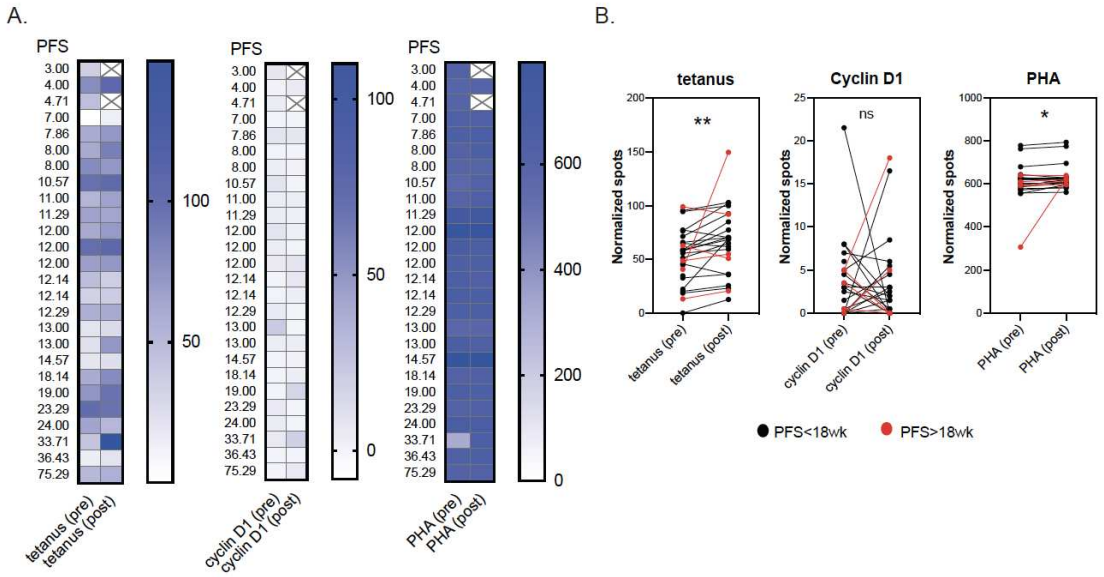
SUPPLEMENTARY INFORMATION

Supplementary Table 1: All adverse events (regardless of relevance to treatment)

