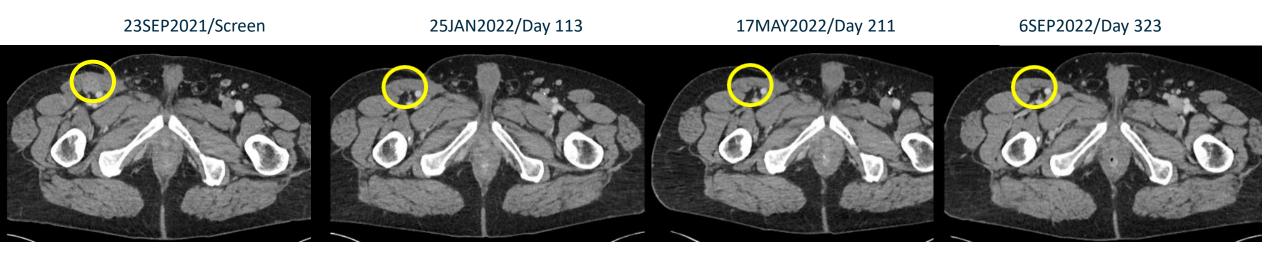
Patient 3410-2001: Prior Keytruda Disease presentation type: Progressed on adjuvant anti-PD1 Stage IVM1a





Patient 3410-2001 contd.







NOT IMAGED

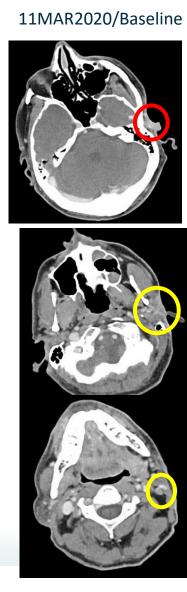


NOT IMAGED



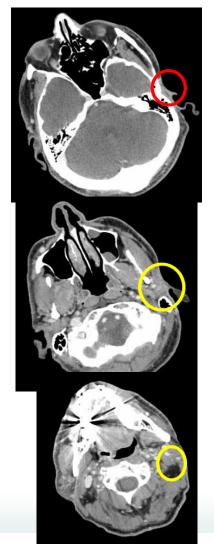
Patient 1122–2012: Prior Opdivo Disease presentation type: Progressed on anti-PD1 Stage IIIc





