



#### European Society for Medical Oncology Immuno-Oncology (ESMO IO) Congress 2021

**Investor & Analyst Call** 

December 6, 2021

This presentation includes forward-looking statements regarding Nektar's proprietary drug candidates, the timing of the start of and plans for ongoing or planned clinical trials with partners, the therapeutic potential of our drug candidates, the timing and outcome of regulatory decisions, and future availability of clinical trial data. Actual results could differ materially, and these statements are subject to important risks detailed in Nektar's filings with the SEC including the Form 10-Q filed on November 5, 2021. Nektar undertakes no obligation to update forward-looking statements as a result of new information or otherwise.

### **Today's Speakers**



Jonathan Zalevsky, PhD

Chief Research & Development Officer at Nektar Therapeutics



Dimitry Nuyten, MD, PhD

Chief Medical Officer at Nektar Therapeutics



Daniel Johnson, MD

Medical Oncologist, Gayle and Tom Benson Cancer Center; Deputy Director, Precision Cancer Therapies (Phase I) Research Program Ochsner Medical Center



Mehmet Altan, MD

Assistant Professor in the Department of Thoracic-Head and Neck Medical Oncology, Division of Cancer Medicine at The University of Texas MD Anderson Cancer Center

## Daniel Johnson, M.D. – Ochsner Medical Center



Daniel Johnson, M.D. is a medical oncologist and the deputy director of the Precision Cancer Therapies (Phase 1) Research Program at Ochsner Medical Center. He specializes in treating patients with melanoma, lung cancer, and head & neck cancer. His specific research interests include strategies to overcome immunotherapy resistance and prevent immunotherapy related toxicities. He has published multiple peer-reviewed articles and presented at various national meetings pertaining to the management and underlying mechanisms of immune toxicity. Dr. Johnson is also a clinical investigator focusing on designing and implementing clinical trials intended to optimize the safety and efficacy of immune checkpoint inhibitors.



## Mehmet Altan, M.D. – MD Anderson Cancer Center



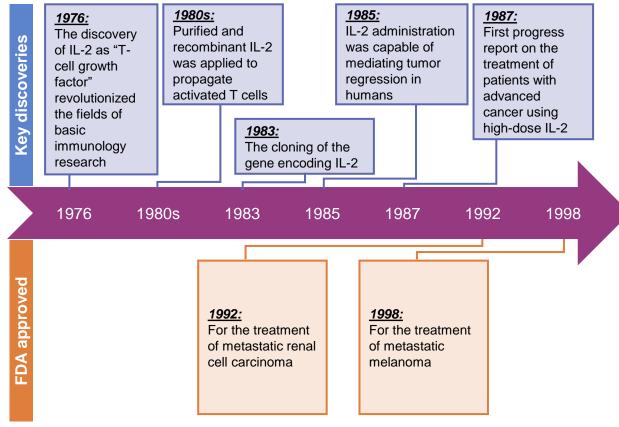
Mehmet Altan, M.D., is an Assistant Professor in the Department of Thoracic-Head and Neck Medical Oncology, Division of Cancer Medicine at The University of Texas MD Anderson Cancer Center. His current research areas include identification of mechanisms for primary and secondary resistance to immunotherapies and predictive markers for immunotherapy toxicities. He also works on translational research projects for identification of spatiotemporal dynamics of the tumor microenvironment in response to immunotherapy to define potential therapeutic targets.

## Agenda

#### Bempegaldesleukin (BEMPEG; NKTR-214): an IL-2 pathway agonist

- IL-2: The Central Immuno-Stimulatory Cytokine
  - Jonathan Zalevsky, Ph.D., Nektar Therapeutics
- ESMO-IO 2021: "Preliminary results from PROPEL: A phase 1/2 study of bempegaldesleukin (BEMPEG: NKTR-214) plus pembrolizumab (PEMBRO) with or without chemotherapy in patients with metastatic NSCLC"
  - Dimitry Nuyten, M.D., Ph.D., Nektar Therapeutics
- Depth of Response and Correlation to PFS and OS in NSCLC with Patient Case Studies from PROPEL
  - Daniel Johnson, M.D., Ochsner Medical Center
- Remarks and Q&A Session
  - Mehmet Altan, M.D., MD Anderson Cancer Center, Daniel Johnson, M.D., Ochsner Medical Center

## IL-2: The Central Immuno-Stimulatory Cytokine A Pathway With Untapped Potential



- High-Dose IL-2 has been associated with complete responses and "durable cancer regression" since its first approvals
- Interleukin-2 (IL-2) was historically one of the few treatments for adults with stage IV solid tumors that could produce complete responses (CRs) that were often durable for decades without further therapy
- The majority of complete responders with metastatic renal cell carcinoma (mRCC) and metastatic melanoma (mM) could probably be classified as "cures"

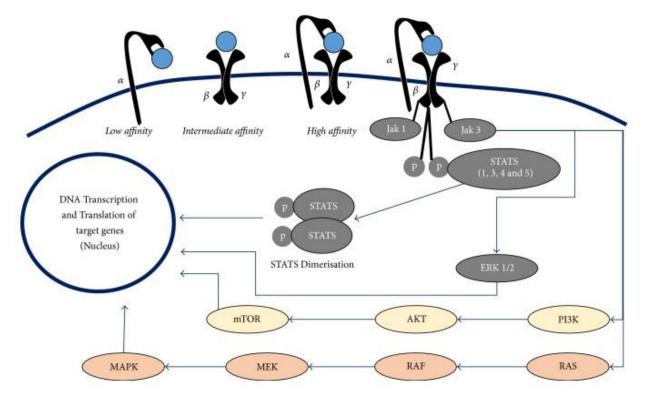
Jiang et al Oncolmmunology (2016)

# IL-2 Pathway: Proven Efficacy in Melanoma and Renal Cell Carcinoma

		HD IL-2 <sup>1</sup> in Melanoma	HD IL-2 <sup>2</sup> in RCC		
Overall response rate (CR+PR)		14-16%	15-34%		
CR rate		6-9%	9%		
Median duration of response	All responders (CR+PR)	9 months	54 months		
	CR Only	59+ mos.	80+ months		
Grade 3+ AEs		80 – 90%			



#### IL-2: The Central Immuno-Stimulatory Cytokine A Pathway With Untapped Potential



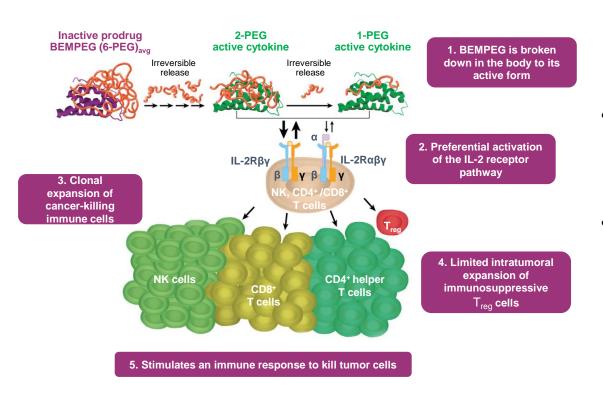
Choudhry et al BioMed Research International (2018)

- IL-2 has dual functional properties that it can act on both Tregs as well as effector T cells
- To achieve an optimal immune-stimulatory effect and overcome short half-life, IL-2 is given in a high dose in 8-hour intervals which results in severe toxicities of HD IL-2 therapy and requirement for hospitalization.
- HD IL-2-induced severe toxicities including vascular leak syndrome (VLS), pulmonary edema, hypotension, and heart toxicities.

#### **BEMPEG: Develop a New Medicine that Both Harnesses and Tames the IL-2 Pathway**

- Bias signaling to favor the IL-2R $\beta\gamma$  complex
  - Increase the CD8 T cells over the Tregs in the tumor
- Deliver controlled, sustained signal to the IL-2 pathway by designing a pro-drug which releases biased, active species
  - Mitigate over-activation of the IL-2 pathway
- Widen the therapeutic window between efficacy and safety
  - Allow significant tumor exposure after a single dose to achieve antibody-like dosing schedule (q3week)
  - Goal of an outpatient medicine

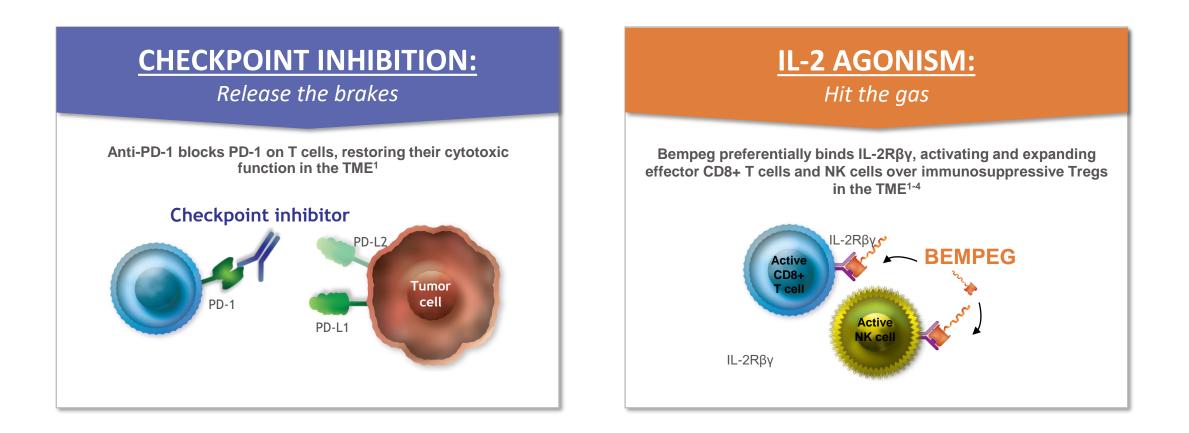
## **BEMPEG: Preferential Signaling Via the IL-2R Pathway**

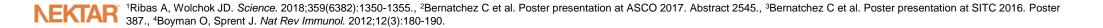


- BEMPEG is an immunostimulatory IL-2 cytokine prodrug, which has been engineered to deliver a controlled, sustained, and preferential IL-2 pathway signal<sup>1,2</sup>
- BEMPEG plus a CPI has been shown to convert baseline tumors from PD-L1 negative to PD-L1 positive<sup>3-6</sup>
- BEMPEG plus either nivolumab or pembrolizumab is being evaluated in patients with:
  - metastatic NSCLC (NCT03138889),
  - metastatic or recurrent HNSCC (NCT04969861),
  - metastatic melanoma (NCT03635983),
  - adjuvant melanoma (NCT04410445),
  - advanced renal cell carcinoma (NCT03729245),
  - metastatic urothelial carcinoma (NCT03785925), and
  - muscle-invasive bladder cancer (NCT04209114)

CD, cluster of differentiation; IL-2(R), interleukin-2 (receptor); NK, natural killer; PEG, releasable polyethylene glycol; Treg, regulatory T cell.; NSCLC: Non-small Cell Lung Cancer; HNSCC: Head and Neck Squamous Cell Carcinoma; 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 AO, et al. ASCO GU 2019. Abstract 388; 5. Hurwitz M, 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

#### Combining an IL-2 Mechanism with Checkpoint Inhibition: Release the Brakes, Hit the Gas





## Scientific and Biological Rationale Supporting BEMPEG + Checkpoint Inhibitors in Solid Tumors

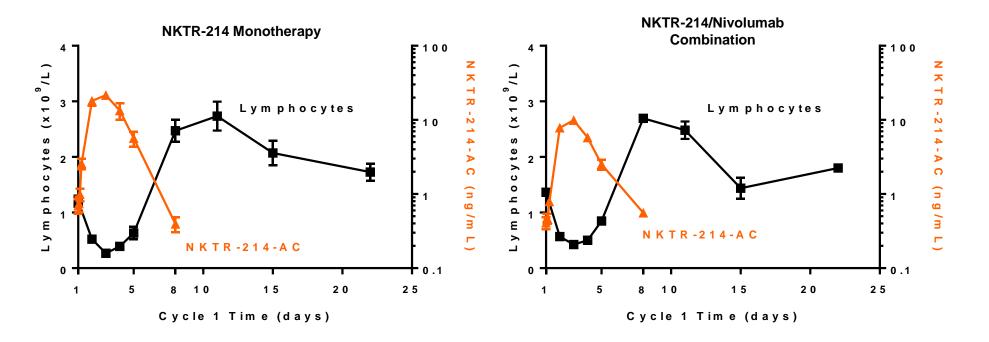
T cells and PD-L1 expression are prognostic

