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Clinical Activity of BEMPEG Plus NIVO in Previously Untreated Patients With Metastatic Melanoma: Updated Results From the Phase 1/2 PIVOT-02 Study

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Presenter Disclosure Information

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The following relationships exist related to this presentation:

- Consulting or advisory role: Nektar, Celgene, CureVac
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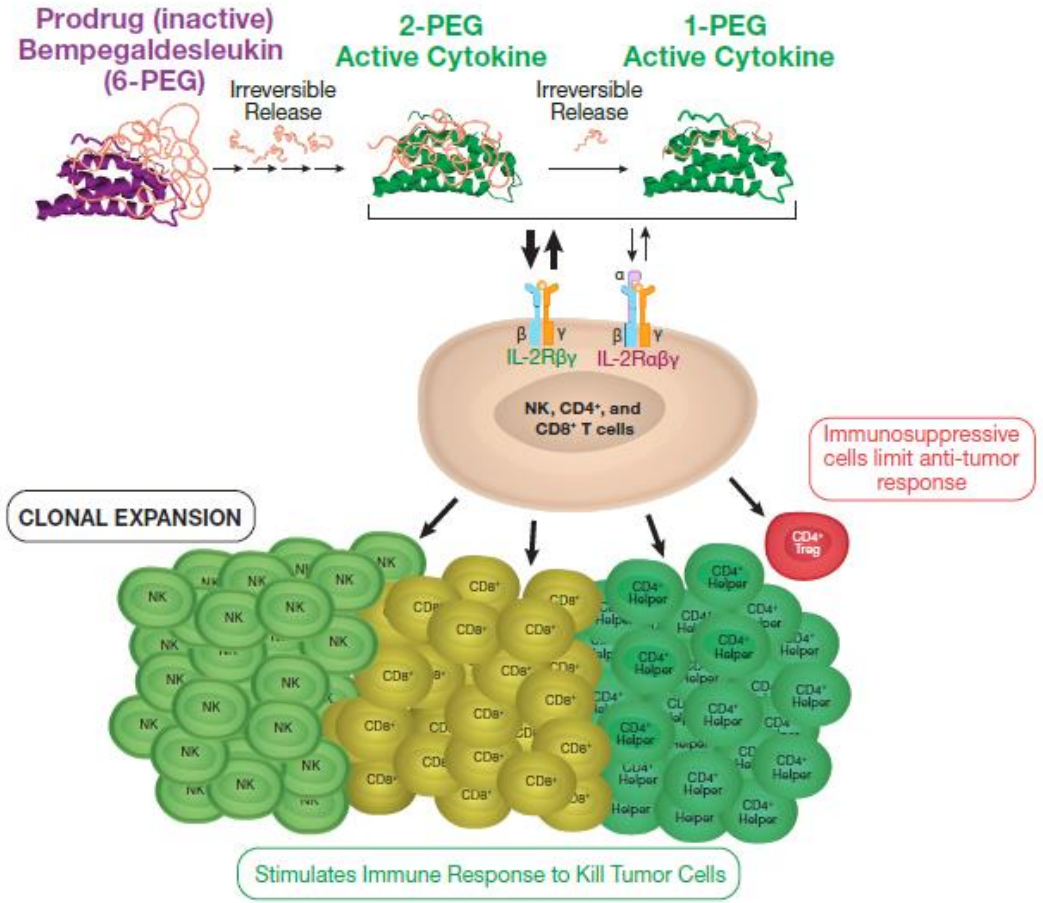
Background: Bempegaldesleukin Preferential Signaling Through the IL-2 Receptor Pathway



- Bempegaldesleukin (BEMPEG; NKTR-214): is a CD122-preferential IL-2 pathway agonist shown to increase tumor-infiltrating lymphocytes, T cell clonality and PD-1 expression[1,2]
- BEMPEG plus checkpoint inhibitor (CPI) nivolumab (NIVO) has been shown to convert baseline tumors from PD-L1(-) to PD-L1(+)[3-6]
- Low levels of baseline tumor-infiltrating lymphocytes (TILs)[7-9] and T cell–inflammation[10] is predictive of a poor response to CPIs

1. Charych D, et al. *PLoS One*. 2017; 12: e0179431; 2. Bentebibel SE, et al. *Cancer Discov*. 2019;9:711-721; 3. Diab A, et al. SITC 2018. Abstract O4; 4. Siefker-Radtke, et al. ASCO GU 2019. Abstract 388; 5. Hurwitz M, et al. ASCO 2019. Abstract 2623; 6. Tolaney S, et al. CICON 2019. Poster A001; 7. Daud AI, et al. *J Clin Oncol*. 2016;34:4102-09; 8. Daud AI, et al. *J Clin Invest*. 2016;126:3447-52; 9. Tumeh PC, et al. *Nature*. 2014;515:568-71; 10. Ayers M, et al. *J Clin Invest*. 2017;127:2930-2940.

Background: BEMPEG Plus NIVO in Metastatic Melanoma (MEL)

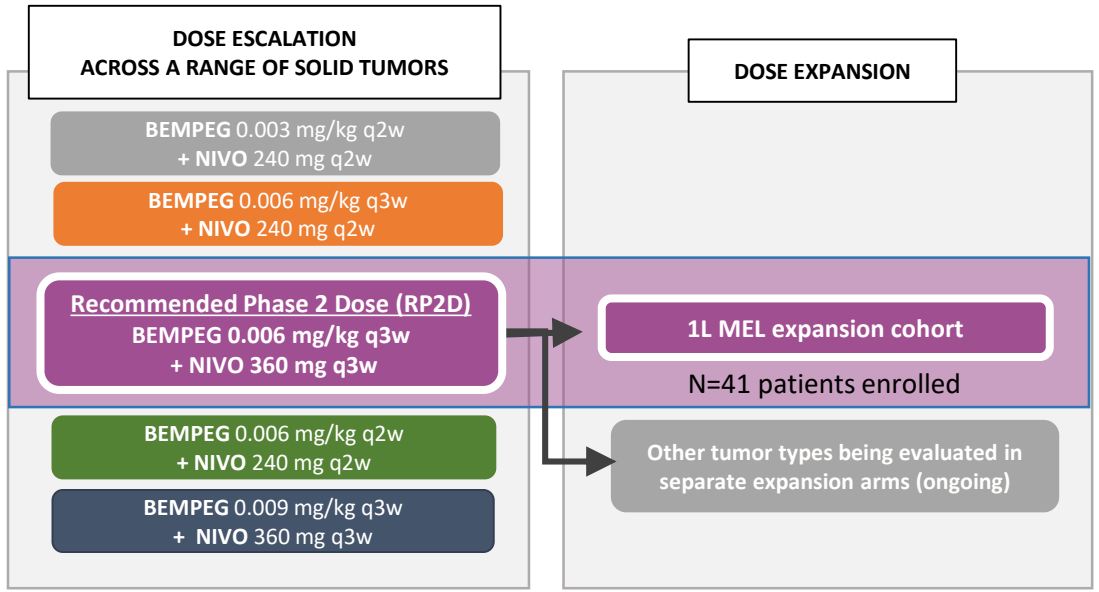
- Despite CPI therapy as an effective treatment option, there is an unmet need for therapies to produce more durable and deeper responses in metastatic melanoma
- Safety and clinical activity of BEMPEG + NIVO was evaluated in PIVOT-02, a multicenter phase 1/2 study in multiple solid tumor settings
  - Encouraging preliminary clinical activity and safety data demonstrated in metastatic melanoma: durable responses with the combination that deepened over time
- BEMPEG + NIVO received Breakthrough Therapy Designation on July 29th, 2019 from the FDA for patients with previously untreated, unresectable or metastatic melanoma
- ***Here, we report the updated results in 1L metastatic melanoma patients and the first report of PFS (data cut-off: September 25th, 2019)***

