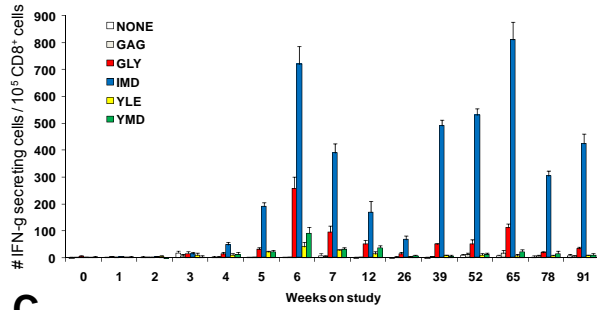
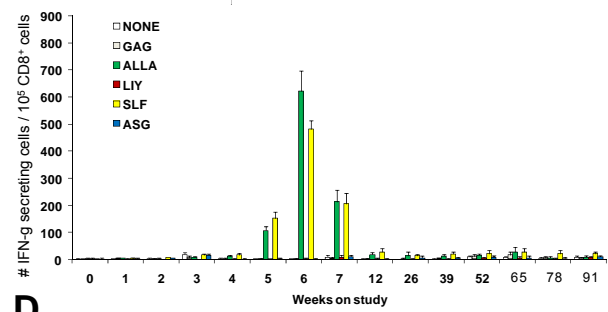
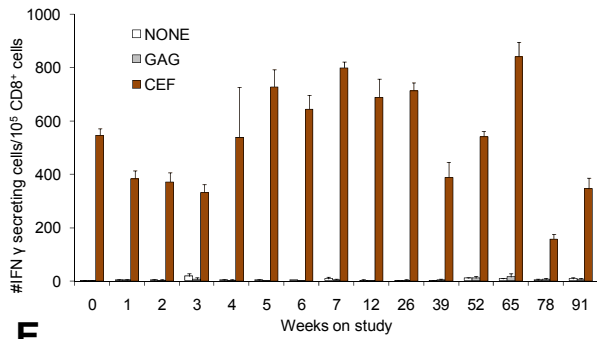
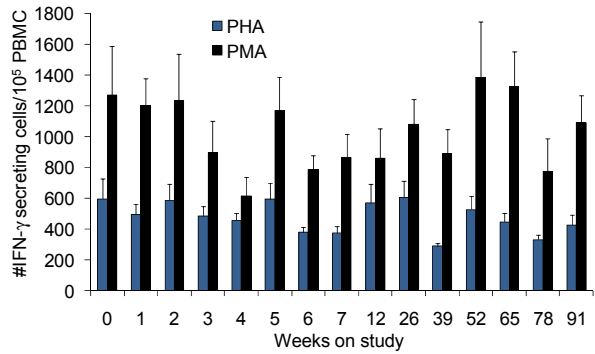
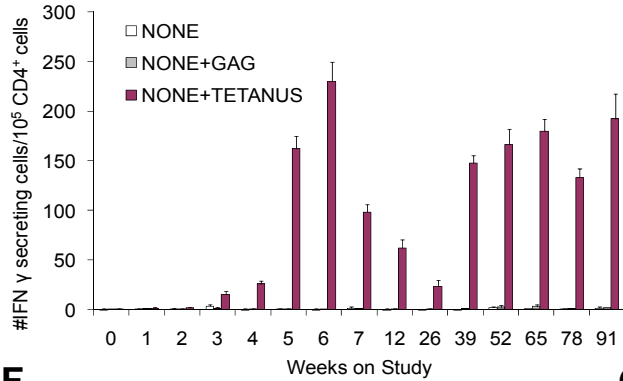
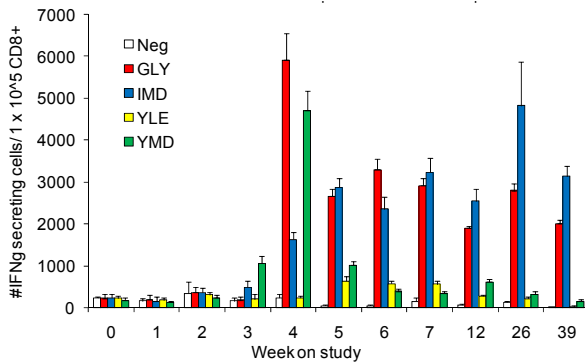
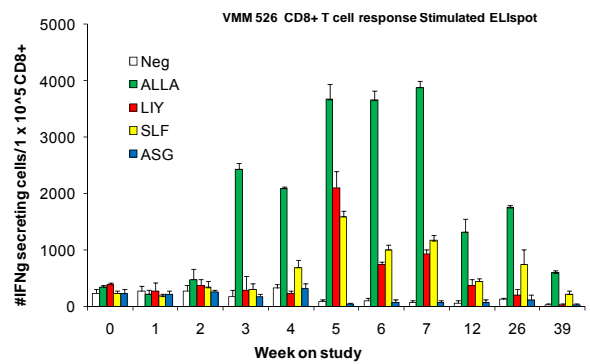