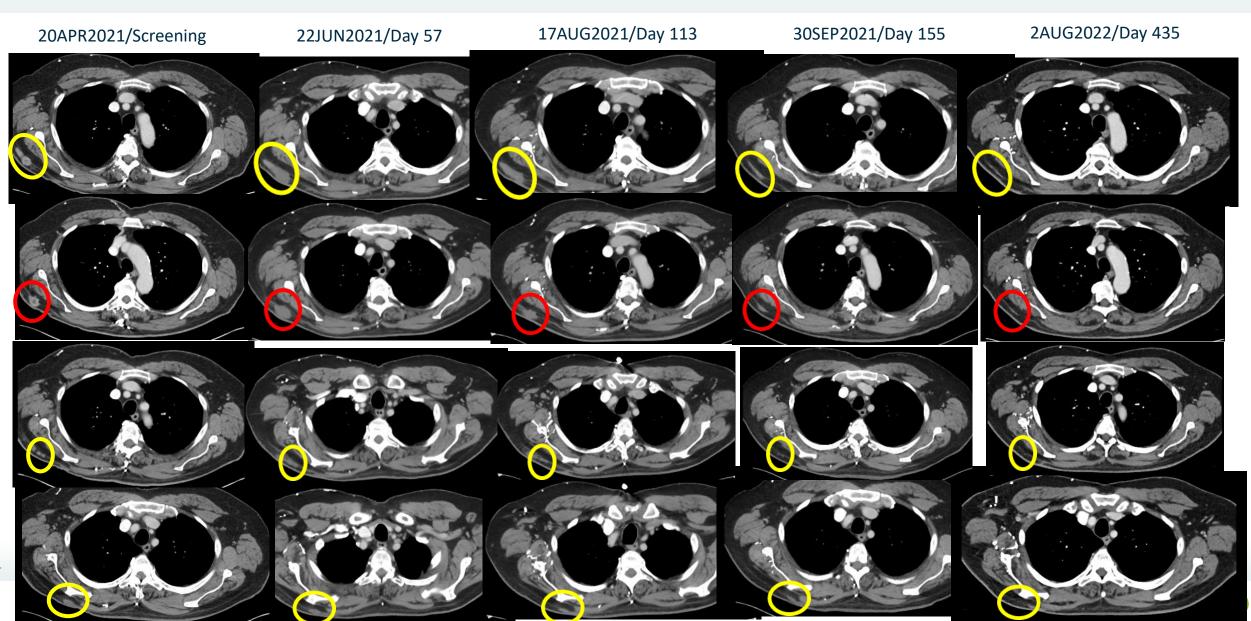
19MAY2020

6APR2021/Day 391



O Un-injected lnjected

Patient 1122–2027: Prior Keytruda Disease presentation type: Progressed on adjuvant anti-PD1 Stage IIIc



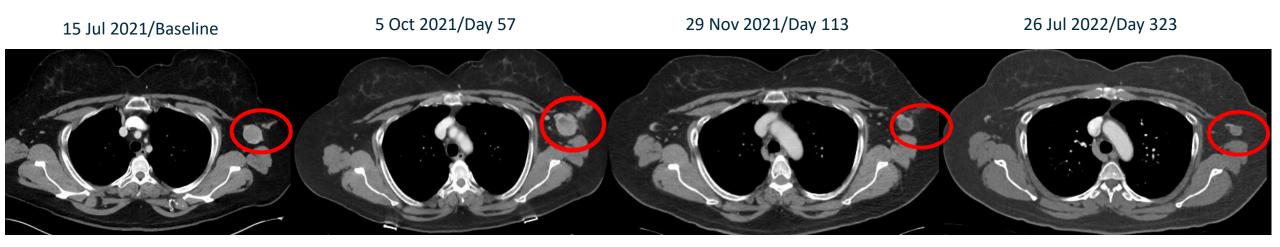


O Un-injected

Injected

Patient 1122–2034: Prior Keytruda Disease presentation type: Progressed on prior anti-PD1 Stage IIIc







Patient 1122–2015: Prior Keytruda Disease presentation type: Progressed on prior adjuvant anti-PD1 Stage IIIc



13MAY2020/Baseline

9SEP2020

21APR2021/Day 343





Patient 1122-2016: Prior OPdivo

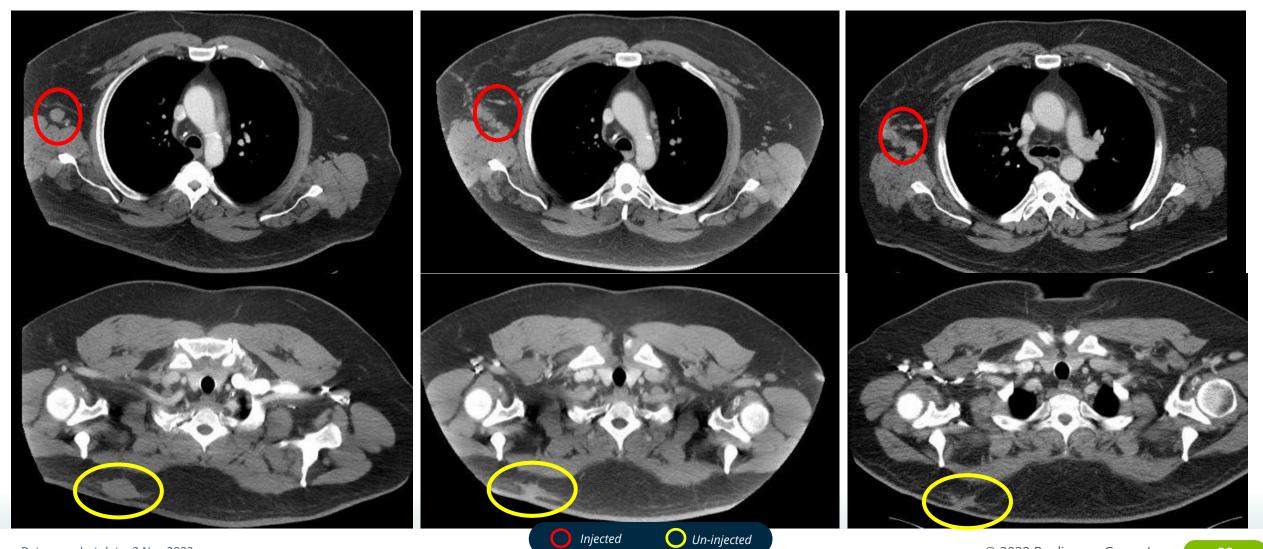
Disease presentation type: Progressed on adjuvant anti-PDI therapy Stage IIIc