PIVOT-02 Study Schema

NCT02983045

Key MEL Inclusion Criteria

- **1L Metastatic Melanoma (with known BRAF status)**
- **IO naïve**
- **Measurable disease per RECIST v1.1**
- **ECOG PS 0-1**



Primary endpoints:

- Safety and tolerability
- ORR per RECIST assessed every 8 weeks*
- Efficacy evaluable per protocol defined as patients with ≥ 1 post baseline scan

Secondary and exploratory endpoints:

- Duration of response, OS, PFS, clinical benefit rate, PK
- Biomarker analyses in blood and tumor

- **41 MEL patients enrolled and received at least one dose of BEMPEG plus NIVO**
- **As of Sept 25, 2019, 38 patients were efficacy evaluable defined as patients with ≥1 post-baseline scan (3 patients discontinued prior to first scan due to an unrelated TEAE [n=1] and patient decision [n=2])**

*Tumors were assessed by blinded independent central radiology (BICR) and local investigator. BICR was used for this analysis, which required radiologic imaging scans to be submitted to a central location and reviewed by independent radiologists who are not involved in the treatment of the patients.

ECOG PS: Eastern Cooperative Oncology Group Performance Score; MEL: melanoma; RECIST: response evaluation criteria in solid tumors; TEAE: Treatment-emergent adverse events; SOC: standard of care

Patient Demographics and Disease Characteristics

	Total (n=41)
Sex	
Female	17 (41.5%)
Male	24 (58.5%)
Age (years)	
Median (Range)	63 (22-80)
ECOG Performance Status	
0	32 (78.0%)
1	9 (22.0%)
PD-L1 status*	
Positive ≥1%	24 (58.5%)
Negative <1%	14 (34.1%)
Unknown	3 (7.3%)

	Total (n=41)
BRAF status	
Mutant (V600E, V600K)	13 (31.7%)
Wild-Type or non-V600 mutation	27 (65.9%)
Unknown	1 (2.4%)
LDH‡	
Normal	29 (70.7%)
Elevated >ULN#	12 (29.3%)
Stage (7th edition AJCC)	
M1a	5 (12.2%)
M1b	16 (39.0%)
M1c	20 (48.8%)
Liver metastases**	
Yes	11 (26.8%)
No	30 (73.2%)

*PD-L1 status determined by Dako PD-L1 IHC 28-8 pharmDx on fresh or archival tumor; for patients with insufficient tumor tissue for central analysis, local pathology data for PD-L1 status at baseline were substituted. 1 pt previously reported as negative confirmed PD-L1 positive (<5%). **1 patient with liver metastases not evaluable for efficacy.

‡Based on maximum value prior to dosing

#8 patients with ≥ 2X ULN

Treatment-Related Adverse Events (TRAEs) at RP2D

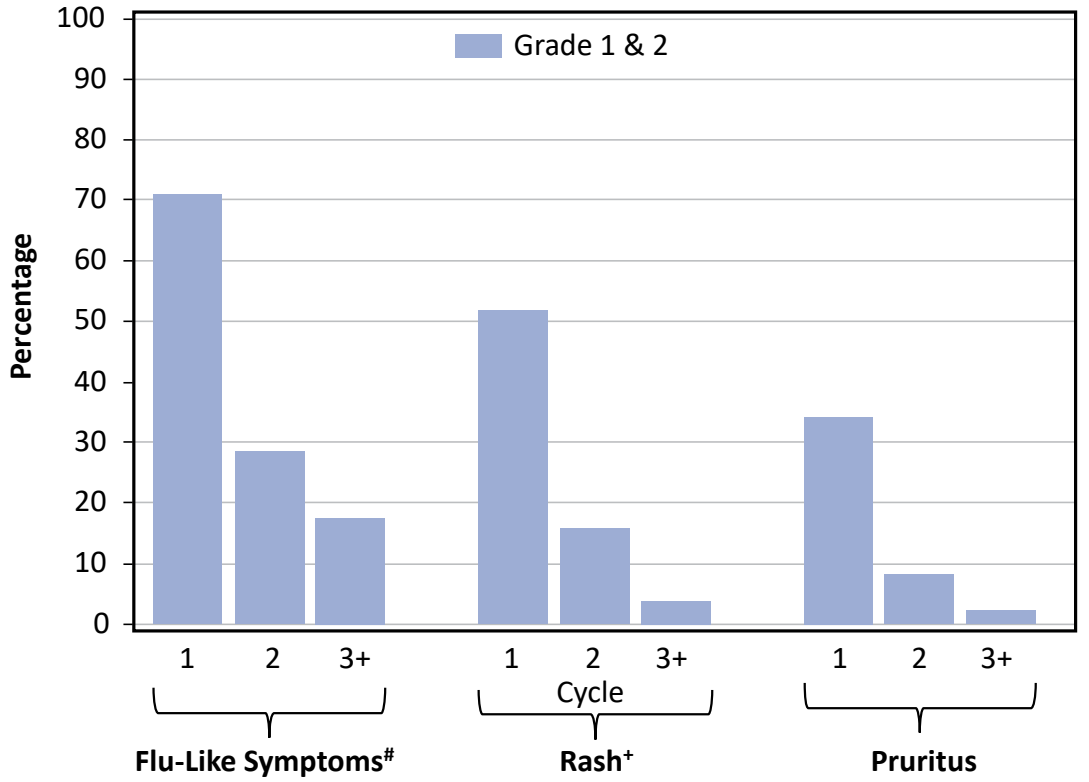
Preferred Term[1]	Total (N=41)
Grade 3-4 Treatment-Related AEs	7 (17.1%)#
Acute kidney injury	2 (4.9%)
Atrial fibrillation*	2 (4.9%)
Dizziness, dyspnea, hypoxia, hyperglycemia, hypernatremia	1 each (2.4%)
Grade 1-2 Treatment-Related AEs (>30% listed below)	
Flu like symptoms**	33 (80.5%)
Rash***	29 (70.7%)
Fatigue	27 (65.9%)
Pruritus	20 (48.8%)
Nausea	19 (46.3%)
Arthralgia	18 (43.9%)
Decreased appetite	15 (36.6%)
Myalgia	15 (36.6%)
Any imAE (Grade ≥3) (Nephritis and renal dysfunction, diabetes mellitus/hyperglycemia treated with insulin)	2 (4.9%)
Patients who discontinued BEMPEG or NIVO due to a TRAE (Cerebrovascular accident, edema peripheral, blood creatinine increased, malaise, pharyngitis)	5 (12.2%)
Treatment-Related Deaths	0 (0%)

