Results of Clinical Trials Using DC Vaccines for Cancer Immunotherapy

Type of cancer	Antigen	DC type	Route	N	Immune Response	Clinical Response	(*Y/N)	Centre/ Reference
Non Hodgkin's Lymphoma	Idiotype	BDC	IV (& then SC Ag)	4	4/4 Id specific prolif	1 CR, 1 PR, 1 resolving all evidence of detectable disease	-	Stanford 1
Non Hodgkin's Lymphoma	Tumour lysate	MaMo	ID	3/18	2 DTH positive	2 PR 1SD	Y	Trabzon 2
Stage III/IV Follicular B-cell Lymphoma	Idiotype I KLH	BDC	IV	10 in pilot phase	8/10 T-cell proliferative response 10/10 KLH response	2/10 CR (relapse 44,57 months) 1/10 PR, 1/10 No clinical disease 6/10 PD	N	Stanford 3
				25 in first CR	23/25 KLH response 15/23 T-cell anti Id responses 6/12 (+KLH) Ig anti Id response	5 CR, 11 CR (no clinical disease), 7 PR, 2 PD		
Cutaneous T-cell Lymphoma	Tumour Lysate	MaMo	IN	10	8 DTH reactions	1CR, 4PR, 5PD	-	Zurich 4
Cutaneous T-cell Lymphoma	Tumour via Transimmunization	MaMo	Re-infused	27	-	12 of 20 ≥50% dimunition in cutaneous involvement, 6 marked improvement in hematologic correlates of disease activity	-	New Haven 5
Multiple Myeloma	Idiotype protein	ImMo	IV	1	Id specific prolif, Ab	Paraprotein fall	-	Cardiff 6
Multiple Myeloma (post auto HSCT)	Idiotype protein + KLH	BDC	IV	12	11/12 KLH, 2/12 Id-specific prolif 1/3 treated Id specific CTL	9/12 alive, minimum follow up 16 months	-	Stanford 7
		BDC	IV	26	24/26 KLH, 4/26 Id-specific prolif.	17/26 alive median follow up 34 months	-	Stanford 8
Multiple Myeloma	Idiotype protein + KLH	ImMo	IV	6	6/6 KLH specific prolif, 3/6 Id specific CTL increase 4/5 Id specific prolif (2 IFNγ) 3/6 Id specific CTL increase	1 Paraprotein fall, 2 SD, 2 PD 1 Death Better immune response if no pretreatment	Y	Cardiff 9

Multiple Myeloma	Idiotype protein	$CD34^+$	SC (& SC Ag & GM-CSF)	11	4/10 Id specific Elispot 3/10 Id Ab increase	1 SD, 10 PD	-	Cologne 10
Multiple Myeloma	Idiotype	MaMo	SC & IV (& IL-2)	5	2/5 Id specific prolif 3/5 Elispot 0/5 DTH	1 PR, 3 SD, 1 PD	-	Little Rock 11
Multiple Myeloma	Idiotype	MaMo	IV + Id/KLH/GMCSF as adjuvant	10/12	1/12 specific Id response 1/12 Id specific T cell prolif response with accompanying TNFα secretion All patients who received at least 3 Id/KLH booster vaccines mounted strong KLH specific responses Delayed KLH specific Ab responses in 7 /12	2 Relapse – withdrawn 8 PD 2SD	-	Tubingen 12
Multiple Myeloma	α-Glactosyl-Ceramide	MaMo	IV	5	>100 fold increase in circulating NKT cells with impaired ability to secrete IFN-γ	-	-	New York 13
Multiple Myeloma	Idiotype	Ma Mo	IV	2	KLH specific and ideotype specific T cell response with IFN-γ secretion	2 PD	N	Nottingham 14
Multiple Myeloma	Allogeneic Idiotype	Ma Mo	ID	4	Anti KLH response in all patients	2 patients had transient response, 1 SD, 3PD	-	Pamplona 15
Multiple Myeloma	Whole protein Id	MaMo	SC/IV	6	8/15 Id specific T cell prolif response. 8/15 increase IFN-γ secreting T cells 4/15 DTH to Id	7/15 SD, 1 durable PR, 7PD		Bologna 16
	Id-derived class 1 restricted peptide + KLH			9				
ALL	Tumour lysate	MaMo	ID	1/18	DTH	CR	Y	Trabzon 2