30MAR2021

10JUN2020

Data snapshot date: 3 Nov 2022



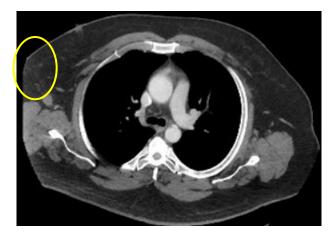
60CT2020

с. 🛑





10JUN2020



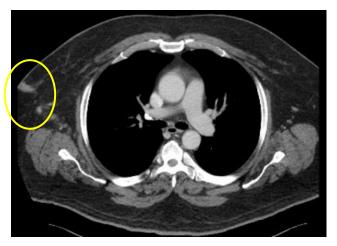
60CT2020

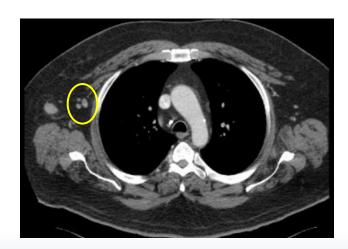






30MAR2021

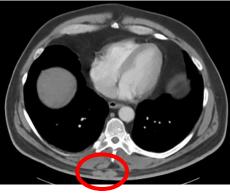




Patient 1119–2008: Prior Keytruda Disease presentation type: Progressed on adjuvant anti-PD1 Stage IIIc







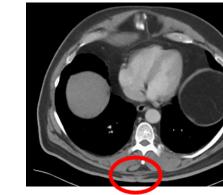


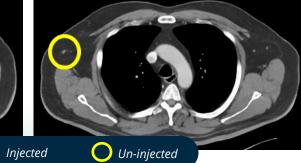




27 Sep 2022 / Day 793



















Patient 1121–2008: Prior Keytruda Disease presentation type: Progressed on adjuvant anti-PD1 Stage IIIc



TO BODY Right Foot - Plantar 4/20/21 MEASUREMENT: LXWXD 01-1121-2008

20APR2021/Screening

16NOV2021



Patient 1121–2005: Prior Keytruda Disease presentation type: Progressed on prior adjuvant anti-PD1 Stage IIIc



23JUNE2020/Screening

18AUG2020

1DEC2020



Patient 1103–2004: Prior Keytruda Disease presentation type: Progressed on adjuvant anti-PD1 Stage IIIc



30 Nov 2020 / Baseline







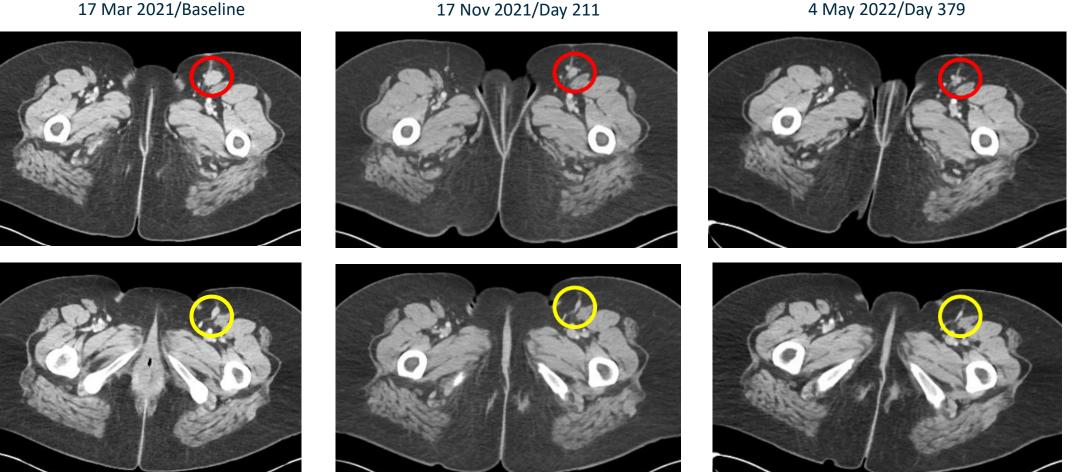


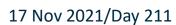




Patient 4403–2007: Prior Keytruda Disease presentation type: Progressed on anti-PD1 Stage IIIb