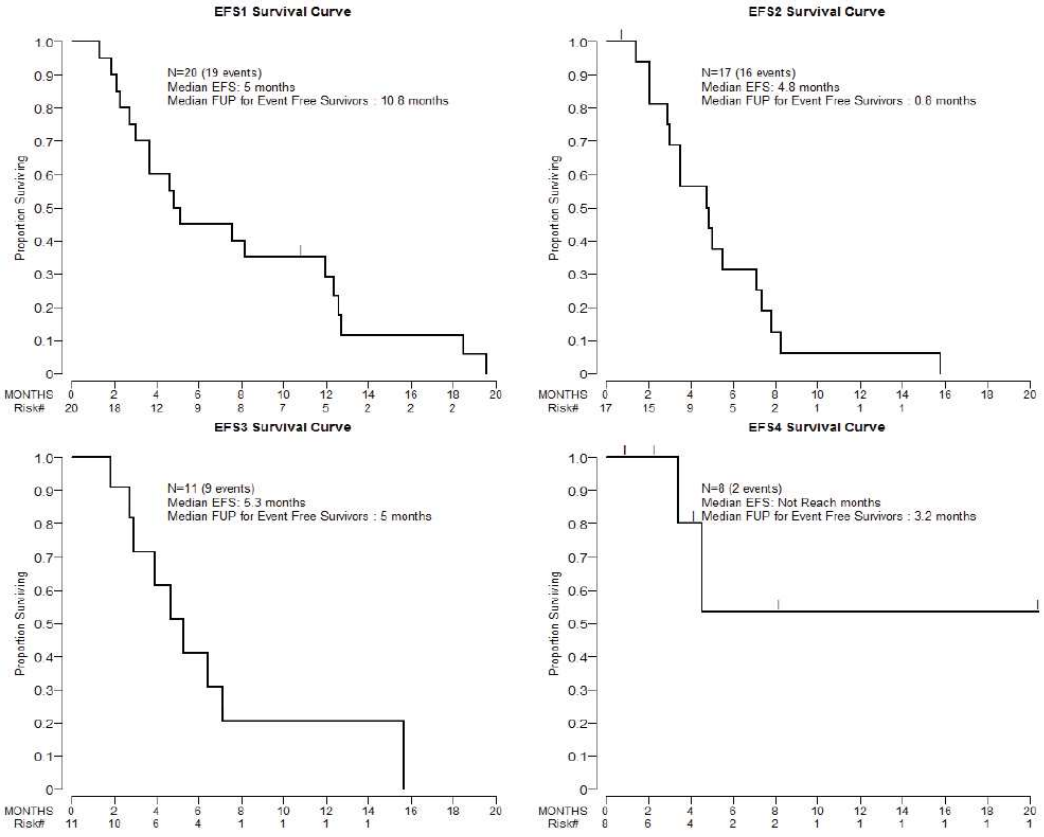
Toxicity	Grade=1 N(%)	Grade=2 N(%)	Grade=3 N(%)	Grade=4 N(%)	All N(%)
Cardiovascular					
Edema limbs	1(4)	0(0)	0(0)	0(0)	1(4)
Hypertension	0(0)	0(0)	1(4)	0(0)	1(4)
Lymphedema	1(4)	0(0)	0(0)	0(0)	1(4)
Dermatologic					
Breast pain	2(7)	0(0)	0(0)	0(0)	2(7)
Dry skin	1(4)	0(0)	0(0)	0(0)	1(4)
Injection site reaction	11(41)	0(0)	0(0)	0(0)	11(41)
Pruritus	2(7)	1(4)	0(0)	0(0)	3(11)
Rash	7(26)	1(4)	0(0)	0(0)	8(30)
Endocrine					
Hyperglycemia	18(67)	5(19)	4(15)	0(0)	27(100)
Hyperthyroidism	2(7)	0(0)	0(0)	0(0)	2(7)
Hypoglycemia	2(7)	0(0)	0(0)	0(0)	2(7)
Hypothyroidism	1(4)	1(4)	0(0)	0(0)	2(7)
Gastrointestinal					
Abdominal pain	4(15)	3(11)	0(0)	0(0)	7(26)
Alkaline phosphatase increased	7(26)	2(7)	1(4)	0(0)	10(37)
Anorexia	2(7)	0(0)	0(0)	0(0)	2(7)
Ascites	0(0)	1(4)	0(0)	0(0)	1(4)
AST/ALT increased	11(41)	2(7)	0(0)	0(0)	13(48)
Bloating	2(7)	1(4)	0(0)	0(0)	3(11)
Blood bilirubin increased	1(4)	2(7)	1(4)	0(0)	4(15)
Constipation	6(22)	3(11)	0(0)	0(0)	9(33)
Diarrhea	1(4)	2(7)	0(0)	0(0)	3(11)
Dry mouth	1(4)	0(0)	0(0)	0(0)	1(4)
Dysgeusia	1(4)	0(0)	0(0)	0(0)	1(4)
Esophageal pain	1(4)	0(0)	0(0)	0(0)	1(4)
Gastroesophageal reflux disease	4(15)	1(4)	0(0)	0(0)	5(19)
Gastrointestinal fistula	0(0)	1(4)	0(0)	0(0)	1(4)
Hemorrhoids	0(0)	1(4)	0(0)	0(0)	1(4)
Lipase increased	4(15)	1(4)	0(0)	1(4)	6(22)
Nausea	11(41)	0(0)	0(0)	0(0)	11(41)
Serum amylase increased	4(15)	1(4)	3(11)	0(0)	8(30)
Vomiting	4(15)	0(0)	0(0)	0(0)	4(15)
General					
Allergic reaction	1(4)	1(4)	0(0)	0(0)	2(7)
Fatigue	6(22)	2(7)	1(4)	0(0)	9(33)
Fever	1(4)	0(0)	0(0)	0(0)	1(4)
Malaise	1(4)	0(0)	0(0)	0(0)	1(4)
Pain	1(4)	1(4)	0(0)	0(0)	2(7)
Genitourinary					
Urinary frequency	1(4)	0(0)	0(0)	0(0)	1(4)
Hematologic					
Anemia	4(15)	7(26)	7(26)	0(0)	18(67)
Coagulation test abnormalities	9(33)	1(4)	1(4)	0(0)	11(41)
Lymphocyte count decreased	0(0)	0(0)	8(30)	1(4)	9(33)
Neutrophil count decreased	0(0)	3(11)	1(4)	1(4)	5(19)
Platelet count decreased	11(41)	2(7)	1(4)	1(4)	15(56)
White blood cell decreased	3(11)	6(22)	1(4)	1(4)	11(41)
Infections and infestations					