Leukemia (relapsed post allo HSCT)	Apoptotic	Allo MaMo	IV	4	2/3 Tumour specific CTL	2/4 reduced leukemia count	-	Kumamoto 17
Chronic Myeloid Leukemia (CML)	Idiotype	Leukemic-derived MaMo	IV (& IL-2)	5	-	1 of 5 controlled leucocytosis 1 of 5 loss of trisomy 8	-	Houston 18

Chronic Myeloid Leukemia (Chronic phase, post IFN-α & autologous HSCT)	Leukemic (Ph+) DC + PPD	MaMo	IV	1	PPD DTH Ph specific CTL	Hematological response Partial cytogeneic response	-	Ninomaru 19
Chronic Myeloid Leukemia (CML)	KLH and BCG particles	ImMo (day14-21)	ID	3	Low level to antigens, high anti-KLH. DTH against KLH, CML/DC were evident to 20months post vaccination	IFN alpha resistant proteins, no reliable measurement	-	Amsterdam 20
Chronic Myelogenous Leukemia (CML)	Bcr-abl	MaMo	SC	6	-	-	-	Rochester 21
B-Cell Chronic Lymphocytic leukemia	Lysate/apoptopic bodies	Allo MaMo	ID	9	1 enhanced CTL response against RHAMM/CD168 peptide R3. Th1 and Th2 responses generated	Decrease in total WBC number seen in most patients. 5 SD, 4 PD	Y	Lublin 22
Chronic Myelogenous Leukemia (CML)	-	MaMo	SC/ID	6	Increase in T-cell sensitivity to CML-specific stimulation	No clinical responses	-	Rochester 23
Bcr/abl+ Chronic Myeloid Leukaemia	KLH	MaMo	SC	10	3/10 detectable T cells recognizing leuk-associated antigens. Increase in proliferative response of PBMC in all evaluable patients	Improvement in cytogenetic/molecular response possibly related	-	Berlin 24
Acute Myeloid Leukaemia	-	Dendritic - like cells	SC	5/22	4 anti-leukaemic T-cell responses	2 CR, 3 PD	-	Edinburgh 25
Acute Myeloid Leukaemia	PRAME	MaMo	SC	5	Significant increase in CD8+ T cells. IFNy CD4+ T cells increased	3SD for 5.5-13 months, 2PR	Y	Ulm 26
Melanoma	Tumour lysate	MaMo	ID	1/18	Negative DTH	PD	Y	Trabzon 2
Melanoma (Pretreated Stage IV)	Lysate or mix + KLH peptide (HLA-A1: MAGE1/MAGE3; HLA-A2: Melan A, tyrosinase gp100)	ImMo (+FCS)	IN	16	16/16 DTH to KLH 11/16 DTH to peptide	2 CR, 3 PR, Met regression	Y	Zürich 27
Melanoma (Stage IV)	MAGE 3A1 (HLA-A1) peptide	MaMo	SC & ID then IV	11	0/11 DTH to peptide 2/11 Elispot 8/11 Peptide specific CTL	6/11 Met regression Decline in immune response after *iv*	Y	Erlangen 28

Melanoma (Metastatic)	Tumor/Allo PBMC hybrid	Act. PBMC	SC	17	4/14 DTH tumor 11/14 high frequency T cell responses	1 CR, 1 PR, 6SD No response in immune compromised	Y	Berlin 29
Melanoma (Metastatic)	Mart-1; gp 100 peptides	ImMo	IV (± IL-2)	10	1/5 Increased CTL	1 PR (met regression)	N	Bethesda 30
Melanoma (Stage IV)	MAGE-1, MAGE-3 (HLA-A1), Melan A, gp100, Tyrosinase (HLA-A2)	$CD34^+$	IV	14	4/10 DTH to HLA-2 peptide 1/4 Tetramer specific, 0/5 Elispot	1 PR, 7 SD, 6 PD	Y	Freiburg 31
Melanoma (Stage IV)	MAGE 3 (HLA-A1 or HLA A2 peptide)	MaMo	SC, then IV	8	2/2 Tetramer specific 8/8 Elispot 7/8 CTL 10/14 DTH to peptides	1 SD, 7 PD, 4 died Decline in immune response after *iv*	-	Erlangen 32
Melanoma (Stage IV)	Melan A, tyrosinase, MAGE-3 + Flu MP + KLH	$CD34^+$	ID	18	16/18 Ag specific Elispot	3 CR, 4 PR (Met regression; delayed progression) 7 PD, 3 SD	Y	Dallas 33