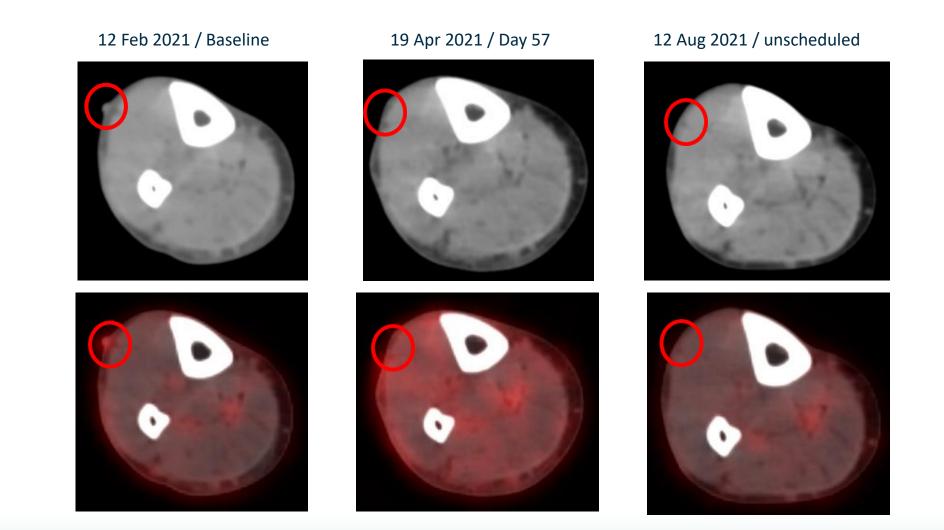






Patient 1117-2006: Prior Keytruda Disease presentation type: Progressed on adjuvant anti-PD1 Stage IIIb



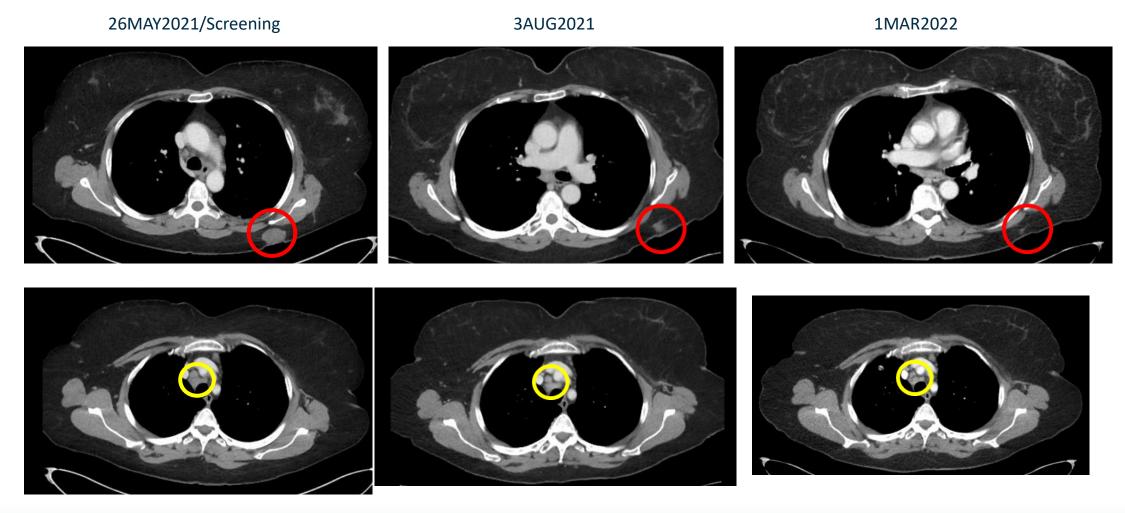




Data snapshot date: 3 Nov 2022

Patient 1122–2030: Prior Keytruda Disease presentation type: Progressed on adjuvant anti-PD1 Stage IIIb





Also other nodes which remain stable-reduced



91

Data snapshot date: 3 Nov 2022