IL-2 is a clinically validated target in multiple solid tumors with approvals in RCC and melanoma

#### **BEMPEG:**

- induces strong T cell proliferation and activation after each treatment cycle
- increases activated T cells and PD-L1 expression in tumor tissue
- synergizes with anti-PD-1 in other tumors that are sensitive to T cells and to anti-PD-1 (MM, mUC, RCC, NSCLC)
- converts tumor tissue from PD-L1 negative to positive as a single agent and in combination with checkpoint
- increases favorable anti-tumor gene expression and interferon gamma
- in combination with nivolumab, BEMPEG yielded an unprecedented CR rate in metastatic melanoma and has a well-tolerated safety profile and BEMPEG's AE profile does not overlap with checkpoint inhibitors

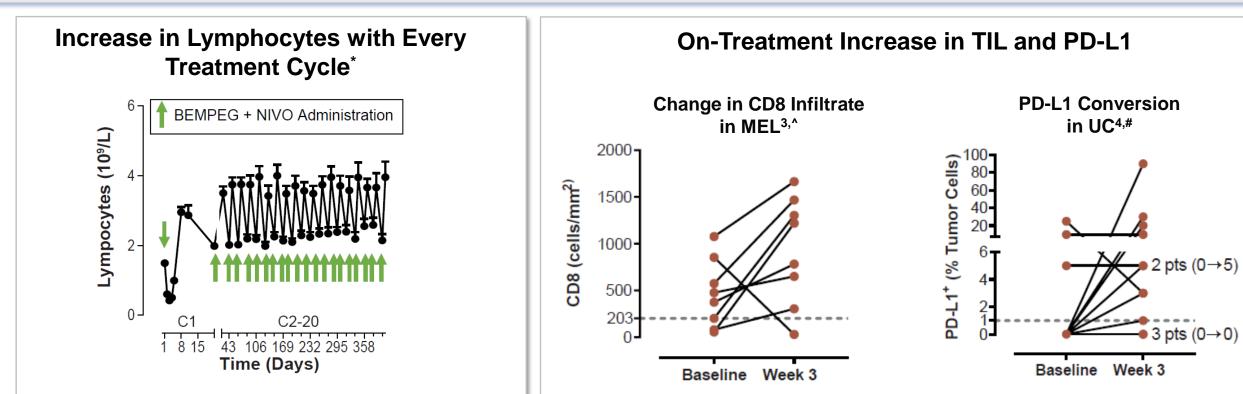
#### Transition of NKTR-214 Prodrug to Active NKTR-214 Related Molecules Correlates with Number of Lymphocytes in Blood



- NKTR-214 prodrug releases Active NKTR-214 related molecules (NKTR-214-AC) over time
- Days 2-4: Peak of NKTR-214-AC coincides with transient lymphopenia
- Day 8-10: Transient lymphocytosis and the presence of proliferating (Ki67+) cells [not shown] are observed as NKTR-214-AC clears circulation
- Lymphocyte effects are driven by NKTR-214 since effects were observed with NKTR-214 monotherapy, with little contribution from Nivolumab

Lymphocyte levels were obtained from standard hematology analysis (N=17 EXCEL and N=328 PIVOT-02). NKTR-214-AC (NKTR-214 active cytokine, 2-PEG and 1-PEG IL-2) measured by a qualified method (N=17 EXCEL and N=48 PIVOT-02).

#### BEMPEG Increases Lymphocytes in the Peripheral Blood which Corresponds to Increases in CD8+ Tumor Infiltrating Lymphocytes (TILs)



Lymphocyte effects of the BEMPEG + NIVO combination are driven by BEMPEG, as a similar pattern is observed with monotherapy<sup>2</sup>

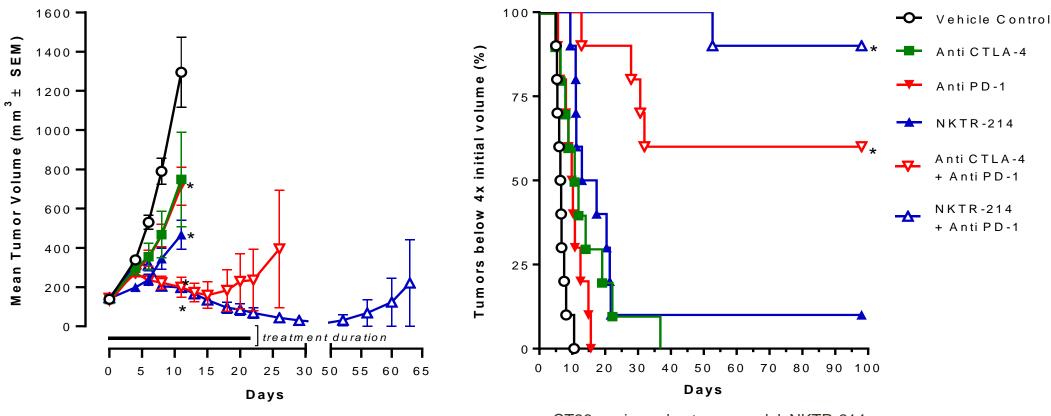
<sup>\*</sup>Lymphocyte levels were obtained from standard hematology analyses. All efficacy evaluable melanoma (n=38) and mUC (n=27) in the BEMPEG + NIVO combination enrolled in PIVOT-02 (n=65, Mean+SD) were included in the analyses.

^IHC for CD8 was obtained by standard methods. All patients with first-line melanoma (1L MEL) with matched Baseline and Week 3 biopsy (n=8) were included in the analyses.

#All patients with 1L urothelial carcinoma (UC) with matched Baseline and Week 3 biopsy (n=13) at time of data cut were included and assessed for PD-L1 expression (DAKO PD-L1 IHC 28-8 pharmDx).

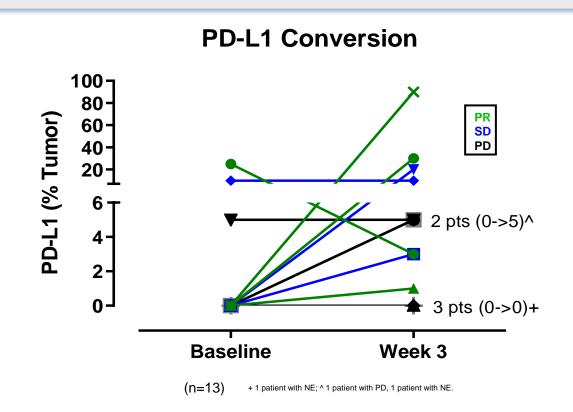
**NEKTAR** 

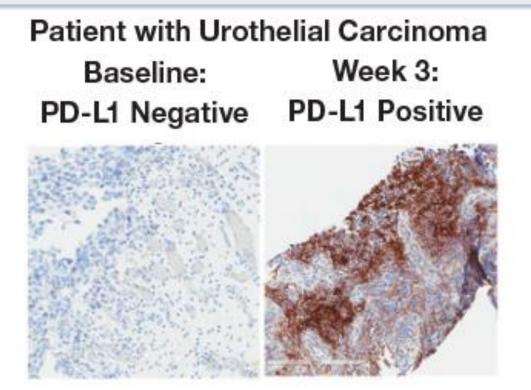
#### In Preclinical Models, Bempeg is a Natural 'Accelerant' for Durable Response to Checkpoint Inhibition



CT26 murine colon tumor model, NKTR-214 0.8mg/kg q9dx3, CPI 200ug/mouse 2x/week

#### BEMPEG in Combination with Nivo Demonstrates On-Treatment PD-L1 Conversion from PD-L1 Negative to Positive

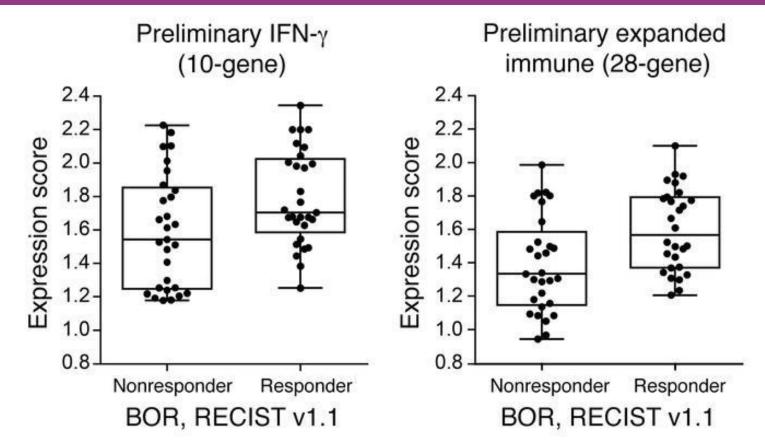




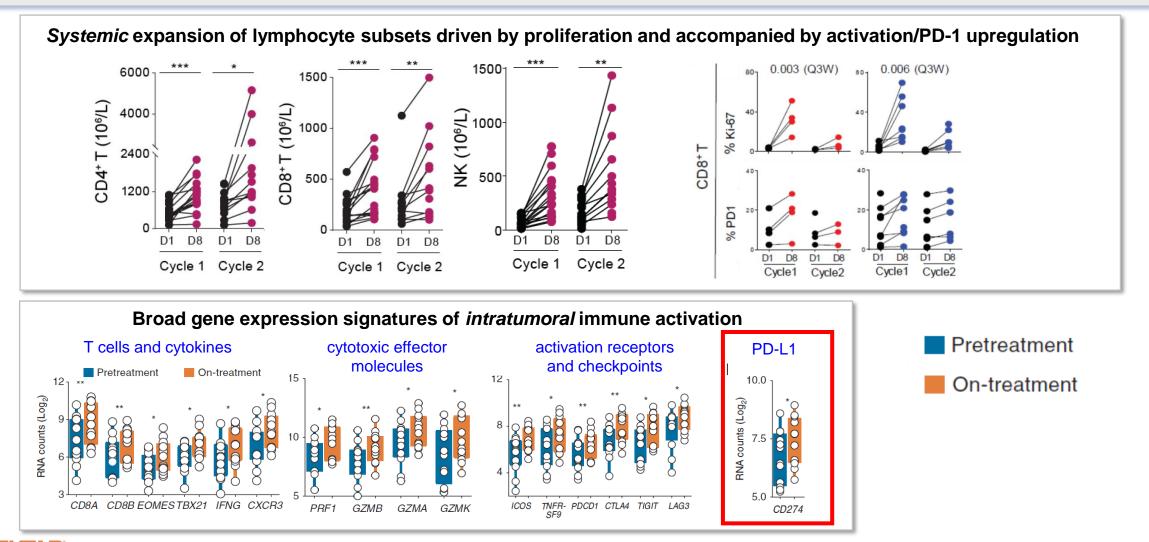
- 13 paired tissue samples were evaluated for changes in PD-L1 expression (28-8 Assay)
- 7 of 10 (70%) patients who were PD-L1 negative at Baseline converted to PD-L1 positive by Week 3
- 3 of 3 patients who were PD-L1 positive at Baseline remained PD-L1 positive

# Interferon Gamma Activation at Baseline Predicts Response to Pembrolizumab in Melanoma, SCCHN and NSCLC

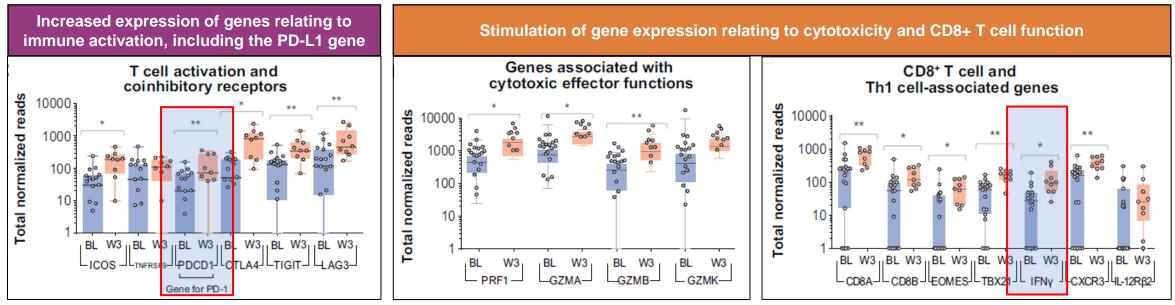
Box plots for the IFN-γ 10-gene and 28-gene expanded immune signatures and best overall response with clinical outcomes under anti–PD-1 therapy



#### Bempeg Monotherapy Expands Lymphocytes and Activates Genes Associated with T cells, Effector Cells and PD-L1



# PIVOT-02: BEMPEG + Nivo Enhanced Intratumoral Expression of Immune-Related Genes, Including the Gene Encoding PD-L1



Transcriptional analysis of tumor biopsies at baseline (blue) and after 3 weeks of combination treatment (orange). Unpaired t-test (one-tailed): \*\* P<0.01; \* P<0.05.