Bladder infection	0(0)	6(22)	0(0)	0(0)	6(22)
Periorbital infection	0(0)	1(4)	0(0)	0(0)	1(4)
Upper respiratory infection	0(0)	2(7)	0(0)	0(0)	2(7)
Metabolic					
Electrolyte abnormalities	14(52)	5(19)	2(7)	1(4)	22(81)
Hypertriglyceridemia	2(7)	0(0)	0(0)	0(0)	2(7)
Hyperuricemia	0(0)	0(0)	0(0)	1(4)	1(4)
Hypoalbuminemia	19(70)	5(19)	1(4)	0(0)	25(93)
Musculoskeletal					
Arthralgia	2(7)	1(4)	0(0)	0(0)	3(11)
Bone pain	1(4)	0(0)	0(0)	0(0)	1(4)
Myalgia	3(11)	0(0)	0(0)	0(0)	3(11)
Neurologic/Psychiatric					
Anxiety	1(4)	0(0)	0(0)	0(0)	1(4)
Depression	1(4)	0(0)	0(0)	0(0)	1(4)
Dizziness	2(7)	0(0)	0(0)	0(0)	2(7)
Insomnia	2(7)	0(0)	0(0)	0(0)	2(7)
Peripheral sensory neuropathy	1(4)	0(0)	0(0)	0(0)	1(4)
Ophthalmologic					
Conjunctivitis	1(4)	0(0)	0(0)	0(0)	1(4)
Eye infection	0(0)	1(4)	0(0)	0(0)	1(4)
Renal					
Creatinine increased	1(4)	2(7)	0(0)	0(0)	3(11)
Respiratory					
Cough	5(19)	0(0)	0(0)	0(0)	5(19)
Dyspnea	8(30)	1(4)	0(0)	0(0)	9(33)
Pleural effusion	0(0)	1(4)	0(0)	0(0)	1(4)
Pleuritic pain	1(4)	0(0)	0(0)	0(0)	1(4)