The combination of BEMPEG plus NIVO is well tolerated, and treatment-related adverse events (TRAEs) are similar to what was previously reported at ASCO 2019

Data Cutoff Date: 25SEP2019. imAE: Immune-mediated adverse events. Per protocol, safety evaluable is defined as patients with ≥ 1 dose of study treatment. (1) Patients are only counted once under each preferred term using highest grade. #Pts with 2 or more G3-4 TRAEs are only counted once. *1 patient with previous history of atrial fibrillation since 2015; 1 patient experienced atrial fibrillation 1 month after last dose of study drug. **Flu-like symptoms included the following preferred terms: chills, influenza, influenza-like illness, pyrexia. ***Rash included the following preferred terms: erythema, rash, rash erythematous, rash generalized, rash macular, rash maculo-papular, rash maculovesicular, rash papular, rash pruritic, rash pustular, rash vesicular, exfoliative rash

Cytokine-Related AEs: Decreased Frequency with Continued Dosing*

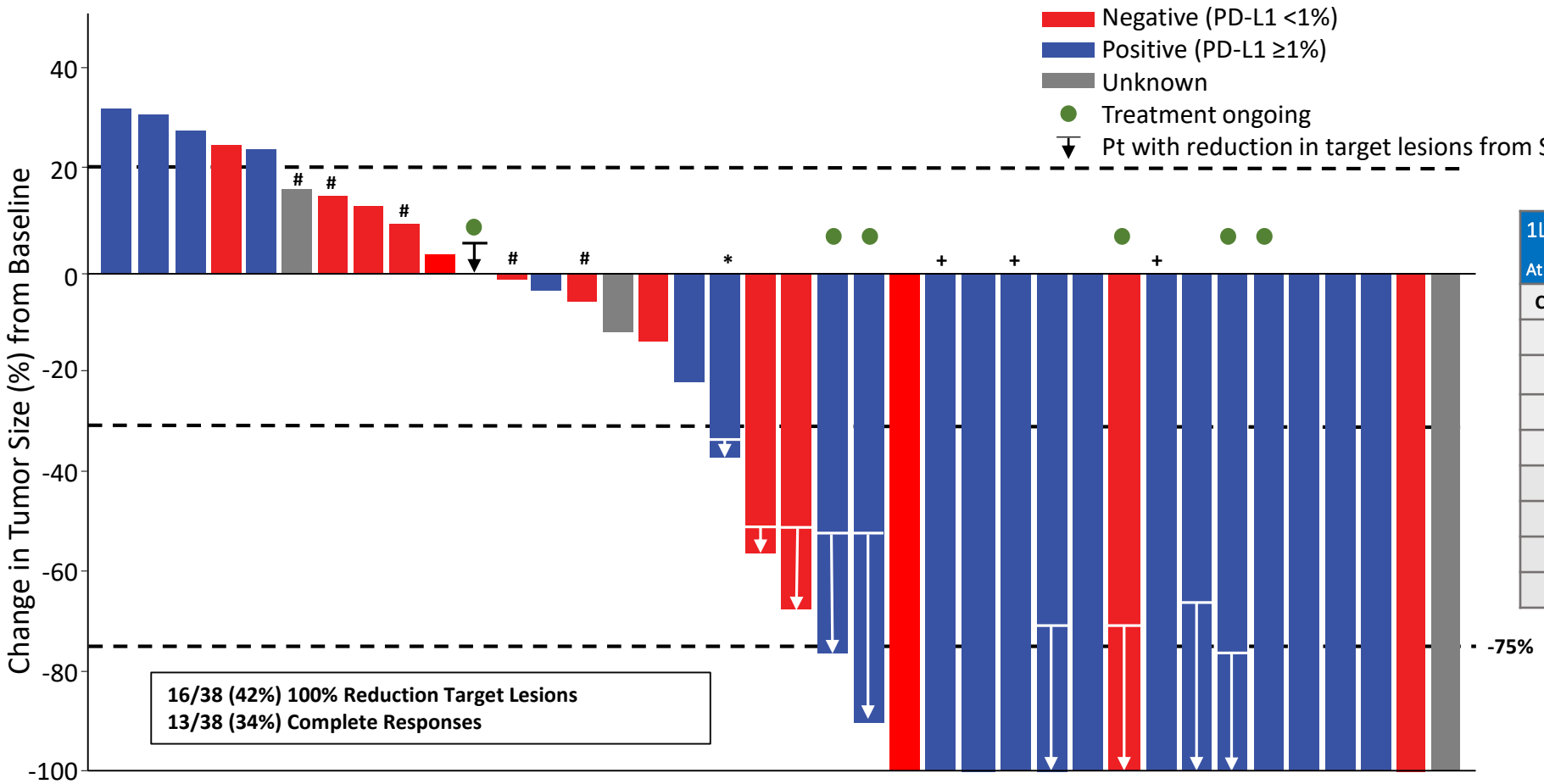
- Hydration guidelines[1] effective: no Grade ≥3 TRAEs of hypotension were observed in cohort
- Cytokine related AEs decreased with subsequent cycles of treatment
  - All were low grade (no Grade ≥3 or higher)
  - Easily managed with NSAIDs/OTCs[1,2]
  - No dose delays, dose reductions or study discontinuations due to cytokine related AEs
- Prodrug design of NKTR-214 accounts for lower frequency of cytokine-related AEs compared to high dose IL-2[1,3]



*Cycle 1 includes 41 pts, Cycle 2 includes 39 pts, Cycles 3+ includes ≤ 37 pts.
Cycle 3+ symptoms equals average of % per cycle for cycles 3-33.
#Includes the following preferred terms: chills, influenza like illness, pyrexia, influenza.
†Includes the following preferred terms: erythema, rash, rash erythematous, rash generalized, rash macular, rash maculo-papular, rash maculovesicular, rash papular, rash pruritic, rash pustular, rash vesicular, and exfoliative rash

1. Bentebibel SE, et al. *Cancer Discov.* 2019;9:711-721; 2. Diab A, et al. SITC 2018. Abstract O4; 3. Dutcher JP, et al. *J Clin Oncol.* 1991;9:641-8