BL, baseline; W, week.

#### Treatment with BEMPEGaldesleukin in combination with nivolumab led to enhanced expression of genes associated with CD45+ lymphocytes, CD8+ T cells, macrophages, and cytotoxic cells

## Scientific and Biological Rationale Supporting BEMPEG + Checkpoint Inhibitors in Solid Tumors

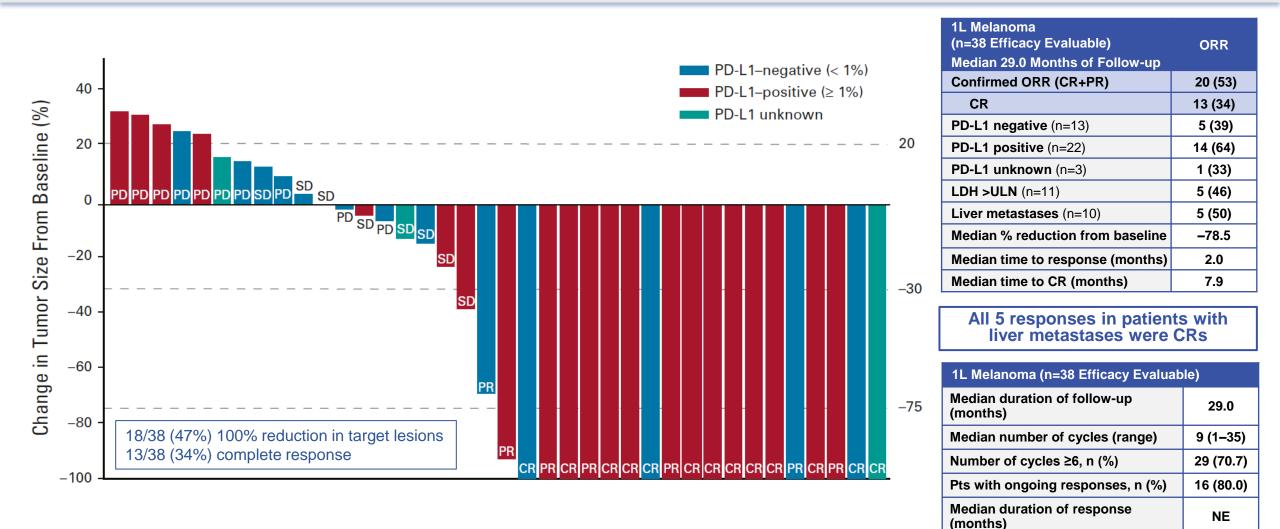
T cells and PD-L1 expression are prognostic

IL-2 is a clinically validated target in multiple solid tumors with approvals in RCC and melanoma

#### **BEMPEG:**

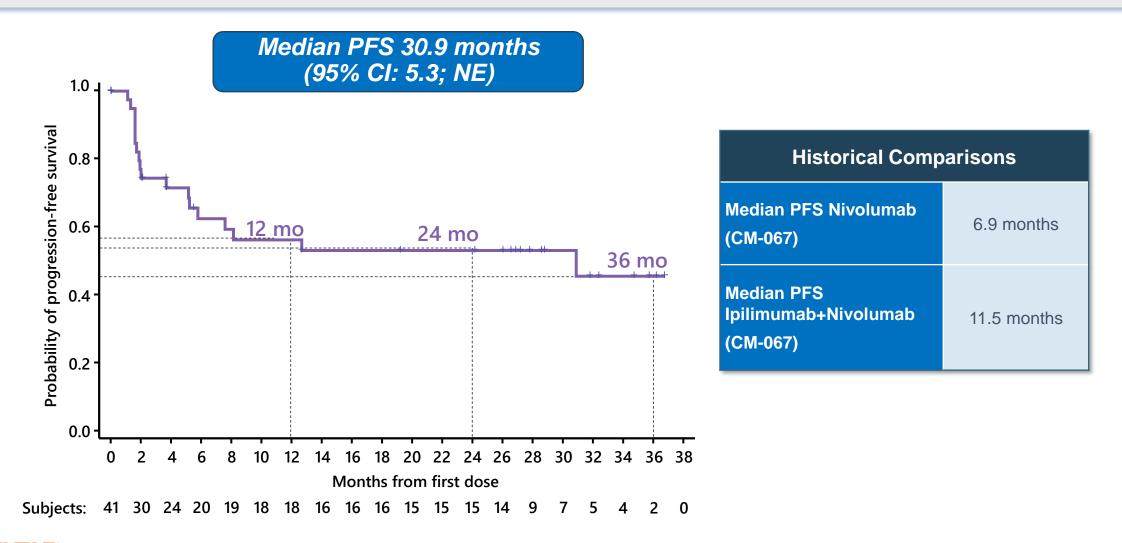
- induces strong T cell proliferation and activation after each treatment cycle
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## Stage IV 1L Melanoma: Best Overall Response by Independent Radiology



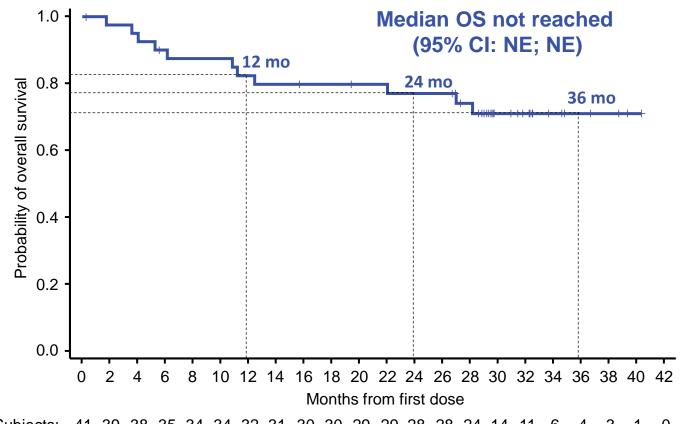
CR complete response; LDH, lactate dehydrogenase; ORR, objective response rate; PD-L1, programmed death-ligand 1; PR, partial response; SD, stable disease

#### SITC 2020: BEMPEG plus NIVO Demonstrated mPFS 30.9 Months at Median Follow-up of 29.0 Months



KIAK Sources: SITC 2020 (BEMPEG plus NIVO); CHECKMATE-067 Sources: NEJM Larkin et. al, 2015. NEJM Wolchok et. al., 2017.

#### mOS Not Reached (95% CI: NE, NE) at Median Follow-up of 29.0 Months<sup>1</sup>



Kaplan–Meier Estimate of Overall Survival	Total (N=41)			
Rate at 12 months, % (95% CI)	82.3 (66.4; 91.1)			
Rate at 24 months, % (95% CI)	77.0 (60.4; 87.3)			
Rate at 36 months, % (95% CI)	70.9 (53.5; 82.8)			

39 38 35 34 34 32 31 30 30 29 29 28 28 24 14 11 6 Subjects: 41 4 3 1 0

Data cutoff: 1SEPT2020.

NE, not estimable; mOS, median overall survival

1. Diab A, et al. J Immunother Cancer 2020;8(Suppl 3):A446: Abstract 420.

The BEMPEG compound and the combination of agents and their uses have not been approved.

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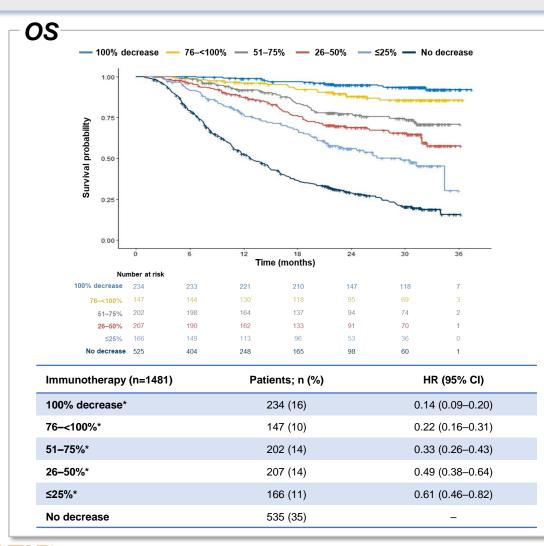
# Depth of Response (DpR) Correlates with Longer PFS/OS in Melanoma

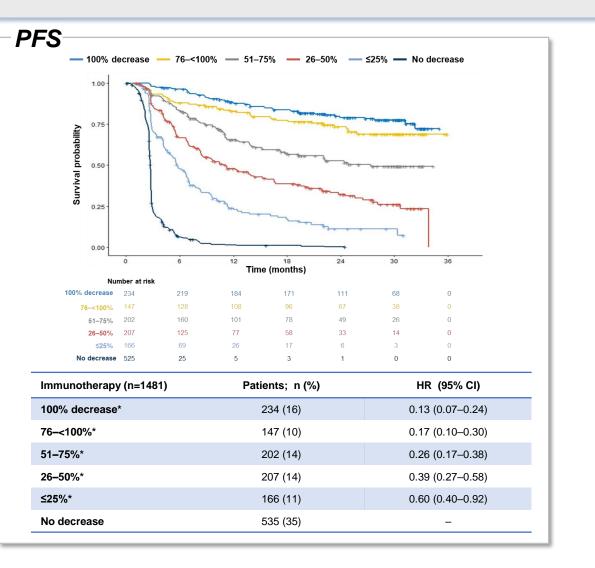
Two studies have shown that depth of response correlates with a longer PFS and OS in melanoma, regardless of therapy type

One study has shown that early tumor size changes (Week 12) are predictive of survival

Study	Patient population	Number of studies	Treatments	Analysis method	Association between depth of response and:	
					OS	PFS
<b>C</b>	Previously treated advanced or metastatic melanoma	10 RCTs	TKI (BRAF, MEK inhibitors)	Cox proportional hazards model	Yes	Yes
			Immunotherapy (antibodies targeting PD-1 or CTLA-4)		Yes	Yes
			Chemotherapy		Yes	Yes
Lewis, 2019	BRAFV600-mutated metastatic melanoma	4 trials	MEK inhibitor/ BRAF inhibitor	Cox proportional hazards model	Yes	Yes
Wang, 2019	Previously treated and treatment naïve advanced or metastatic melanoma	3 trials	Pembrolizumab and ipilimumab	Cox proportional hazards model – early tumor size changes (12 weeks)	Yes	Not Reported

#### OS and PFS by Depth of Response in Melanoma – Immunotherapy





## Scientific and Biological Rationale Supporting BEMPEG + Checkpoint Inhibitors in Solid Tumors

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In melanoma, depth of response is associated with longer PFS and OS with CPIs and other agents