Melanoma	MAGE (A1/A3 peptide) + KLH	ImMo	IV, SC & IN	23	12/23 Peptide specific CTL increase No difference with KLH	2 PR, 7 SD Decreased immune response with time	-	Brussels 34
Melanoma (Stage IV)	Mart-1, Tyrosinase, gp100 peptides	ImMo	IV	16	2/16 DTH to peptides 5/16 IFN□ ELISA response 0/? Tetramer specific	1CR, 2SD	Y	Los Angeles 35
Melanoma (Stage IV)	Melan A or MAGE-1	ImMo v MaMo	IN	11	1/7 Elispot Im Ma 5/7 Elispot Ma Mo (2/4 CTL) (0/4 CTL)	3 PR, 2 SD, 3PD, 3 deaths	Y	Mainz 36
Melanoma (Stage IV)	MAGE 3 Melan A/MART 1 gp100 and/or tumour lysate	MaMo	SC (+IL-2 + Temozolomide)	2	2/2 Elispot responses	2 PD. Loss of Elispot response associated with disease progression	Y	Copenhagen 37
Melanoma	Tumour lysate & KLH	ImMo	ID	14	5/6 KLH prolif 8/9 DTH 3/7 Lysate Elispot 4/10 DTH	-	-	Ann Arbor 38
Melanoma (Stage II)	MelanA/MART-1	MaMo	ID	13/15	Increased recall antigen specific CD4+ T cells. 9/13 increased CD8+ T cells. Long-lived tumour antigen specific DTH response in 12/13	4/13 slight lymph node enlargement 10 Tumor free on follow up, 3PD	-	Mainz 39

Metastatic Melanoma (Stage IV)	Acid eluted autologous peptides +KLH + HBsAg	ImMo	ID	22	9/19 T proliferative response to HbsAg 6/19 DTH or Elispot to acid eluted peptides	1 CR, 2 PR, 1 SD, (4 mixed) 18 PD	Y	Brisbane 40,41
Metastatic Melanoma	Autologous Tumor Lysate	MaMo	ID	19	3 Positive DTH response 3 faint DTH response 4 no DTH response	3 CR, 3 PR, 13 PD	-	Brisbane 42
Metastatic Melanoma	Gp 100 and tyrosinase Peptides	ImMo	IV / SC	23	CTL in 8/10 peptide + Montanide ISA-51 adjuvant CTL in 1/10 Peptide loaded MO-DC	Vitiligo in 2 patients in the adjuvant arm Responses in 2 patients in the peptide + Adjuvant and 1patient in the Mo-DC plus peptide arm.	-	Charlottesville 43
Metastatic Melanoma	MART, Tyrosinase, gp100 and influenza matrix or Tumour lysate and KLH	ImMo	IN	33	DTH correlates with good outcome/peptides not giving good immunizations with these conditions	2/3 PR, 1 MR, 2/4 SD had positive skin response. Most patients responded to KLH	-	Newcastle 44
Metastatic Melanoma	Class I/II Melanoma peptides + KLH	MaMo	ID	24	T cell responses to ELISPOT, CD4, DTH, TH1 or 2 profiles	1/24 CR, 8/24 SD, 13 PD	-	Erlangen 45
Metastatic Melanoma	Class I peptides (MART, gp100, tyrosinase)	Rapid grown MoDC with calcium ionophore, IL2 and IL12	IV IN SC	27	No dose limiting toxicity	3/27 objective MR with regression of lesions	-	Pennsylvania 46
Metastatic Melanoma	Tumour lysate material	MaMo	ID	10	CD2+ T cells acquired CTL activity against autologous or allogeneic tumour cells.	No autoimmunity, 2 MR, 1 SD	-	Tokyo 47
Metastatic Melanoma	Autologous tumour material	MaMo	SC	17	No distinct DTH response, 4 reactivity against autologous tumour cell.	4 Non evaluable, 1 PR for 6 mths, 1 SD for 6 mths, 11 PD	-	Regensburg 48
Metastatic Melanoma	Autologous tumour material	Allogeneic MaMo	ID	17	11/14 high frequency T-cell responses	1 CR, 1 PR, 6 SD,	-	Berlin 49
Metastatic Melanoma	-	MaMo	IT	7	-	4 displayed tumour regression	-	Columbus 50