A**B****C****D****E****F****G**

Supplemental Table 1. Demographics and Clinical Factors

	Study Arm				No GM	GM-CSF	1 site	2 sites	All
	A	B	C	D	A+C	B+D	A+B	C +D	
N	30	30	31	30	61	60	60	61	121
Gender – male (%)	22 (73%)	18 (60%)	24 (77%)	20 (67%)	46 (75%)	38 (63%)	40 (67%)	44 (72%)	84 (69%)
Race - Black/AfrAm*	0	0	0	1 (3%)	0	1 (2%)	0	1 (2%)	1 (1%)
Hospital –									
Fox Chase Ca Ctr	3	5	3	5	6	10	8	8	16
MD Anderson CC	7	3	4	3	11	6	10	7	17
Univ of Virginia	19	19	23	20	42	39	38	43	81
Univ. Pittsburgh	1	0	0	0	1	0	1	0	1
Washington Ca Inst	0	3	1	2	1	5	3	3	6
Disease Status									
Initial diagnosis	20	17	19	14	39	31	37	33	70
Recurrence	10	13	12	16	22	29	23	28	51
Stage at enrollment –									
IIB	1	5	4	2	5	7	6	6	12
IIC	2	0	0	3	2	3	2	3	5
IIIA	5	6	4	4	9	10	11	8	19
IIIB	10	10	10	9	20	19	20	19	39
IIIC	7	5	7	8	14	13	12	15	27
IV	5	4	6	4	11	8	9	10	19
ECOG PS 0 **	26 (87%)	26 (87%)	29 (94%)	26 (87%)	55 (90%)	52 (87%)	52 (87%)	55 (90%)	107 (88%)
Median Age	52	55.5	53	56	53	56	54	56	55
HLA expression									
HLA-A1	11	13	14	10	25	23	24	24	48
HLA-A2	16	14	15	16	31	30	30	31	61
HLA-A3	14	9	8	7	22	16	23	15	38

*All patients were non-Hispanic, all were white/Caucasian except for the one Black/African-American in Group D

**All patients were ECOG PS 0-1

Supplemental Table 2. Treatment-related adverse events, by study arm and overall: 31 patients per arm, 124 overall.

Tox Group	Toxicity	% with toxicity, any grade					Number (of 124) with toxicity by maximum grade		
		Overall	Arm A	Arm B	Arm C	Arm D	Grade 1	Grade 2	Grade 3
ANY TOXICITY	Maximum grade toxicity by patient	100	100	100	100	100	3	82	39
ALLERGY/IMMUNOLOGY		16	13	10	26	16	20	.	.
	Autoimmune reaction	10	10	6	16	6	12	.	.
	Rhinitis	6	3	3	10	10	8	.	.
BLOOD/BONE MARROW		20	23	16	23	19	25	.	.
	Hemoglobin	11	13	6	16	10	14	.	.
	Leukocytes	3	6	.	.	6	4	.	.
	Lymphopenia	4	.	3	3	10	5	.	.
	Neutrophils	2	3	6	.	.	3	.	.
	Platelets	3	6	3	3	.	4	.	.
CARDIAC ARRHYTHMIA		1	.	.	.	3	1	.	.
	Palpitations	1	.	.	.	3	1	.	.
CONSTITUTIONAL SYMPTOMS		85	84	87	90	81	73	28	5
	Constitutional Symptoms - Other (Specify)	1	.	.	3	.	1	.	.
	Fatigue	77	68	81	77	81	69	23	3
	Fever	39	26	45	55	29	41	5	2
	Insomnia	2	.	3	3	.	2	.	.
	Rigors/chills	52	48	42	68	52	63	2	.
	Sweating	36	29	48	42	26	39	6	.
	Weight loss	1	.	3	.	.	1	.	.
DERMATOLOGY/SKIN		100	100	100	100	100	6	84	34
	Alopecia	4	.	10	.	6	5	.	.
	Dermatology - Other (Specify)	2	3	.	.	6	3	.	.
	Dry skin	1	.	3	.	.	1	.	.
	Flushing	22	23	16	32	16	27	.	.
	Hyperpigmentation	2	.	3	.	3	2	.	.
	Hypopigmentation	10	6	13	10	10	11	1	.
	Injection Site Reaction/Induration	100	100	100	100	100	6	84	34
	Pruritus	10	10	19	.	10	11	1	.
	Rash	15	10	10	23	19	13	3	3
	Urticaria	2	3	.	3	3	3	.	.
ENDOCRINE		2	3	.	.	6	3	.	.
	Hot flashes	1	.	.	.	3	1	.	.
	Hyperthyroidism	2	3	.	.	3	2	.	.
GASTROINTESTINAL		52	55	52	42	61	60	4	1
	Anorexia	19	19	19	19	19	21	3	.
	Constipation	5	6	6	3	3	6	.	.
	Diarrhea	18	26	16	13	16	21	.	1
	Hemorrhoids	1	.	.	.	3	1	.	.
	Mucositis (clinical exam) - Oral cavity	3	3	3	.	6	4	.	.
	Mucositis (clinical exam) - Pharynx	1	.	3	.	.	1	.	.
	Mucositis (funct/sympt) - Esophagus	1	.	3	.	.	1	.	.
	Mucositis (funct/sympt) - Oral cavity	6	6	3	3	13	8	.	.
	Mucositis (funct/sympt)- Stomach	1	.	3	.	.	1	.	.
	Nausea	31	32	29	26	35	35	3	.
	Taste alteration	2	.	.	6	.	2	.	.