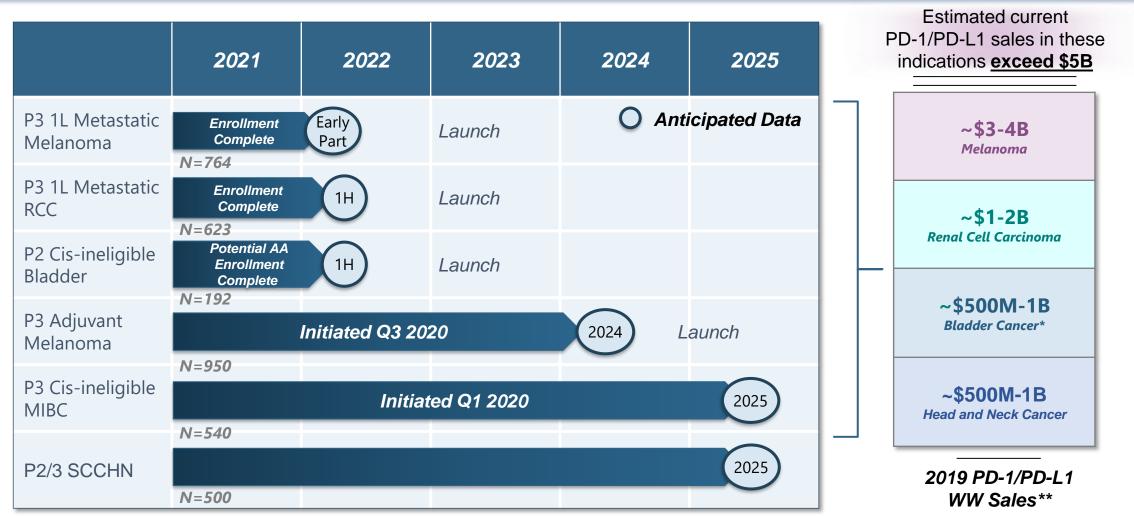


## **BEMPEG Development Program**

Program Indication		Study	Preclinical	Phase 1	Phase 2	Phase 3	
1L Metastatic Melanoma	<b>BEMPEG + OPDIVO<sup>®</sup> vs. OPDIVO<sup>®</sup></b>		Registrational Study			ional Study	ر <sup>ال</sup> ا Bristol Myers Squibb
1L Renal Cell Carcinoma	BEMPEG + OPDIVO <sup>®</sup> vs. TKI		Registrational Study				ر <sup>ال</sup> Bristol Myers Squibb
Muscle-invasive Bladder Cancer	BEMPEG + OPDIVO <sup>®</sup> vs. OPDIVO <sup>®</sup>			ر <sup>اار</sup> Bristol Myers Squibb			
Adjuvant Melanoma	BEMPEG + OPDIVO <sup>®</sup> vs. OPDIVO <sup>®</sup>		Registrational Study				ر <sup>اار</sup> Bristol Myers Squibb
Cis-Ineligible Bladder Cancer	BEMPEG + OPDIVO <sup>®</sup>		AA Registrational Study				ر <sup>اار</sup> Bristol Myers Squibb
1L Head & Neck Cancer	BEMPEG + KEYTRUDA <sup>®</sup>		Planned Registrational Study				
1L Renal Cell Carcinoma	BEMPEG + OPDIVO <sup>®</sup> +	ткі					ر <sup>اار</sup> Bristol Myers Squibb
1L NSCLC	BEMPEG + KEYTRUDA <sup>®</sup>	+/- chemotherapy					
R/R Head & Neck Cancer	BEMPEG + VB10.NEO						vaccibody



#### **BEMPEG Poised for Multiple Potential Approvals** in 2023-2025



AA: Accelerated Approval

\*Bladder cancer sales WW represent indications of Non-Muscle Invasive Bladder Cancer, PD-L1 high expression patient populations, and second-line indications, as there are no approvals in 1L low PD-L1 expressing populations in bladder cancer setting currently or in MIBC setting.

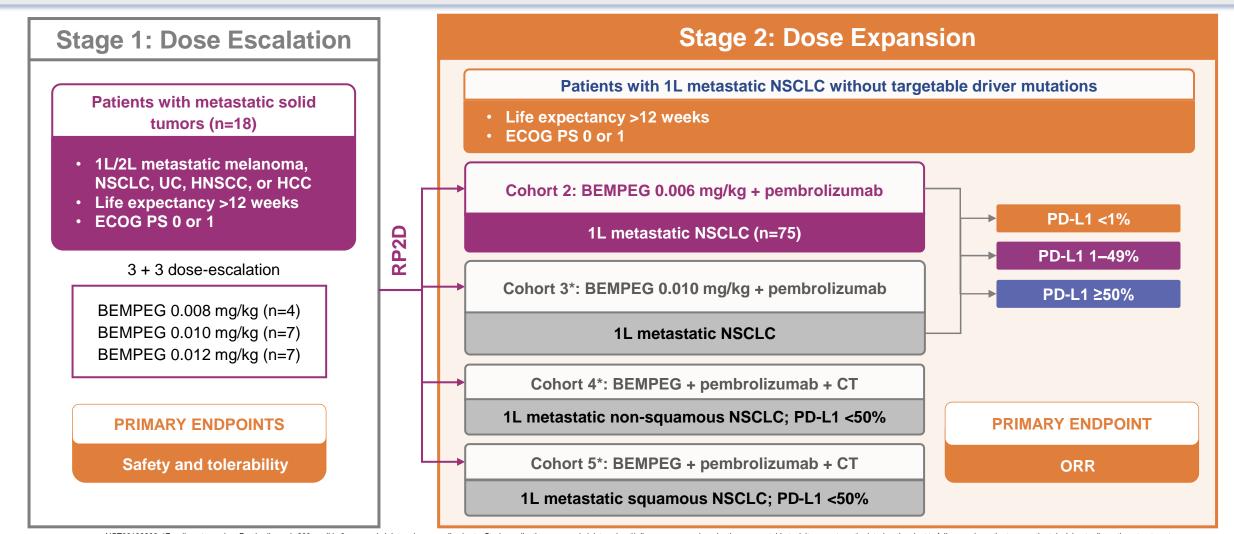
\*\*Source for 2020 PD-1/PD-L1 (Opdivo, Keytruda, Tecentriq, Imfinzi, Bavencio) WW Sales: Evaluate Pharma; Referenced 7 January 2021. Represents sales ranges across all lines of therapy

## Agenda

#### Bempegaldesleukin (BEMPEG; NKTR-214): an IL-2 pathway agonist

- IL-2: The Central Immuno-Stimulatory Cytokine
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# **PROPEL: A Phase 1/2 Study**



**NEKTAR** 

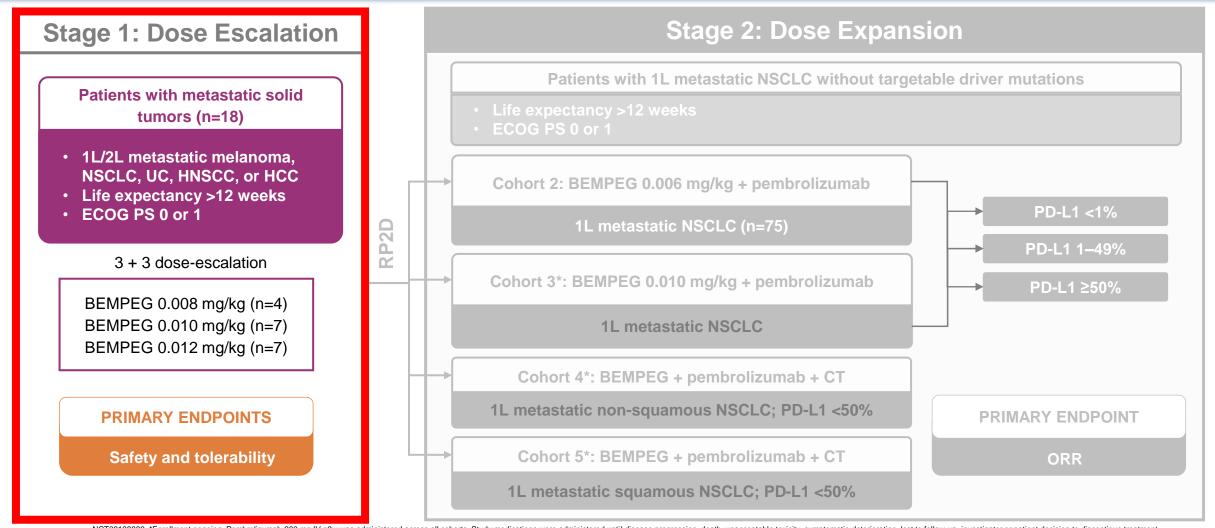
NCT03138889. \*Enrollment ongoing. Pembrolizumab 200 mg IV q3w was administered across all cohorts. Study medications were administered until disease progression, death, unacceptable toxicity, symptomatic deterioration, lost to follow-up, investigator or patient decision to discontinue treatment, withdrawal of consent or termination of the study by the sponsor. Patients in Cohorts 4 and 5 received SOC platinum doublet chemotherapy in addition to the study medications noted for Cohort 2. In France, patients in subgroup PD-L1 <50% were excluded from Cohorts 2 and 3. 1L, first-line; 2L, second-line; BEMPEG, bempegaldesleukin; CT, chemotherapy; ECG PS, Eastern Cooperative Oncology Group performance status; HCC, hepatocellular carcinoma; IV, intravenous; HNSCC, head and neck squamous cell carcinoma; NSCLC, non-small cell lung cancer; ORR, objective response rate; PD-L1, programmed death ligand-1; q3w, every 3 weeks; SOC, standard of care; UC, urothelial cancer.

## **Study Procedures and Assessments**

Safety and tolerability	Efficacy	PD-L1 status (Cohort 2)		
<ul> <li>AEs were assessed by CTCAE v5.0</li> </ul>	<ul> <li>Objective response per RECIST 1.1 by BICR targeting scans every 9 (±1) weeks</li> </ul>	<ul> <li>Local assessment was used for enrolment</li> </ul>		
<ul> <li>Safety population: all patients who received ≥1 dose of treatment</li> </ul>	<ul> <li>Efficacy-evaluable population: patients with ≥1 post-baseline, on-treatment radiographic scans</li> </ul>	<ul> <li>Central assessment available for 91% of patients and was utilized for PD-L1 subgroup analyses when available</li> </ul>		



## **PROPEL: A Phase 1/2 Study**



**NEKTAR** 

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#### Patient Demographics and Disease Characteristics in the Dose-Escalation Cohort

		BEMPEG 0.008 mg/kg + pembrolizumab (n=4)	BEMPEG 0.010 mg/kg + pembrolizumab (n=7)	BEMPEG 0.012 mg/kg + pembrolizumab (n=7)	
Median age, years (range)		59.5 (49–72)	68.0 (43–76)	65.0 (53–74)	
Male sex, n (%)		2 (50.0)	3 (42.9)	2 (28.6)	
ECOG PS, n (%)	0	3 (75.0)	2 (28.6)	5 (71.4)	
	1	1 (25.0)	5 (71.4)	2 (28.6)	
Cancer diagnosis, n (%)	Melanoma (1L-3L)	2 (50.0)	3 (42.9)	4 (57.1)	
	NSCLC (1L-3L)	1 (25.0)	3 (42.9)	2 (28.6)	
	UC (2L)	1 (25.0)	0	1 (14.3)	
	HNSCC (1L)	0	1 (14.3)	0	

BEMPEG, bempegaldesleukin; ECOG PS, Eastern Cooperative Oncology Group performance status; HNSCC, head and neck squamous cell carcinoma; NSCLC, non-small cell lung cancer; UC, urothelial cancer.