Melanoma	Autologous Tumour lysate	MaMo	ID	17	9 DTH response	1 PR, 4 NR, 6 PD	-	Farmington 51

Metastatic Melanoma	Autologous Tumour Cells	Allogeneic	ID	17/20	11/14 CD8+ T cell responses Evidence of tumour evasion	1 CR, 1 MR, 6 SD, 9PD (prolonged survival time) 14 localized erythema and induration at injection site	N	Berlin 52
Metastatic Melanoma	MVA-hTyr	CD34+	IV/SC	6	4/5 HLA A*0201 patients had increased frequency of CTLs to tyrosinase	1 PR, 5 PD	N	Milan 53
Metastatic Melanoma	Tumour cell lysate	MaMo	IN	11	5 increased proliferative response 2 increased ANA	1 PR for 5 months then PD, 2 MR for 3 months then PD, 8 PD No clinical autoimmune manifestation	Y	Barcelona 54
Metastatic Melanoma	Autologous tumour cells	MaMo	SC	17	5 T lymphocytes react ex-vivo to different antigens 4 showed reactivity to autologous tumour	1 PR, 1 PD with some regressing metastases 1 SD	N	Regensburg 55
Metastatic Melanoma	Flu-MP, KLH and 4 melanoma antigens	CD34+	SC	18	13 KLH specific responses In 8/15 14/17 Flu specific responses 5/9 increase in melanoma antigen- specific circulating T-cells	-	-	Dallas 56
Metastatic Melanoma	Autologous tumour cells	Allogeneic MaMo	SC	11	No patients mounted a positive autologous anti-melanoma DTH response	1 SD, 10 PD	N	Regensburg 57
Metastatic Melanoma	MART-1, tyrosinase, MAGE-3, gp10, Flu-MP	CD34+	SC	14/20	0/20 showed expansion of melanoma peptide specific IFN secreting T cells despite 6/7 CD8+ T cells	1/14(20) SD after 4 vaccines	N	Dallas 58
	KLH alone non pulsed			6/20		1/6(20) SD after 4 vaccines	N	
Metastatic Melanoma	G280-9V peptide	ImMo	IV	12	CD8+ immunity to native G280 in 12/12. 9/9 measurable high avidity CTL activity	2 PR, 3SD	-	Boston 59
Metastatic Melanoma	Allogeneic tumor cell lysate	MaMo	ID/IN	9	-	9PD	-	Paris 60
Metastatic Melanoma	Melanoma cell lysate	MaMo	ID	13	7/13 increase in interferon production. 6/13 showed DTH response	11/20 SD, 2/20 PR	Y	Santiago 61
	Melanoma cell lysate + Il-2 s/c	MaMo	ID	7	3/7 increase in interferon production. 4/7 showed DTH response			

Metastatic Melanoma	RNA	ImMo	SC	6	No immune response	No objective clinical response	-	Rochester 62
Metastatic Melanoma	MART-1/MelanA, tyrosinase, MAGE-3 and gp100	CD34+	SC	18	13 IFNy response to at least 2 melanoma peptides after 4 vaccinations	4/18 alive, 10 PD	Y	Dallas 63
Metastatic Melanoma	NA17.A2 and MAGE3.DP4	MaMo	SC/ID	8	3/8 showed NA17.A2 TETp response	Out of 4 with measurable disease, 1 SD, 3 PD. Out of 4 with no detectable tumour 3 free of disease for >13months and 1 PD	-	Brussels 64
Metastatic Melanoma	Irradiated autologous tumour cells + IL2	MaMo	SC	10	8/9 increased IFNy expressing T cells	1 PR at 12 weeks after 1st vaccine + 9 months later CR. 2 SD, 1 MR	Y	Greenville 65
Metastatic Melanoma	Melan-A/MART-1 and gp100	MaMo	SC	7	5/7 consistent enhancement of CD8+ T cells recognizing modified and native MART-1 and gp100 peptides and melanoma cells. Increased CD40 and CD86	2SD, 1 No evidence of disease, 4 PD	Y	Rome 66
Metastatic Melanoma	No peptide (DC only)	ImMo	IT	7	4/7 lymphocyte infiltration	1 CR of injected tumour + 8 others within a 6cm radius	N	Columbus 75