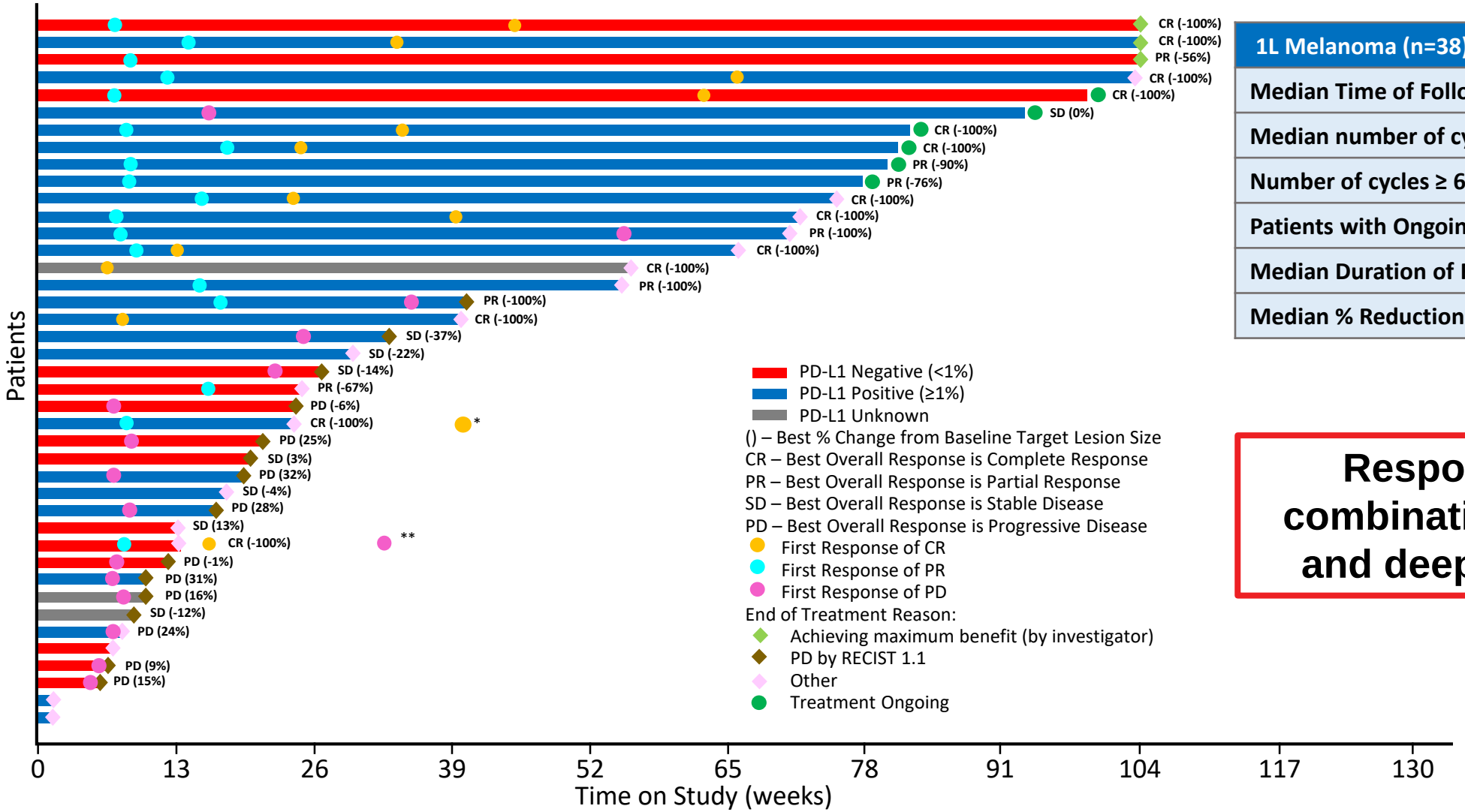
Stage IV IO-Naïve 1L Melanoma Cohort at RP2D Best Overall Response by Independent Radiology: SITC 2019



1L Melanoma (n=38 Efficacy Evaluable) At Median Time of 18.6 months of Follow-up:	Overall Response Rate
Confirmed ORR (CR+PR)	20 (53%)
CR	13 (34%)
PD-L1 negative (n=13)	5 (39%)
PD-L1 positive (n=22)	14 (64%)
PD-L1 unknown (n=3)	1 (33%)
LDH > ULN (n=11)	5 (45%)
Liver metastases (n=10)	5 (50%)
Median Time to Response (months)	2.0
Median Time to CR (months)	7.9

Data Cutoff Date: 25SEP2019. Response evaluable population includes patients who have measurable disease (per RECIST 1.1) at baseline and also have at least one post-baseline assessment of tumor response and (for Parts 2 and 4) meet eligibility criteria are response evaluable. All objective responses are confirmed. #Best overall response is PD due to non-target lesion progression or presence of new lesion; *Best overall response is SD; +Best overall response is PR. CR for target lesion, non-target lesion still present.