All patients enrolled in dose escalation had Stage IV metastatic disease excepted for one patient with recurrent Stage III NSCLC

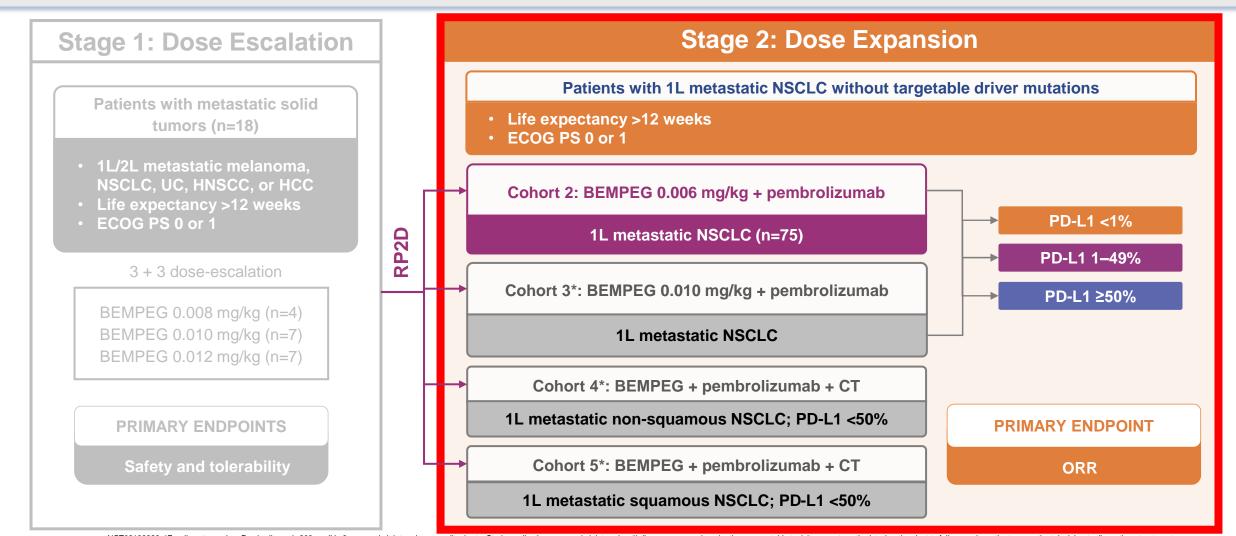
## **Safety for the Dose-Escalation Cohorts**

- No Grade 5 TRAEs were reported. One DLT (Grade 3 hypotension) was noted at the 0.010 mg/kg dose level within the first treatment cycle
- 28% of patients (4/14) at the highest dose levels required a dose reduction due to TRAEs (2/7 BEMPEG 0.010 mg/kg; 2/7 BEMPEG 0.012 mg/kg)
- BICR RECIST 1.1 responses were observed for 3 patients in the BEMPEG 0.010 mg/kg + pembrolizumab cohort (1L HNSCC [CR], 1L melanoma [PR], and 2L [refractory to pembrolizumab monotherapy] melanoma [PR])

TRAEs reported in >3 patients; n (%)	BEMPEG 0.008 mg/kg + pembrolizumab (n=4)		BEMPEG 0.010 mg/kg + pembrolizumab (n=7)		BEMPEG 0.012 mg/kg + pembrolizumab (n=7)	
	Any Grade	Grade ≥3	Any Grade	Grade ≥3	Any Grade	Grade ≥3
Any	4 (100.0)	2 (50.0)	7 (100.0)	4 (57.1)	7 (100.0)	4 (57.1)
Chills	2 (50.0)	0	2 (28.6)	0	6 (85.7)	0
Fatigue	2 (50.0)	0	6 (85.7)	3 (42.9)	3 (42.9)	0
Nausea	2 (50.0)	0	7 (100.0)	1 (14.3)	2 (28.6)	0
Pruritus	2 (50.0)	0	2 (28.6)	0	2 (28.6)	0
Diarrhea	1 (25.0)	0	4 (57.1)	2 (28.6)	1 (14.3)	0
Hypotension	1 (25.0)	0	2 (28.6)	1 (14.3)	2 (28.6)	0
Influenza-like illness	1 (25.0)	0	2 (28.6)	0	2 (28.6)	0
Pyrexia	1 (25.0)	0	7 (100.0)	0	4 (57.1)	0
Rash maculo-papular	1 (25.0)	0	1 (14.3)	0	2 (28.6)	1 (14.3)
Vomiting	1 (25.0)	0	4 (57.1)	0	1 (14.3)	0
ALT increased	0	0	2 (28.6)	0	2 (28.6)	0
Arthralgia	0	0	4 (57.1)	0	1 (14.3)	1 (14.3)
AST increased	0	0	2 (28.6)	0	2 (28.6)	0

ALT, alanine aminotransferase; AST, aspartate aminotransferase; BEMPEG, bempegaldesleukin; TRAE, treatment-related adverse event.

# **PROPEL: A Phase 1/2 Study**



**NEKTAR** 

NCT03138889. \*Enrollment ongoing. Pembrolizumab 200 mg IV q3w was administered across all cohorts. Study medications were administered until disease progression, death, unacceptable toxicity, symptomatic deterioration, lost to follow-up, investigator or patient decision to discontinue treatment, withdrawal of consent or termination of the study by the sponsor. Patients in cohorts 2 and 3 received SOC platinum doublet chemotherapy in addition to the study medications noted for Cohort 2. In France, patients in subgroup PD-L1 <50% were excluded from Cohorts 2 and 3. 1L, first-line; 2L, second-line; BEMPEG, bempegaldesleukin; CT, chemotherapy; ECOG PS, Eastern Cooperative Oncology Group performance status; HCC, hepatocellular carcinoma; IV, intravenous; HNSCC, head and neck squamous cell carcinoma; NSCLC, non-small cell lung cancer; ORR, objective response rate; PD-L1, programmed death ligand-1; q3w, every 3 weeks; SOC, standard of care; UC, urothelial cancer.

### Patient Demographics and Disease Characteristics in the Dose-Expansion Cohort

			PD-L1 status		All
		<1% (n=28)	1–49% (n=28)	≥50% (n=19)	(n=75)
Median age, years (range)		65.5 (46–83)	65.5 (51–80)	62.0 (40–79)	65 (40–83)
Male sex, n (%)		20 (71.4)	20 (71.4)	11 (57.9)	51 (68.0)
ECOG PS, n (%)	0	14 (50.0)	10 (35.7)	8 (42.1)	32 (42.7)
	1	14 (50.0)	18 (64.3)	10 (52.6)	42 (56.0)
Histology, n (%)	Squamous	13 (46.4)	13 (46.4)	4 (21.1)	30 (40.0)
	Non-squamous	15 (53.6)	15 (53.6)	15 (78.9)	45 (60.0)
Smoking status, n (%)	Current	9 (32.1)	8 (28.6)	6 (31.6)	23 (30.7)
	Former	17 (60.7)	18 (64.3)	11 (57.9)	46 (61.3)
	Non-smoker	2 (7.1)	2 (7.1)	2 (10.5)	6 (8.0)
Metastases, n (%)	Brain	4 (14.3)	1 (3.6)	1 (5.3)	6 (8.0)
	Liver	6 (21.4)	1 (3.6)	3 (15.8)	10 (13.3)
Stage at diagnosis, n (%)*	<u> _  </u>	4 (14.3)	3 (10.7)	2 (10.5)	9 (12.0)
	III	2 (7.1)	6 (21.4)	0	8 (10.7)
	IV	21 (75.0)	19 (67.9)	17 (89.5)	57 (76.0)
Prior chemotherapy, n (%)		2 (7.1)	7 (25.0)	1 (5.3)	10 (13.3)

\*One patient (PD-L1 status <1%) had missing stage at diagnosis.

ECOG PS, Eastern Cooperative Oncology Group performance status; PD-L1, programmed death ligand-1.

### Safety for the Dose-Expansion Cohort in NSCLC

TDAE we would be a $400%$ of motion to a $10%$	All (n=75)		
TRAEs reported in >10% of patients; n (%)	Any Grade	Grade ≥3	
Any	69 (92.0)	30* (40.0)	
Pyrexia	25 (33.3)	0	
Fatigue	19 (25.3)	3 (4.0)	
Asthenia	15 (20.0)	1 (1.3)	
Influenza-like illness	13 (17.3)	1 (1.3)	
Pruritus	13 (17.3)	0	
Nausea	12 (16.0)	0	
AST increased	11 (14.7)	1 (1.3)	
ALT increased	10 (13.3)	1 (1.3)	
Arthralgia	10 (13.3)	1 (1.3)	
Diarrhea	10 (13.3)	1 (1.3)	
Hyperthyroidism	10 (13.3)	2 (2.7)	
Lymphocyte count decreased**	10 (13.3)	7 (9.3)	
Rash	10 (13.3)	2 (2.7)	
Chills	8 (10.7)	0	
Hypotension	8 (10.7)	1 (1.3)	

Nine subjects (12%) reported ≥1 serious TRAE.

\*One Grade 5 TRAE of myasthenic syndrome was reported that was considered related to pembrolizumab only by the investigator.

\*\*Transient lymphocyte count decrease within the first 72 hours is a known result of BEMPEG treatment and is followed by lymphocytosis by Day 8.

ALT, alanine aminotransferase; AST, aspartate aminotransferase; TRAE, treatment-related adverse event.

### ORR by RECIST 1.1 per Blinded Independent Central Radiology

- Median duration of response was not reached for patients with an objective response
- Median time to response is 2.1 months (1.4 4.2)

Efficacy-evaluable population* –			PD-L1 status		
		<1% (n=28)	1–49% (n=27)	≥50% (n=15)	(n=70)
ORR, n (%)		5 (18)	1 (4)	6 (40)	12 (17)
Best response, n (%)	CR	0 (0)	0 (0)	2 (13)	2 (3)
	PR	5** (18)	1 (4)	4 (27)	10 (14)
	SD	6 (21)	14 (52)	4 (27)	24 (34)
	PD	16 (57)	11 (41)	4 (27)	31 (44)
	NE	1 (4)	1 (4)	1 (7)	3 (4)
DCR (CR + PR + SD)	, n (%)	11 (39)	15 (56)	10 (67)	36 (51)

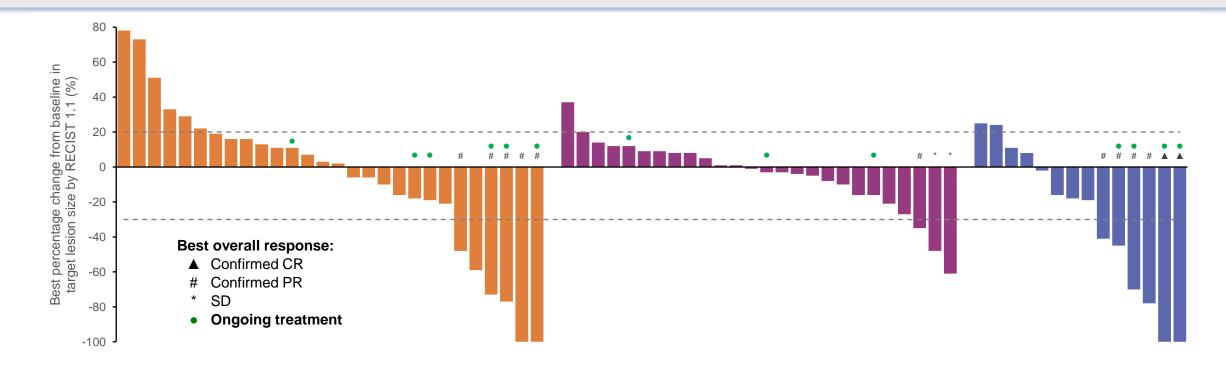
\*Five patients were not included in the efficacy-evaluable population; one patient (PD-L1 status 1–49%) had no post-baseline imaging due to an SAE of pulmonary embolus (investigator deemed it unrelated to either BEMPEG or pembrolizumab) and four patients (all PD-L1 status ≥50%) had no post-baseline imaging due to an SAE of Lambert–Eaton syndrome (n=1) (investigator deemed it related to both BEMPEG and pembrolizumab), AEs of fatigue (n=1) (investigator deemed it related to both BEMPEG and pembrolizumab) and infusion reaction (n=1) (investigator deemed it related to BEMPEG), or death due to myasthenic syndrome (n=1) (investigator deemed it related to pembrolizumab).