Tox Group	Toxicity	% with toxicity, any grade					Number (of 124) with toxicity by maximum grade		
		Overall	Arm A	Arm B	Arm C	Arm D	Grade 1	Grade 2	Grade 3
	Vomiting	7	13	10	6	.	8	1	.
INFECTION		5	.	6	13	.	2	3	1
	Infection (documented clinically) - Skin (cellulit	1	.	3	.	.	.	1	.
	Infection (documented clinically) - Upper airway N	1	.	.	3	.	1	.	.
	Infection with normal ANC - Skin (cellulitis)	1	.	.	3	.	.	1	.
	Infection with unknown ANC - Oral cavity-gums (gin	1	.	3	.	.	1	.	.
	Infection with unknown ANC - Skin (cellulites)	2	.	.	6	.	.	1	1
LYMPHATICS		9	13	6	13	3	11	.	.
	Edema: head and neck	1	3	.	.	.	1	.	.
	Edema: limb	6	6	3	10	3	7	.	.
	Edema: trunk/genital	2	.	3	6	.	3	.	.
	Lymphatics - Other (Specify)	1	3	.	.	.	1	.	.
	Lymphedema-related fibrosis	1	3	.	.	.	1	.	.
METABOLIC/ LABORATORY		54	42	48	52	74	65	2	.
	ALT	3	3	3	3	3	4	.	.
	AST	2	3	.	3	3	3	.	.
	Alkaline phosphatase	4	10	6	.	.	5	.	.
	Bilirubin	3	.	3	3	6	4	.	.
	Creatinine	5	3	10	3	3	5	1	.
	GFR	12	6	13	13	16	15	.	.
	Hypercalcemia	1	.	.	.	3	1	.	.
	Hyperglycemia	26	19	23	26	35	31	1	.
	Hyperkalemia	5	3	3	3	10	6	.	.
	Hypernatremia	1	.	.	.	3	1	.	.
	Hypoalbuminemia	1	3	.	.	.	1	.	.
	Hypocalcemia	3	3	6	.	3	4	.	.
	Hypoglycemia	5	3	3	10	3	6	.	.
	Hypokalemia	2	.	3	.	3	2	.	.
	Hypomagnesemia	1	.	.	.	3	1	.	.
	Hyponatremia	2	.	.	3	3	2	.	.
	Metabolic/Lab - Other (Specify)	1	.	.	.	3	1	.	.
MUSCULOSKELETAL/ SOFT TISSUE		1	.	.	3	.	1	.	.
	Musculoskeletal - Other (Specify)	1	.	.	3	.	1	.	.
NEUROLOGY		32	29	32	39	29	36	3	1
	Dizziness	27	26	26	35	23	34	.	.
	Mood alteration - Depression	2	.	.	3	3	2	.	.
	Neuropathy-motor	1	.	.	.	3	1	.	.
	Neuropathy-sensory	2	3	3	.	3	1	2	.
	Syncope (fainting)	1	.	3	.	.	.	.	1
	Tremor	1	.	.	3	.	.	1	.
OCULAR/VISUAL		8	6	6	13	6	9	1	.
	Blurred vision	3	.	3	3	6	4	.	.
	Diplopia	1	3	.	.	.	.	1	.
	Flashing lights	2	3	.	3	.	2	.	.
	Ocular - Other (Specify)	2	.	3	3	.	2	.	.
	Watery eye	1	.	.	3	.	1	.	.