Stage IV 1L Melanoma Cohort: ORR 53% with CR 34%

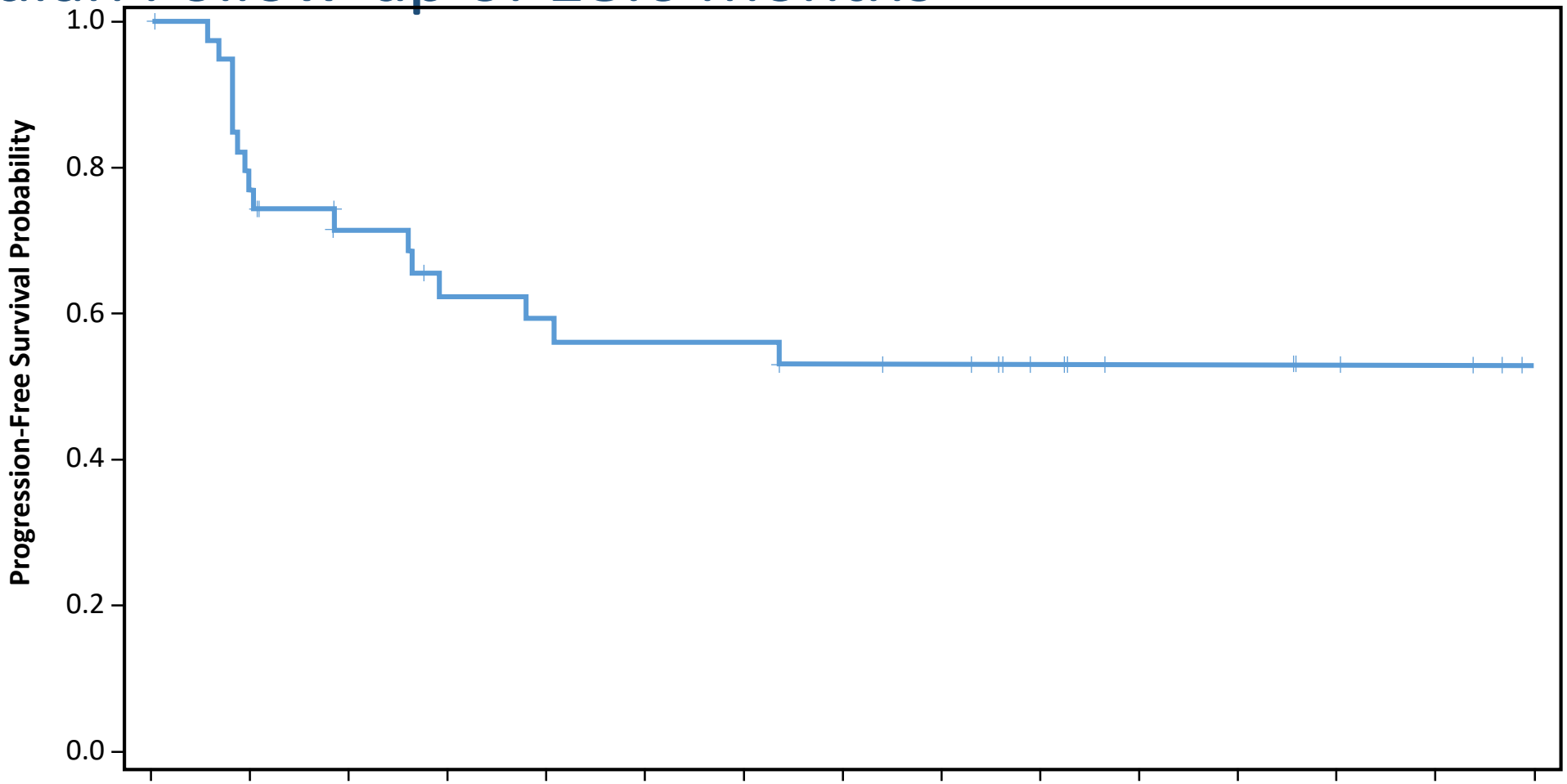


1L Melanoma (n=38)	
Median Time of Follow-Up (months)	18.6
Median number of cycles (range)	9 (1-34)
Number of cycles ≥ 6	29 (70.7%)
Patients with Ongoing Responses	17/20 (85%)
Median Duration of Response (months)	NE
Median % Reduction from Baseline	-61.5%

Responses with the combination were durable and deepened over time

Data Cutoff Date: 25SEP2019. *Pt achieved PR in Mar 2018, EoT in Jul 2018, achieved CR in Oct 2018. **Pt achieved PR in Mar 2018; EoT in May 2018 due to patient decision (QoL issues), achieved CR in May 2018, disease relapse in Sept 2018 due to new lesion (brain)

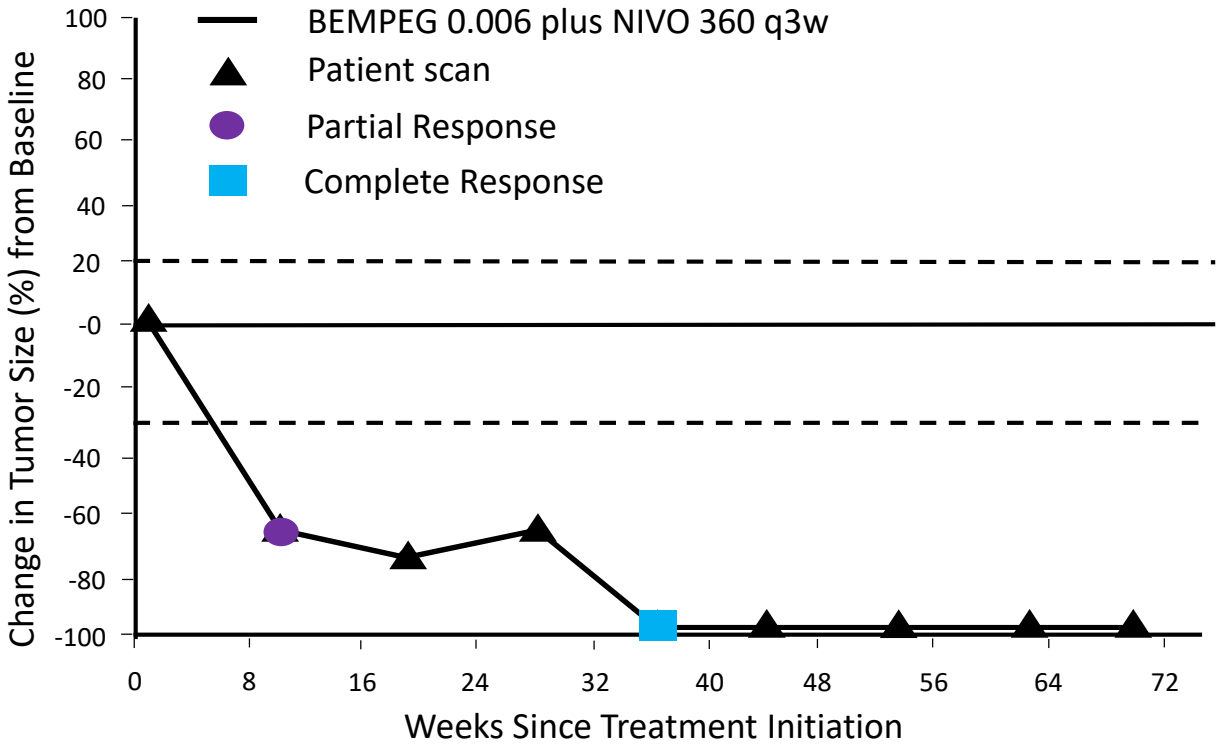
Kaplan-Meier Estimate of mPFS Not Reached (95% CI: 5.3, NE) at Median Follow-up of 18.6 months



Data Cutoff Date: 25SEP2019

Patient with 1L Melanoma and Ongoing Response

Age	Sex	Metastatic Diagnosis	PD-L1 Status	Baseline SLD (mm)	Best % Change from Baseline	Overall Response	TTR (mo)	EOT
74	Male	Sept 2013: Mel T2aN0, Stage 1B Jan 2018: Metastatic MEL Feb 2018: Treatment initiated	+	44	-100.0	CR	PR (2.1)	Ongoing