\*\*Two patients with a PR had a 100% reduction in target lesions from baseline.

AE, adverse event; CR, complete response; DCR, disease control rate; NE, not evaluable; ORR, objective response rate; PD L1, programmed death ligand 1; PD, progressive disease; PR, partial response; RECIST, Response Evaluation Criteria in Solid Tumors; SAE, serious adverse event; SD, stable disease.



### Best Overall Response by PD-L1 Status per Blinded Independent Central Radiology

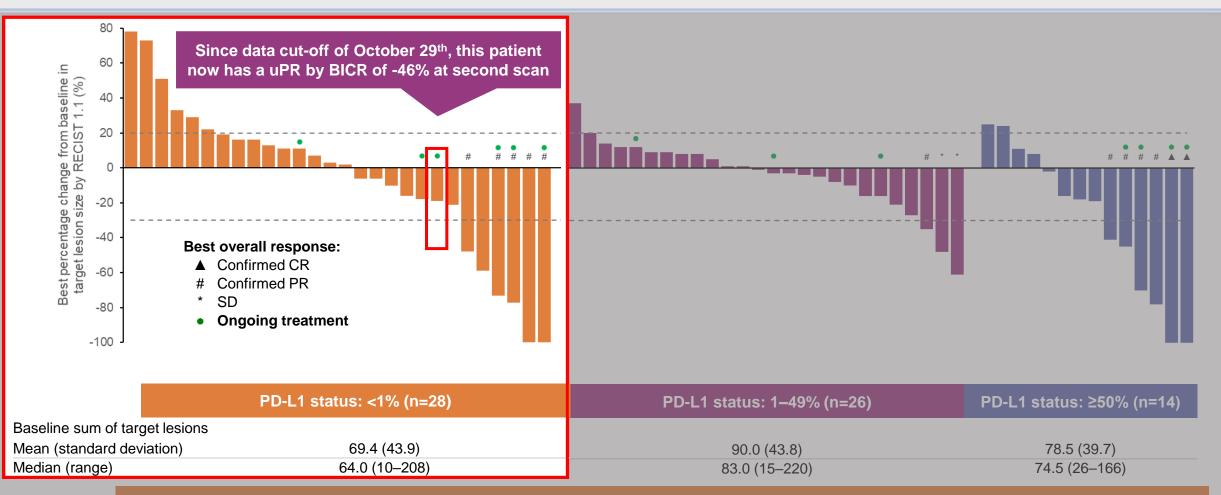


	PD-L1 status: <1% (n=28)	PD-L1 status: 1–49% (n=26)	PD-L1 status: ≥50% (n=14)
Baseline sum of targ	get lesions		
Mean (standard devi	iation) 69.4 (43.9)	90.0 (43.8)	78.5 (39.7)
Median (range)	64.0 (10–208)	83.0 (15–220)	74.5 (26–166)

#### 75% median reduction in baseline target lesions for patients with a RECIST 1.1 response

Two efficacy-evaluable patients (PD-L1 status 1–49%, n=1 [NE] and PD-L1 status ≥50%, n=1 [best response PD]) are not shown due to missing post-baseline target lesion measurements. CR, confirmed RECIST complete response; NE, not evaluable; PD, progressive disease; PD-L1, programmed death ligand-1; PR, confirmed RECIST partial response; RECIST, Response to a status 20% of the status 20%

### Best Overall Response by PD-L1 Status per Blinded Independent Central Radiology



#### 75% median reduction in baseline target lesions for patients with a RECIST 1.1 response

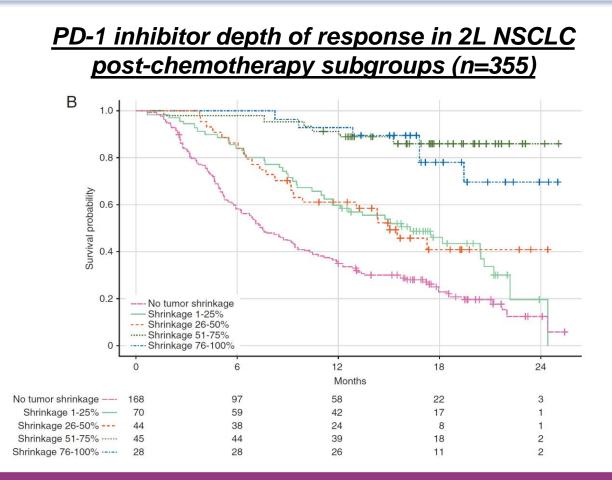
Two efficacy-evaluable patients (PD-L1 status 1–49%, n=1 [NE] and PD-L1 status ≥50%, n=1 [best response PD]) are not shown due to missing post-baseline target lesion measurements. CR, confirmed RECIST complete response; NE, not evaluable; PD, progressive disease; PD-L1, programmed death ligand-1; PR, confirmed RECIST partial response; uPR, unconfirmed RECIST partial response; RECIST, Response Evaluation Criteria in Solid Tumors; SD, stable disease.

### **Key Takeaways from PROPEL Data**

- BEMPEG 0.006 mg/kg + pembrolizumab was well tolerated in the 1L NSCLC setting
- Compelling ORR (18%) by BICR for patients with PD-L1 negative (<1%) disease compared to historical data for pembrolizumab monotherapy<sup>1</sup>
  - Two patients with 100% reduction in target lesions
  - One patient with an unconfirmed PR and two patients with SD remain on treatment
- Notable CR rate (13%) by BICR for patients with PD-L1 high (≥50%) disease compared to historical data for pembrolizumab ±CT<sup>2-4</sup>
  - Two patients with PRs remain on treatment
- 75% median reduction in baseline target lesions was observed in patients with a RECIST 1.1 response and a deepening reduction in target lesions over time
- Median duration of response has not been reached for the patients with an objective response
- Assessment of BEMPEG 0.006 mg/kg + pembrolizumab + CT is ongoing in patients with 1L NSCLC and PD-L1 status <50%</li>

**1.** Hui R, et al. Ann Oncol 2017;28:874–81; **2.** Gadgeel S, et al. J Clin Oncol 2020;38:1505–1517; **3.** Mok TSK, et al. Lancet 2019;393:1819–1830; **4.** Gandhi L, et al. New Engl J Med 2018;378:2078–2092.

### **OS by Depth of Response – PD-1 Inhibitors in NSCLC**

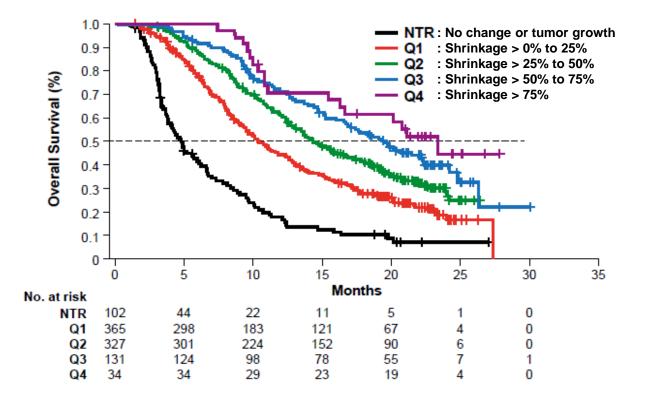


Depth of response has been shown to correlate with a longer OS with PD-1 inhibitors in NSCLC

EKTAR McCoach CE, et al. Ann Oncol 2017; 28: 2707–14

### **OS by Depth of Response – Chemotherapy in NSCLC**

#### <u>Chemotherapy depth of response in 1L NSCLC (n=1052)</u>



Depth of response has been shown to correlate with a longer OS with chemotherapy in NSCLC

### Agenda

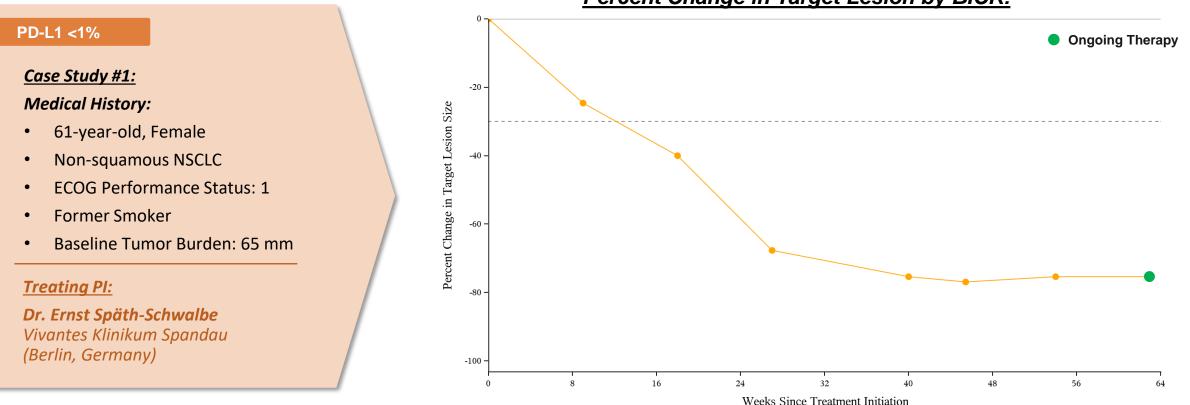
#### Bempegaldesleukin (BEMPEG; NKTR-214): an IL-2 pathway agonist

- IL-2: The Central Immuno-Stimulatory Cytokine
  - Jonathan Zalevsky, Ph.D., Nektar Therapeutics
- ESMO-IO 2021: "Preliminary results from PROPEL: A phase 1/2 study of bempegaldesleukin (BEMPEG: NKTR-214) plus pembrolizumab (PEMBRO) with or without chemotherapy in patients with metastatic NSCLC"
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- Depth of Response and Correlation to PFS and OS in NSCLC with Patient Case Studies from PROPEL
  - Daniel Johnson, M.D., Ochsner Medical Center
- Remarks and Q&A Session
  - Mehmet Altan, M.D., MD Anderson Cancer Center, Daniel Johnson, M.D., Ochsner Medical Center

### **Patient Case Studies from PROPEL**

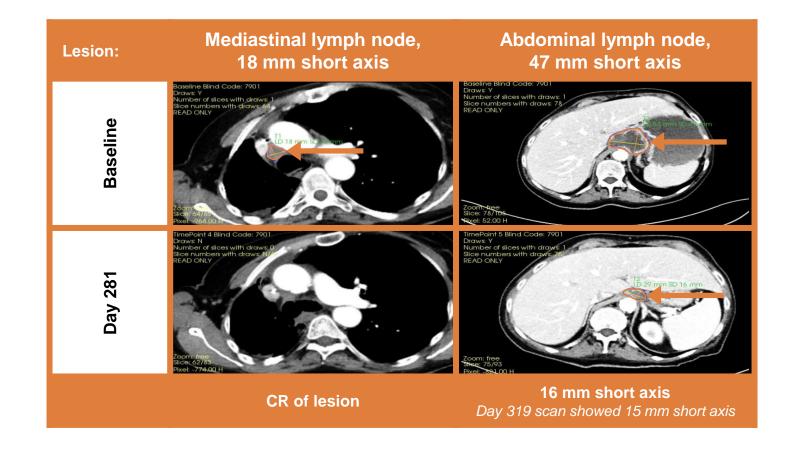
- Case Study #1:
  - 61-year-old former smoker with non-squamous NSCLC achieved a confirmed PR (-77%)
- Case Study #2:
  - 55-year-old former smoker with widespread non-squamous NSCLC achieved a confirmed PR (-76%)
- Case Study #3:
  - 62-year-old current smoker with non-squamous NSCLC achieved a confirmed CR
- Case Study #4:
  - 64-year-old current smoker with squamous NSCLC achieved a confirmed PR (-48%)
- Case Study #5:
  - 59-year-old non-smoker with widespread non-squamous NSCLC achieved a confirmed PR (-73%)
- Case Study #6:
  - 76-year-old former smoker with HNSCC achieved a confirmed CR