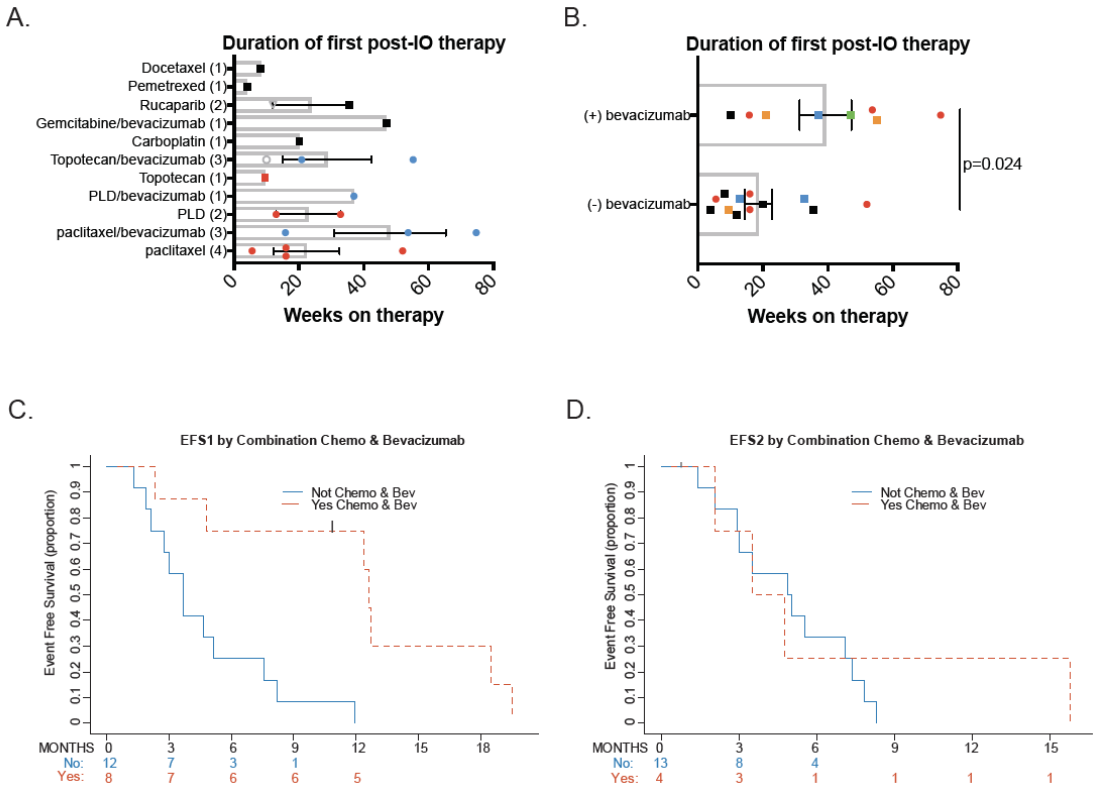


Supplementary Figure 1. T cell responses to control peptide and phytohemagglutinin (PHA) stimulation. A. Summary heatmaps of ELISPOT responses to tetanus peptide, cyclin D1 peptide, and PHA, ordered by PFS. B. ELISPOT responses to individual peptides or PHA; comparisons of pre- and on-treatment responses to individual peptides were performed using Wilcoxon matched-pairs signed rank test.

	Pt#	Event#	Median EFS(1sided 90%CI)	6M EFS rate(1sided 90%CI)
EFS1	20	19	5(3.7-Inf)	45%(30.5-100%)
EFS2	17	16	4.8(3.5-Inf)	31.2%(17.4-100%)
EFS3	11	9	5.3(2.9-Inf)	40.9%(21.4-100%)
EFS4	8	2	Not Reached	53.3%(19.7-100%)



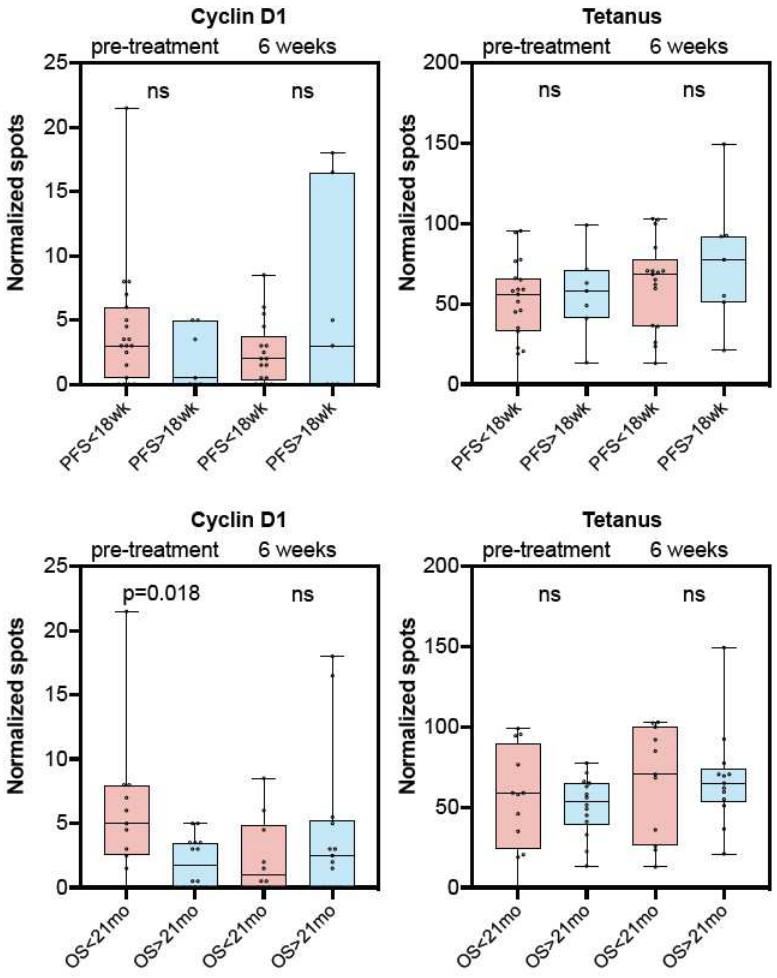
Supplementary Figure 2. Event-free-survival with each post-immunotherapy treatment course. EFS for the four post-immunotherapy treatments is indicated among the patients who initiated each line of therapy (EFS1 is line 1, EFS2 is line 2, etc).



Supplementary Figure 3. Duration of first post-immunotherapy treatment by treatment type. A. EFS1 by specific treatment types. B. EFS1 in patients that received bevacizumab-containing regimens or single-agent chemotherapies. C-D. EFS1 and EFS2 in patients that received chemotherapy with or without bevacizumab. PLD: pegylated liposomal doxorubicin.