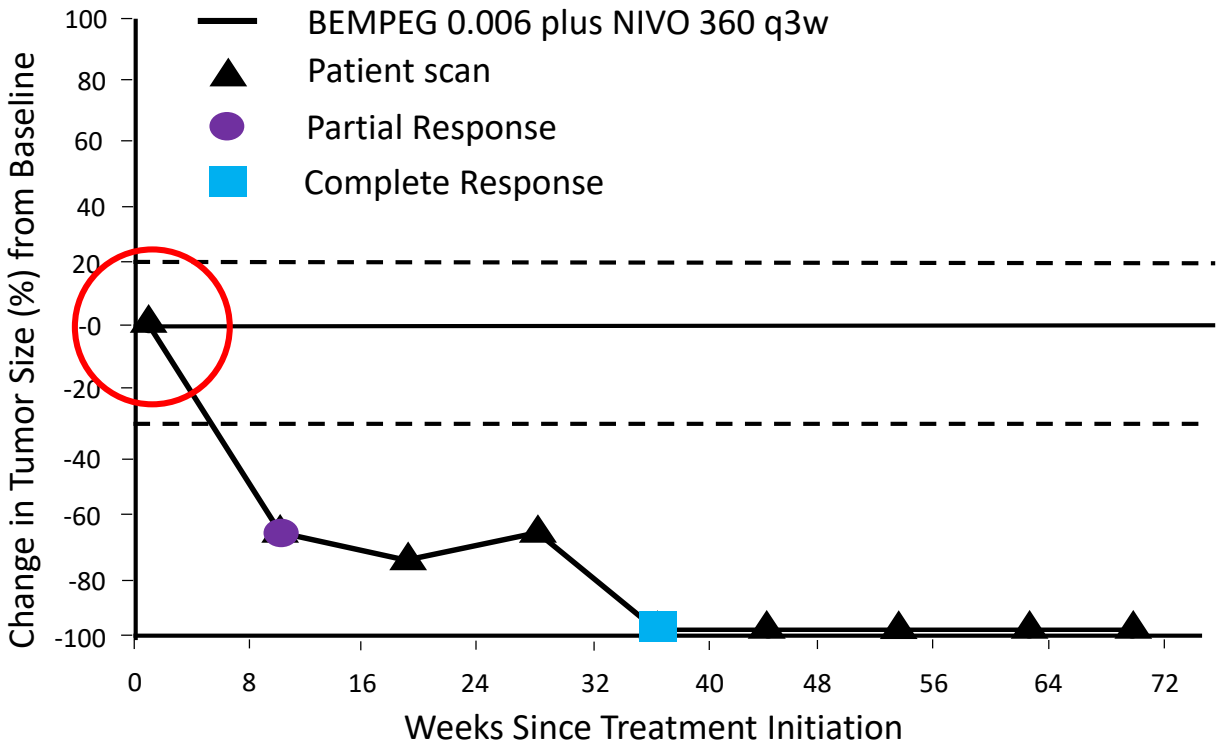
Related/Possibly Related SAE: None

BEMPEG Related AEs (Grade ≥3): None

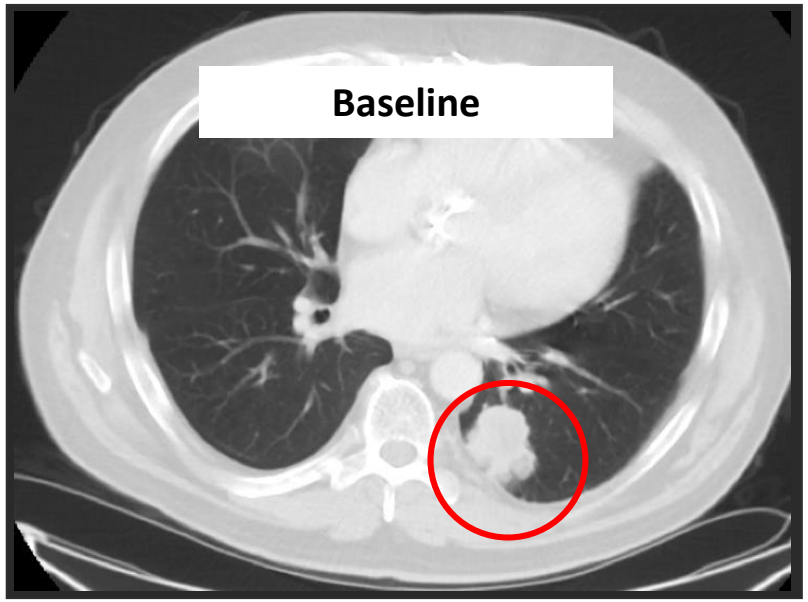
Combination Related (Grade ≥3): None

Patient with 1L Melanoma and Ongoing Response

Age	Sex	Metastatic Diagnosis	PD-L1 Status	Baseline SLD (mm)	Best % Change from Baseline	Overall Response	TTR (mo)	EOT
74	Male	Sept 2013: Mel T2aN0, Stage 1B Jan 2018: Metastatic MEL Feb 2018: Tx initiated	+	44	-100.0	CR	PR (2.1)	Ongoing

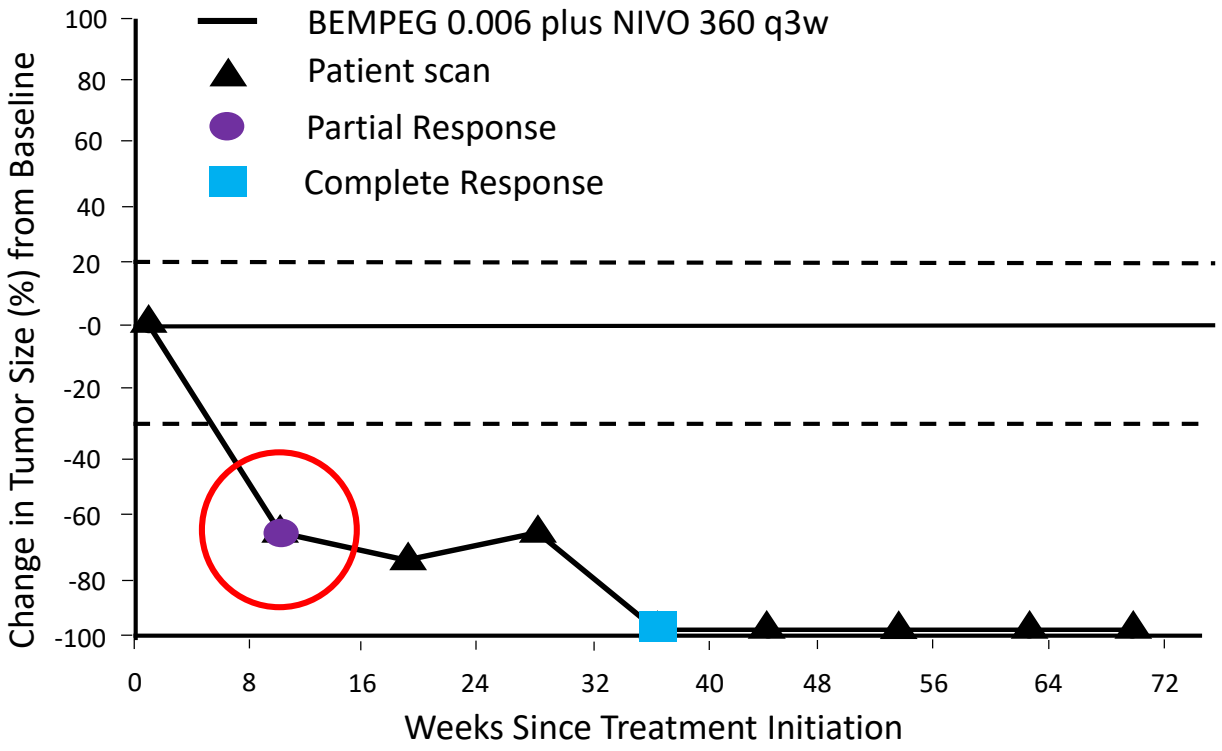


	Lesion Description	Baseline
Target Lesion	Exam/Scan Date	2/20/2018
	T1: Lung - Left Upper Lobe	44
	Sum of the Diameters (% Change from Baseline)	-
Overall Response	RECIST 1.1 from Site	-