# Case Study #1 – 1L Stage IV NSCLC patient achieved a confirmed PR (-77%) by RECIST 1.1 (BICR)



#### Percent Change in Target Lesion by BICR:

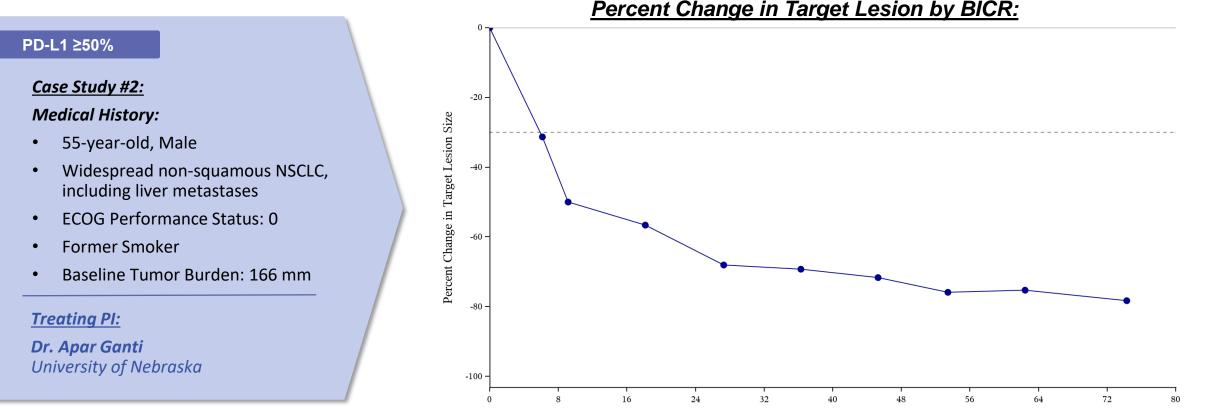
# Case Study #1 – 1L Stage IV NSCLC patient achieved a confirmed PR (-77%) by RECIST 1.1 (BICR)



New abdominal lesion noted on Day 319 by central assessment. Patient continued study treatment and target lesions remain stable (Day 442+)

NEKTAR CR, complete response; NSCLC, non-small cell lung cancer; PD-L1, programmed death ligand-1; PR, partial response; Baseline tumor burden is defined as the sum of the longest diameters of RECIST 1.1 target lesions prior to initiating treatment

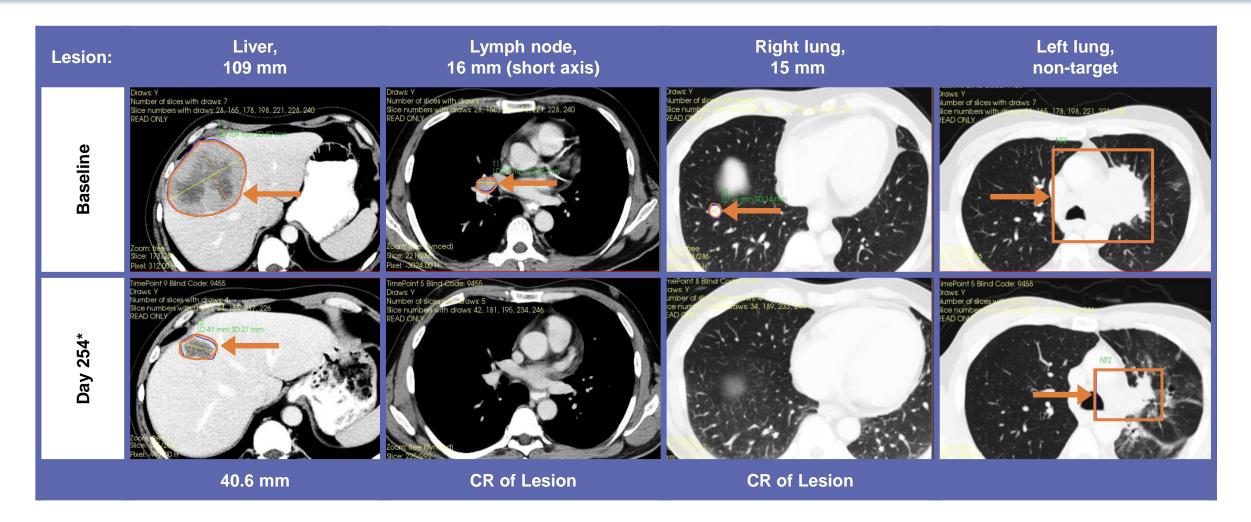
## Case Study #2 – 1L Stage IV NSCLC patient achieved a confirmed PR (-76%) by RECIST 1.1 (BICR)



Weeks Since Treatment Initiation

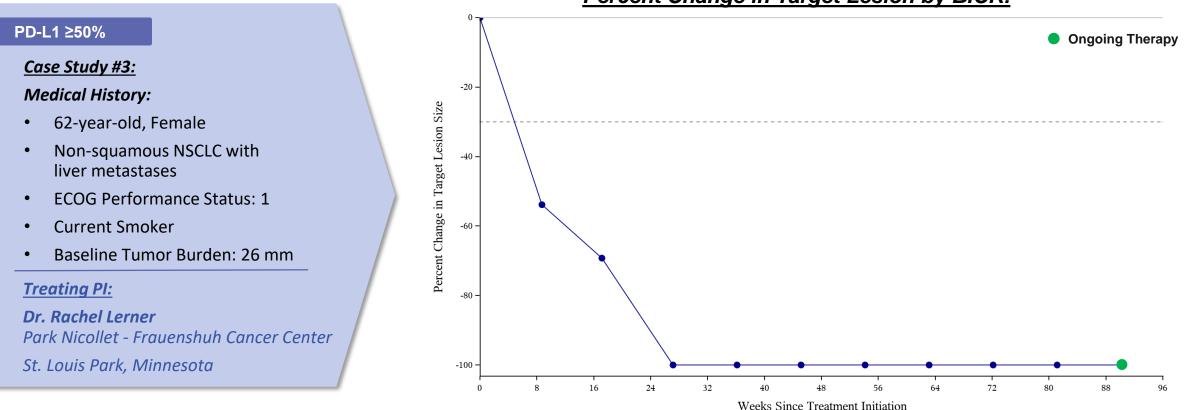
TAR CR, complete response; NSCLC, non-small cell lung cancer; PD-L1, programmed death ligand-1; PR, partial response; Baseline tumor burden is defined as the sum of the longest diameters of RECIST 1.1 target lesions prior to initiating treatment; Patient had 16 cycles of BEMPEG + pembrolizumab and, at cycle 17, continued on pembrolizumab alone due to a BEMPEG related AE (G2 Arthralgia)

# Case Study #2 – 1L Stage IV NSCLC patient achieved a confirmed PR (-76%) by RECIST 1.1 (BICR)



\*Scan of right lung lesion is from Day 374; Scan of liver lesion is from Day 437; All other scans are Day 254; Final BICR report showed a 78% reduction as of Day 520 CR, complete response; NSCLC, non-small cell lung cancer; PD-L1, programmed death ligand-1; PR, partial response; Patient had an additional 26 mm baseline right adrenal target lesion (not shown here) noted to have a CR.

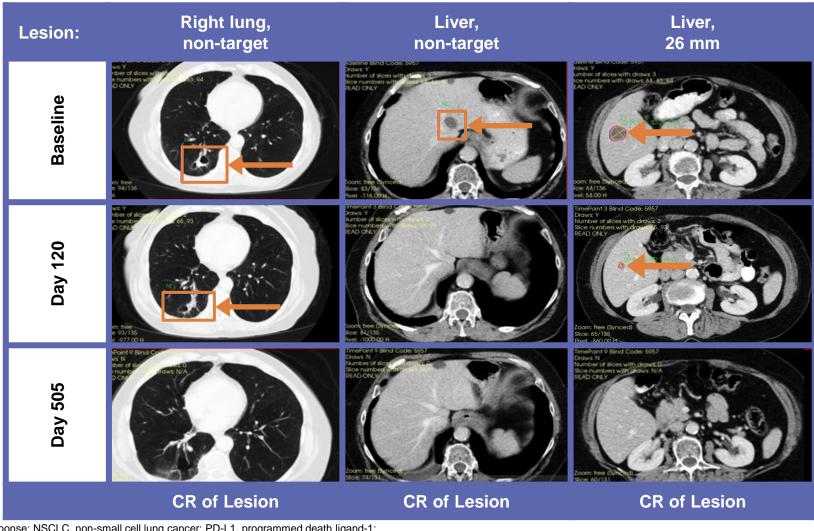
### Case Study #3 – 1L Stage IV NSCLC patient achieved a confirmed CR by RECIST 1.1 (BICR)



#### Percent Change in Target Lesion by BICR:

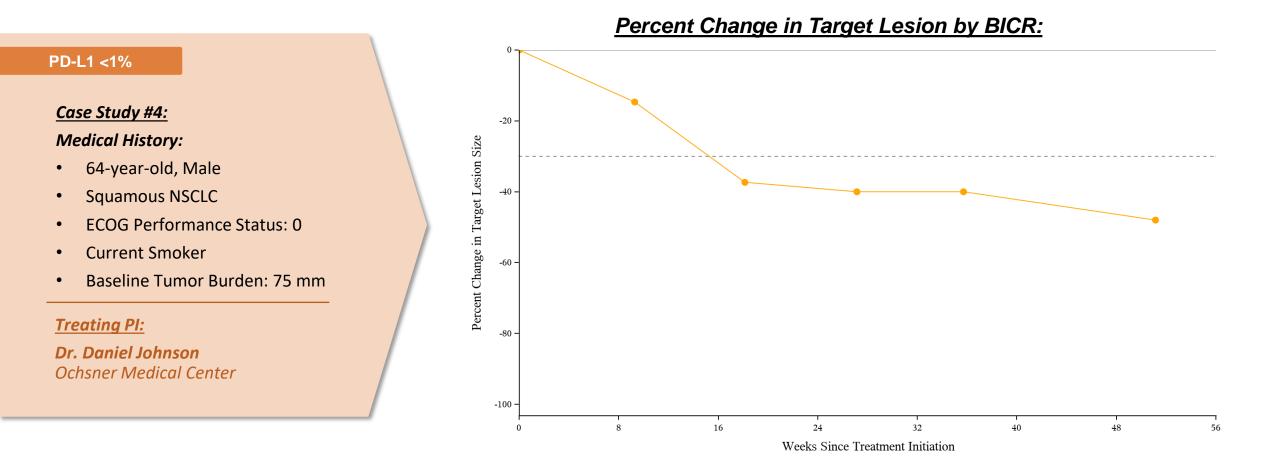
EKTAR CR, complete response; NSCLC, non-small cell lung cancer; PD-L1, programmed death ligand-1; Baseline tumor burden is defined as the sum of the longest diameters of RECIST 1.1 target lesions prior to initiating treatment; Patient had 10 cycles of BEMPEG + pembrolizumab and, at cycle 11, continued on pembrolizumab alone due to a BEMPEG related AE (Flu-like Symptoms)

