Table S1. Patient Demographics and Clinical Characteristics (n = 15)

Characteristic	Arm A (n = 9)	Arm B (n= 6)	All (n = 15)
Median age, years (range)*	70 (44-75)	65 (42-84)	70 (42-84)
Sex			
Male	5	3	8
Female	4	3	7
Caucasian Ethnicity	9	6	15
Disease Stage			
N/A	1	0	1
Stage IIC	0	1	1
Stage IV	8	5	13
ECOG performance status			
0	3	2	5
1	5	4	9
2	1	0	1
Primary melanoma site			
Skin	4	5	9
Eye	4	1	5
Mucosa	1	0	1
Extent of disease			
LN metastases (any site)	4	4	8
Lung metastases	5	4	9
Liver metastases	5	2	7
Non-lung/liver mets	6	4	10
BMI, median (range)*	28.4 (24.8-32.4)	28.9 (24.2-47.9)	28.4 (24.2-47.9)
BSA, g/dl median (range)*	1.92 (1.67-2.21)	1.98 (1.84-2.53)	1.92 (1.67-2.53)
LDH level, IU/L median (range)*	303.5 (140-1867)	199.5 (151-214)	213.0 (140-1867)
Prior immunomodulatory therapy			
IL-2	1	2	3
IFNα	3	1	4
Anti-CTLA4 monotherapy	7	2	9
Anti-PD1 monotherapy	8	4	12
Anti-CTLA4/PD1 combined	1	1	2
Vaccines**	3	1	4
Number of prior therapies***			
0	0	0	0
1	0	1	1
2	3	2	5
$\geq$3	6	3	9

Abbreviations: CTLA4, cytotoxic T-lymphocyte-associated protein 4; ECOG, Eastern Cooperative Oncology Group; IFN, interferon; LN, lymph node; PD1, programed death-1.

*NS for Arm A vs. Arm B; **UPCI 09-021/NCT01622933 (vaccination with autologous DC infected with a recombinant adenovirus encoding the MAGE-6, MART1 and tyrosinase antigens); ***Includes chemotherapy, immunotherapy, radiotherapy and surgery.

Table S2. Best Response to Treatment in Evaluable Patients (n = 13)

Response	Arm A (n = 7)	Arm B (n = 6)	All (n = 13)
$CD8^+$ T cell Response (Vaccine)*	2	4	6
OCR (best RECIST1.1)			
Complete response	0	0	0
Partial response	0	4	4
Stable disease	3	0	3
Progressive disease	4	2	6
OCR Response Rate	0.0000	0.6667	0.3077
OS median months (range)**	8.3 (3.0-19.6)	19.1 (9.1-28.4)	15.2 (3.0-28.4)
PFS median months (range)***	2.2 (1.9-9.7)	7.9 (2.1-25.3)	4.2 (1.9-25.3)

* Positive response to $\geq$ 3 vaccine peptides in IFN-γ ELISPOT assays.

** p = 0.0086 for Arm B vs. Arm A.

*** p = 0.063 for Arm B vs. Arm A.

Abbreviations: OCR, objective clinical response; OS, overall survival; PFS, progression-free survival.

Storkus et al.

Table S3. Summary of Adverse Events (AEs)

	Number of Patients with Indicated AE Grade Events:		
AE Grade	Arm A (n = 9)	Arm B (n = 6)	Total (n = 15)
2	4 [44%]	3 [50%]	3 [47%]
3	1 [11%]	2 [33%]	3 [20%]
N/A	1* [11%]	0 [0%]	1* [11%]

*Lymphoma diagnosis unrelated to treatment in patient #11.

Table S4. Patient AEs by Category (n = 15).

	Arm A				Arm B			
Toxicity	**Grade 1-2**	**%**	**Grade 3**	**%**	**Grade 1-2**	**%**	**Grade 3**	**%**
Abdominal pain	0	0	1	11.11	1	16.67	0	0
Acute kidney injury	1	11.11	0	0	0	0	0	0
Alkaline phosphatase increased	2	22.22	0	0	1	16.67	0	0
Anemia	5	55.56	1	11.11	3	50	2	33.33
Anorexia	2	22.22	0	0	2	33.33	0	0
Arthralgia	0	0	0	0	0	0	1	16.67
Aspartate aminotransferase increased	2	22.22	0	0	2	33.33	0	0
Bruising	0	0	0	0	1	16.67	0	0
Cardiac disorders - Other, specify	0	0	0	0	0	0	1	16.67
Chills	1	11.11	0	0	1	16.67	0	0
Cough	1	11.11	0	0	0	0	0	0
Creatinine increased	0	0	0	0	1	16.67	0	0
Diarrhea	1	11.11	0	0	2	33.33	0	0
Dry skin	0	0	0	0	2	33.33	0	0
Dyspepsia	0	0	0	0	1	16.67	0	0
Erythema multiforme	0	0	0	0	1	16.67	0	0
Fatigue	5	55.56	1	11.11	5	83.33	0	0
Fever	0	0	0	0	2	33.33	0	0
Gastrointestinal disorders - Other, specify	0	0	0	0	1	16.67	0	0
General disorders and administration site conditions - Other, specify	0	0	0	0	1	16.67	0	0
Generalized muscle weakness	1	11.11	0	0	0	0	0	0
Headache	0	0	0	0	2	33.33	0	0
Hypermagnesemia	0	0	0	0	1	16.67	0	0
Hypoalbuminemia	2	22.22	0	0	1	16.67	0	0
Hypocalcemia	2	22.22	0	0	1	16.67	0	0
Hypokalemia	1	11.11	0	0	2	33.33	0	0

Hypomagnesemia	1	11.11	0	0	0	0	0	0
Hyponatremia	4	44.44	0	0	5	83.33	0	0
Hypoparathyroidism	0	0	0	0	1	16.67	0	0
Hypophosphatemia	2	22.22	0	0	3	50	1	16.67
Hypotension	0	0	0	0	1	16.67	0	0
Hypothyroidism	0	0	0	0	1	16.67	0	0
Insomnia	0	0	0	0	1	16.67	0	0
Investigations - Other, specify	1	11.11	0	0	1	16.67	0	0
Leukocytosis	0	0	0	0	1	16.67	0	0
Lymphedema	1	11.11	0	0	0	0	0	0
Lymphocyte count decreased	2	22.22	2	22.22	0	0	0	0
Lymphocyte count increased	0	0	0	0	3	50	0	0
Metabolism and nutrition disorders - Other, specify	1	11.11	0	0	1	16.67	0	0
Myalgia	0	0	0	0	0	0	1	16.67
Nausea	1	11.11	0	0	5	83.33	0	0
Neutrophil count decreased	2	22.22	0	0	4	66.67	0	0
Pain	0	0	0	0	1	16.67	0	0
Pain in extremity	0	0	0	0	1	16.67	0	0
Phlebitis infective	0	0	0	0	1	16.67	0	0
Platelet count decreased	2	22.22	0	0	3	50	0	0
Productive cough	0	0	0	0	1	16.67	0	0
Pruritus	0	0	0	0	1	16.67	0	0
Rash maculo-papular	0	0	1	11.11	3	50	0	0
Skin and subcutaneous tissue disorders - Other, specify	1	11.11	0	0	2	33.33	0	0
Uterine hemorrhage	0	0	0	0	1	16.67	0	0
Vomiting	0	0	0	0	4	66.67	0	0
Weight loss	1	11.11	0	0	1	16.67	0	0
White blood cell decreased	1	11.11	0	0	2	33.33	0	0