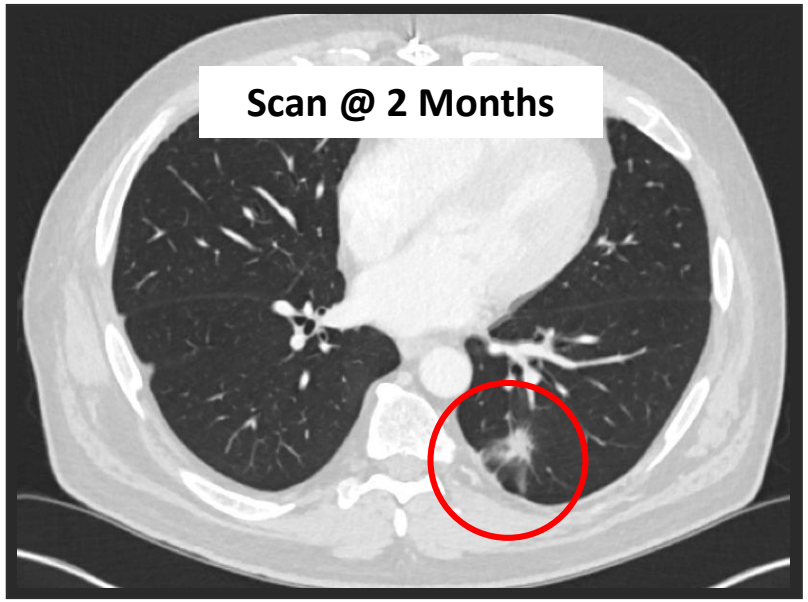


Patient with 1L Melanoma and Ongoing Response

Age	Sex	Metastatic Diagnosis	PD-L1 Status	Baseline SLD (mm)	Best % Change from Baseline	Overall Response	TTR (mo)	EOT
74	Male	Sept 2013: Mel T2aN0, Stage 1B Jan 2018: Metastatic MEL Feb 2018: Tx initiated	+	44	-100.0	CR	PR (2.1)	Ongoing



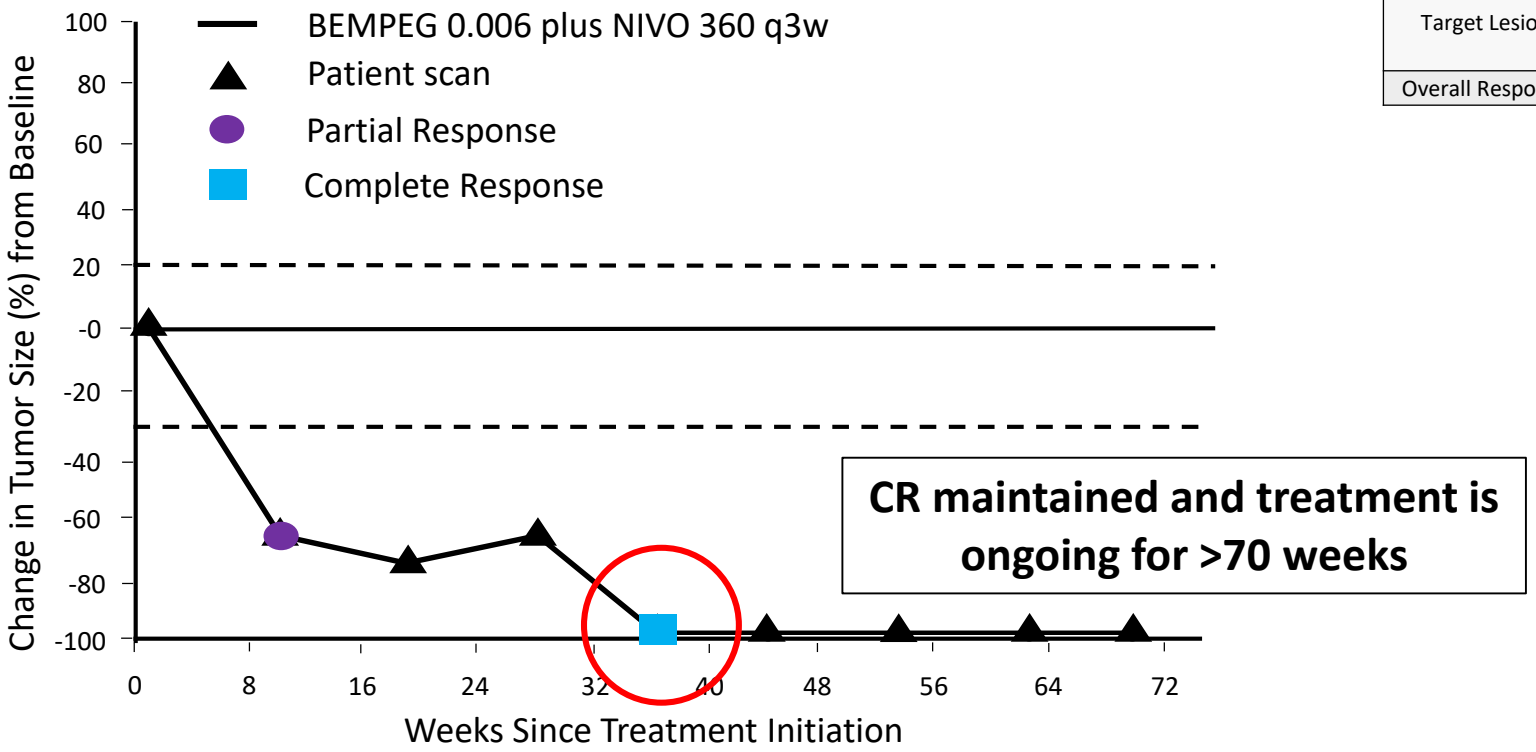
	Lesion Description	Baseline	Scan 1
Target Lesion	Exam/Scan Date	2/20/2018	4/24/2018
	T1: Lung - Left Upper Lobe	44	14
	Sum of the Diameters (% Change from Baseline)	-	-68%
Overall Response	RECIST 1.1 from Site	-	PR