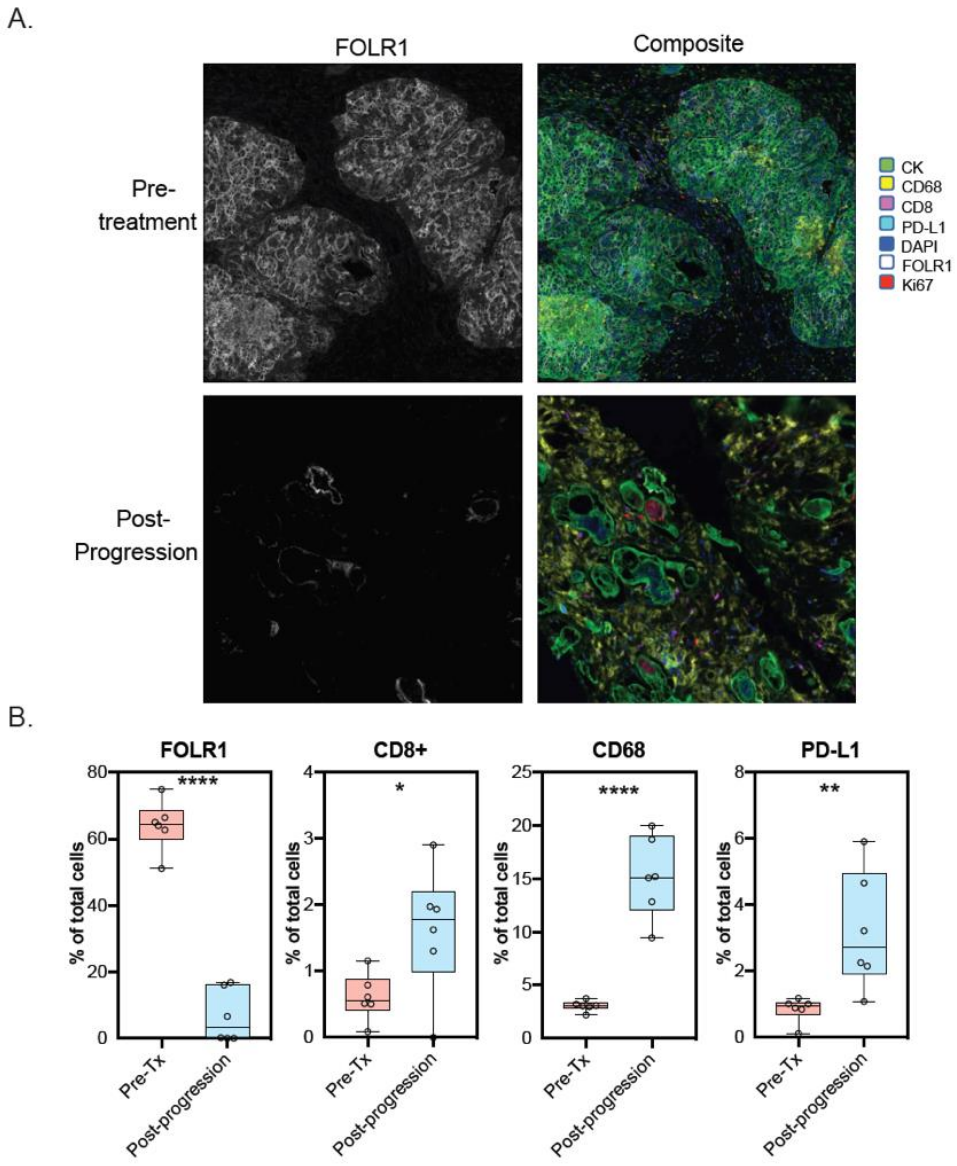
Zamarin D, *et al. J Immunother Cancer* 2020; 8:e000829. doi: 10.1136/jitc-2020-000829

Supplementary Figure 4.



Supplementary Figure 4. Association of immune response to control peptides with clinical benefit at 18 weeks and overall survival. Comparisons of responses to individual peptides between groups were performed using Wilcoxon two-sample t-test.

Supplementary Figure 5



Supplementary Figure 5. **Loss of FOLR1 expression in a progressing lesion in a patient with prolonged clinical benefit from therapy.** A. Representative images of FRα (FOLR1) expression as well as the indicated cell populations in the tumor microenvironment at baseline (top) and on progression (bottom). B. Quantification of percentage of tumor cells positive for FRα (FOLR1) expression pre-therapy and post-progression. C. Quantification of the relative percentages of CD8+ cells, CD68+ cells, and PD-L1 expression in the pre-treatment and progressing tumors. ****p<0.0001, **p<0.01, *p<0.05 by Wilcoxon two-sample t-test.