## Case Study #3 – 1L Stage IV NSCLC patient achieved a confirmed CR by RECIST 1.1 (BICR)



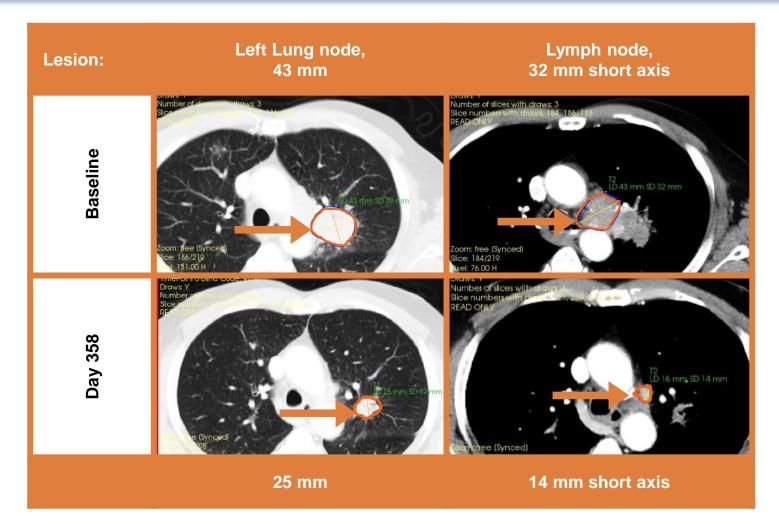
**NEKTAR** CR, complete response; NSCLC, non-small cell lung cancer; PD-L1, programmed death ligand-1; Baseline tumor burden is defined as the sum of the longest diameters of RECIST 1.1 target lesions prior to initiating treatment

# Case Study #4 – 1L Stage IV NSCLC patient achieved a confirmed PR (-48%) by RECIST 1.1 (BICR)

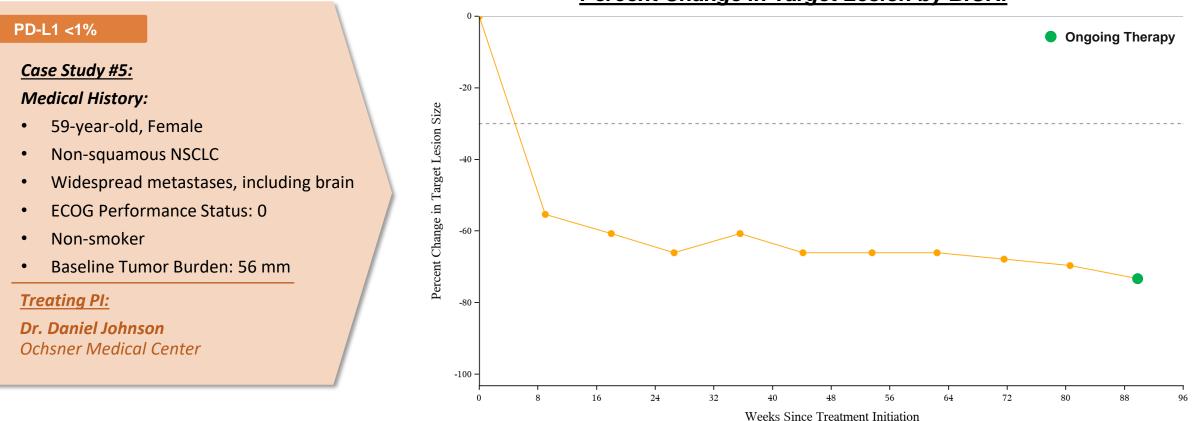


NSCLC, non-small cell lung cancer; PD-L1, programmed death ligand-1; PR, partial response; Baseline tumor burden is defined as the sum of the longest diameters of RECIST 1.1 target lesions prior to initiating treatment; Patient had 12 cycles of BEMPEG + pembrolizumab and, at cycle 13, discontinued both BEMPEG and pembrolizumab due to an AE of G3 ALT elevation; Patient was subsequently treated with single-agent pembrolizumab post-study and developed a new liver lesion in follow-up

## Case Study #4 – 1L Stage IV NSCLC patient achieved a confirmed PR (-48%) by RECIST 1.1 (BICR)

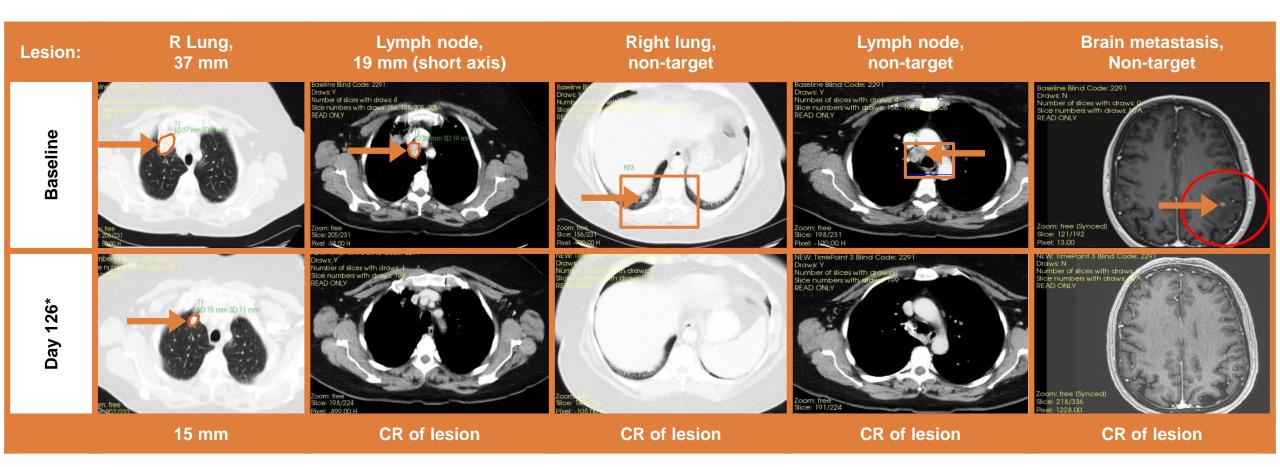


# Case Study #5 – 1L Stage IV NSCLC patient achieved a confirmed PR (-73%) by RECIST 1.1 (BICR)



Percent Change in Target Lesion by BICR:

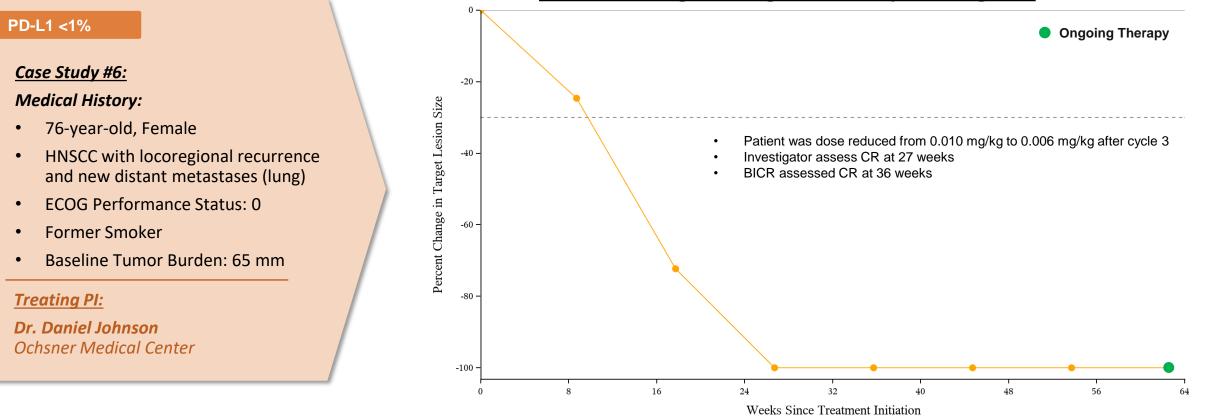
# Case Study #5 – 1L Stage IV NSCLC patient achieved a confirmed PR (-73%) by RECIST 1.1 (BICR)



\*Scan of right lung lesion is from Day 627; All other scans are Day 126

NEKTAR CR, complete response; NSCLC, non-small cell lung cancer; PD-L1, programmed death ligand-1; Baseline tumor burden is defined as the sum of the longest diameters of RECIST 1.1 target lesions prior to initiating treatment

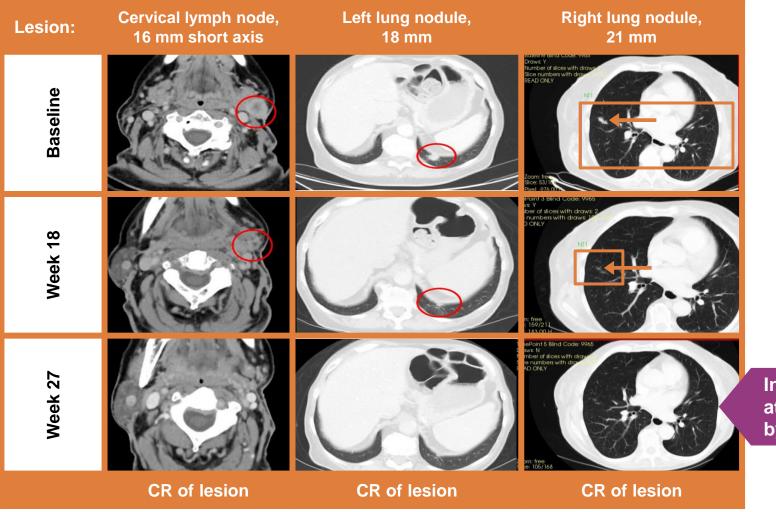
### Case Study #6 – 1L Stage IV HNSCC patient achieved a confirmed CR by RECIST 1.1



#### Percent Change in Target Lesion by Investigator:

NEKTAR CR, complete response; PD-L1, programmed death ligand-1; Baseline tumor burden is defined as the sum of the longest diameters of RECIST 1.1 target lesions prior to initiating treatment; Patient had 7 cycles of BEMPEG + pembrolizumab and, at cycle 8, continued on pembrolizumab alone due to a BEMPEG related AE (G3 Fatigue)

### Case Study #6– 1L Stage IV HNSCC patient achieved a confirmed CR by RECIST 1.1

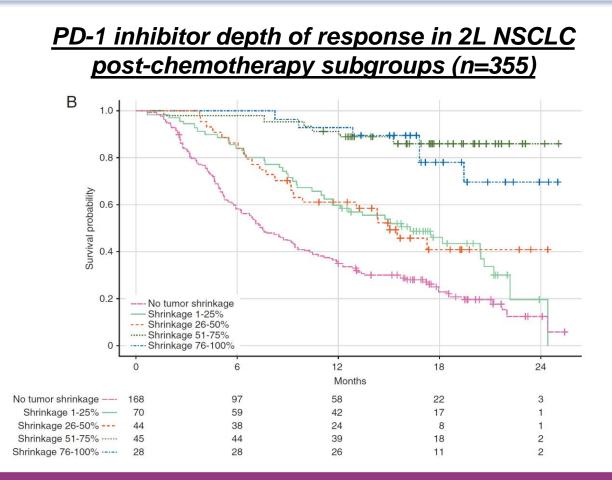


Investigator assessed CR at Week 27; CR confirmed by BICR at Week 36

\*An additional 10 mm baseline parotidectomy bed lesion (not shown here) also noted to have a CR. **NEKTAR** 

CR, complete response; NSCLC, non-small cell lung cancer; PD-L1, programmed death ligand-1; Baseline tumor burden is defined as the sum of the longest diameters of RECIST 1.1 target lesions prior to initiating treatment 58

### **OS by Depth of Response – PD-1 Inhibitors in NSCLC**



Depth of response has been shown to correlate with a longer OS with PD-1 inhibitors in NSCLC

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- Remarks and Q&A Session
  - Mehmet Altan, M.D., MD Anderson Cancer Center, Daniel Johnson, M.D., Ochsner Medical Center

### **Q&A** session



Jonathan Zalevsky, PhD

Chief Research & Development Officer at Nektar Therapeutics



Dimitry Nuyten, MD, PhD

Chief Medical Officer at Nektar Therapeutics



Daniel Johnson, MD

Medical Oncologist, Gayle and Tom Benson Cancer Center; Deputy Director, Precision Cancer Therapies (Phase I) Research Program Ochsner Medical Center



Mehmet Altan, MD

Assistant Professor in the Department of Thoracic-Head and Neck Medical Oncology, Division of Cancer Medicine at The University of Texas MD Anderson Cancer Center



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Poster presented at the ESMO Immuno-Oncology Congress 2021 Dec 8–11, 2021. Corresponding author Enriqueta Felip: efelip@vhebron.net



#### **NEKTAR**