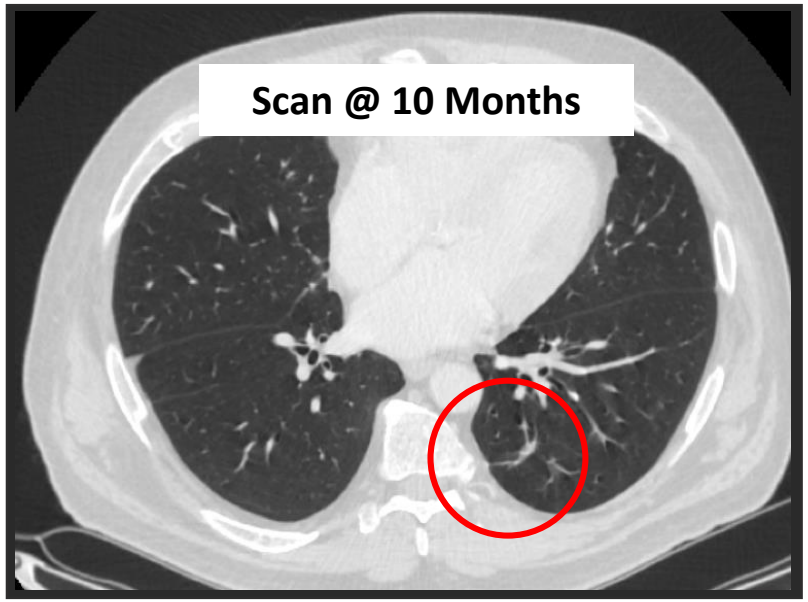


1L Melanoma Patient With Ongoing Response

Age	Sex	Metastatic Diagnosis	PD-L1 Status	Baseline SLD (mm)	Best % Change from Baseline	Overall Response	TTR (mo)	EOT
74	Male	Sept 2013: Mel T2aN0, Stage 1B Jan 2018: Metastatic MEL Feb 2018: Tx initiated	+	44	-100.0	CR	PR (2.1)	Ongoing

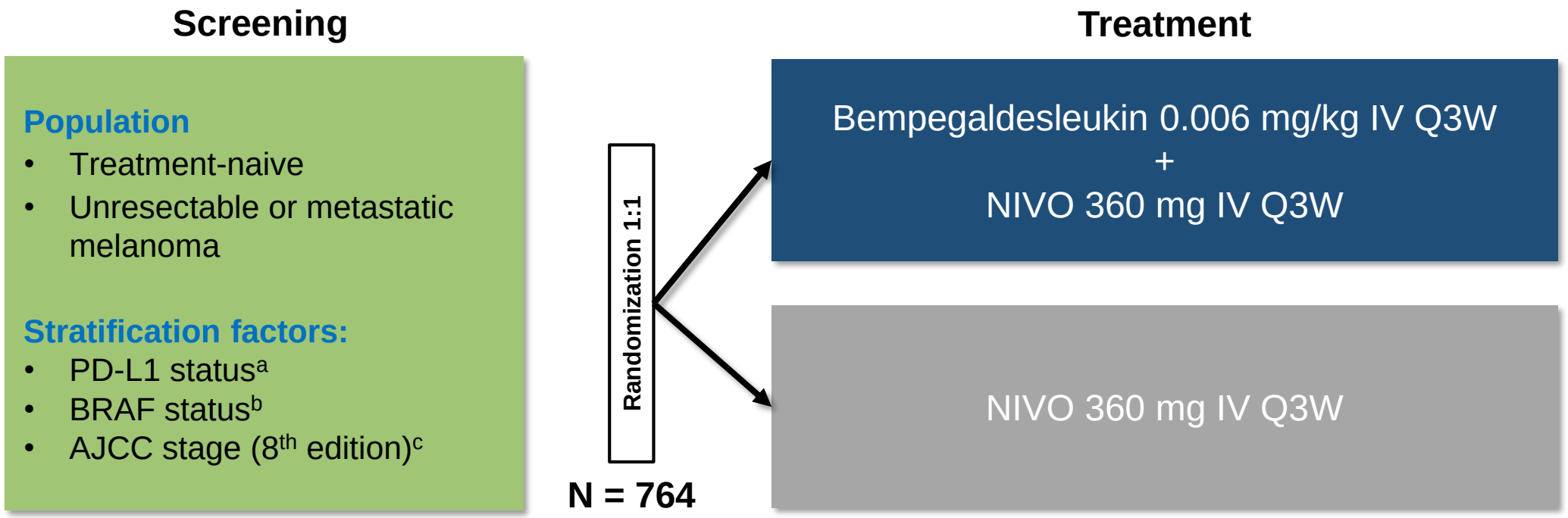
	Lesion Description	Baseline	Scan 5
Target Lesion	Exam/Scan Date	2/20/2018	12/17/2018
	T1: Lung - Left Upper Lobe	44	0
	Sum of the Diameters (% Change from Baseline)	-	-100%
Overall Response	RECIST 1.1 from Site	-	CR





PIVOT IO 001 Study Design

- A Phase 3, Randomized, Open-Label Study of Bempegaldesleukin (BEMPEG) Plus Nivolumab (NIVO) Versus NIVO Monotherapy in Patients With Previously Untreated, Unresectable or Metastatic Melanoma



Primary Endpoints: ORR by BICR, PFS by BICR, OS

[a]Tumor cell PD-L1 expression (≥1% or <1%/Indeterminate) determined using 28-8 pharmDx (Dako, an Agilent Technologies, Inc. company, Santa Clara, CA). [b]V600-mutant vs wild-type. [c]M0/M1 any [0] vs M1 any [1], based on the screening imaging and laboratory test results (lactate dehydrogenase level).

AJCC, American Joint Committee on Cancer; BICR, blinded independent central review; IV, intravenous; NIVO, nivolumab; ORR, overall response rate; OS, overall survival; PD-L1, programmed death ligand 1; PFS, progression-free survival;Q3W, every 3 weeks; RECIST, Response Evaluation Criteria In Solid Tumors.

Conclusions

After over 18 months of follow-up, BEMPEG plus NIVO in 1L Melanoma:

- Showed clinical activity with **ORR 53% and CR 34%,** in efficacy-evaluable patients
- Notable response rates were observed **regardless of PD-L1 expression**
- Demonstrated that responses were **durable and deepened over time**
- **Median PFS was not reached**
- BEMPEG plus NIVO is **well tolerated**, and TRAEs are predictable and transient, similar to what was previously reported
- BEMPEG, in combination with NIVO, is being further explored in PIVOT IO 001 Melanoma (NCT03635983), PIVOT-09 RCC (NCT03729245) and PIVOT-10 mUC (NCT03785925)

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