Tox Group	Toxicity	% with toxicity, any grade					Number (of 124) with toxicity by maximum grade		
		Overall	Arm A	Arm B	Arm C	Arm D	Grade 1	Grade 2	Grade 3
PAIN		71	61	77	74	71	63	22	3
	Pain - Abdomen NOS	2	.	3	.	6	3	.	.
	Pain - Back	4	.	6	3	6	3	2	.
	Pain - Bone	1	3	.	.	.	1	.	.
	Pain - Extremity-limb	3	6	6	.	.	4	.	.
	Pain - Head/headache	47	45	52	58	32	50	6	2
	Pain - Joint	32	26	29	32	42	31	8	1
	Pain - Larynx	1	.	3	.	.	1	.	.
	Pain - Muscle	47	42	39	52	55	43	14	1
	Pain - Neck	1	.	.	.	3	1	.	.
	Pain - Other (Specify)	1	.	3	.	.	.	1	.
	Pain - Skin	1	.	.	3	.	.	.	1
	Pain - Stomach	2	3	.	.	3	2	.	.
	Pain - Throat/pharynx/larynx	5	6	6	6	.	6	.	.
PULMONARY/UPPER RESPIRATORY		16	16	16	16	16	17	3	.
	Cough	10	10	6	13	10	12	.	.
	Dyspnea	7	3	13	6	6	8	1	.
	Pneumonitis	2	3	3	.	3	1	2	.
	Pulmonary - Other (Specify)	1	3	.	.	.	1	.	.
	Voice changes	5	6	.	3	10	6	.	.
SYNDROMES		2	3	3	.	.	2	.	.
	Flu-like syndrome	2	3	3	.	.	2	.	.

Supplemental Table 3. Direct and Stimulated ELIspot data through day 50 - immune response rates and median fold-increase among immune responders

HLA allele		Peptide **		Direct ELIspot assay n = 119				Stimulated ELIspot assay n = 45					
				N	Immunogenicity overall		No GM-CSF – Arms A, C		N	Immunogenicity overall		No GM-CSF – Arms A, C	
					Rate (%)	Median Fold-increase*	Rate (%)	Median Fold-increase*		Rate (%)	Median Fold-increase*	Rate (%)	Median Fold-increase*
A1	DAEK	46	41	10.2	54	12.4	16	81	33.0	100	34.1		
	EAD	46	7	2.4	4	2.4	16	6	5.7	11	5.7		
	EVD	46	11	3.1	13	3.1	16	63	8.8	89	8.8		
	SSD	46	7	3.6	4	2.4	16	0	n/a	0	n/a		
A2	GLY	59	27	6	37	10	21	86	8.1	100	14.4		
	IMD	59	44	7.1	63	9.4	21	90	14.1	100	19.9		
	YLE	59	8	6.3	7	6.8	21	10	9.0	22	9.0		
	YMD	59	14	4.1	20	4.4	21	67	4.1	67	11.4		
A3	ALLA	38	26	9.1	45	9.1	19	89	13.6	90	34.5		
	ASG	38	11	3.3	14	3.2	19	16	19.2	20	20.6		
	LIY	38	8	3.3	9	2.9	19	68	9.3	70	12.1		
	SLF	38	50	12.6	73	17.8	19	79	13.9	100	16.9		
All	12MP	66	48	4.8	60	8.8	ND						
DR	Tetanus	118	86	23.7	95	38.6	ND						
A1	Subset	46	48	9.3	58	10.4	16	88	36.7	100	55.9		
A2	Subset	59	51	8.1	67	10.1	21	90	20.1	100	37.8		
A3	Subset	38	55	20.8	82	22.9	19	95	28.1	100	54.9		

*Using the maximum response across time, for those patients in which there was a positive immune response.

**The peptides are abbreviated with the first 3-4 letters of the each peptide amino acid sequence.

ND = not done

Subset: for A1, A2, or A3 = median of maximum CumR_{time} for the subset of four peptides restricted by each of the HLA-A1, -A2, or -A3 alleles, respectively.

12MP = maximum reactivity to the mixture of the 12 Class I MHC restricted melanoma peptides, evaluated in a subset of 66 patients.