Melanoma	NY-ESO-1, MAGE- A4 MAGE- A10, HBcAg and Flu	BDC	ID	6	3/6 DTH were seen in response to Flu peptide. 2/6 T cell response to MAGE-A10, 0/6 T cell response to MAGE-A4	-	N	Heidelberg 76
Metastatic Melanoma	Adoptively transferred Melan-A-specific CTL lines + IL-2	MaMo	IV	11	Elevated frequency of ciculating Mela-A tetramer+ T cells up to 2 weeks	1 CR, 1PR, 1MR, up to 50% increase in eosinophils in 7/11, selective loss of Melan-A expression in lymph node metastases in 2	Y	Regensberg 77
Metastatic Melanoma	Melan-A/MART-1 and/or NA17-A and KLH	MaMo	IL/IN	14	6 of 10 positive responses against Na-17-A, 4 of 11 against KLH and 3 of 9 against Melan-A	2 patients lesions remained stable. Median overall survival was 10.5 months with 3 patients alive after follow up of 30,39 and 48 months respectively.	-	78
Metastatic Melanoma	Tumour Lysate	GMCSF MaMo	IV	10/15	-	1 PR, 5 SD,4 PD	Y	Zaragoza 79
Metastatic Melanoma	Heat Shock Proteins	ImMo	Local hyperthermia + IT DCs	(9)10/20	9 Increase in frequency of MART-1 or tyrosinase specific CD8+	3 PR, 4SD, 2 PD TTP significantly longer ($p<0.05$)	-	Beijing 80

			IT only	(9)10/20	1 Increase in frequency of MART-1 or tyrosinase specific CD8+	1 PR, 3 SD, 5PD		
Metastatic Melanoma	All Tumour cell line lysate	ImMo	SC/IV	40	16/40 immune response to tumour cell lysate	3SD 10pts antitumour activity	N	Paris 81
Melanoma	Apo-Nec Cell lines	ImMo	ID	16	15 DTH responses. 2 increase of anti-gp100 and MelanA/MART-1 IFNy secreting CD8+ T cells	8 NED , 7PD	-	Buenos Aires 82
Metastatic Breast	HTERT 1540 HIV RT-pol476 Influenza MP58	MaMo	IT	3	-	2 displayed tumour regression		Columbus 50
Metastatic Breast	Antigenic Peptide	MaMo	IV	1/11	-	SD	-	Hiroshima 67
Breast	CEA (CAP-1) Peptide	MaMo	IV	5/21	?/4 DTH to CEA of total study	1 SD, 4 PD	-	Durham 68
Breast (Pretreated Stage IV)	Tumor lysate + KLH	ImMo	IN	1	DTH to KLH No DTH to lysate	Met regression	-	Osaka 69
Breast (Pretreated Stage IV)	Her 2/Neu	MaMo	SC	7/10	3/7 Peptide specific CTL	1 PR	-	Tübingen 70
Breast (Pretreated Stage III/ IV)	MUC1 Lipofectin cDNA	ImMo	SC	7	2/6 DTH to vaccine 3/7 Elispot to peptide	6 PD, 1 SD for 3/12		Berlin 71
Metastatic Breast	Wild-type GP2 or I2L peptide ligand	MaMo	IV	10	8 no antigen specific CD8+ T cells 2 IFNγ producing CD8+ T cells	2PR, 1NE, 6PD, 1SD		Chapel Hill 72
Metastatic Breast	HLA-A2 restricted hTERT peptide + KLH	MaMo	SC	2	2 Telomerase reverse transcriptase CTL response	1 MR, 1PD		Boston 73
Metastatic Breast	Autologous tumour tissue	MaMo	SC	10	7 significant increase in KLH-induced T-cell proliferation index 3 expressed 2-fold increase of CD4+ T cells expressing IFNy. 2 expressed 2-fold increase of CD8+ T cells expressing IFNy.	1 up to 90% regression in chest wall mass and then SD for 24 months. 1 up to 50% disease reduction then PD after 6 months. 1 SD for 5 months then PD. 7 PD		Boston 74
Metastatic Breast	p53 peptide and PADRE	MaMo	SC	6/9	4 T cell responses against modified and unmodified p53	2 SD, 1 transient regression, 1 MR, 2 PD	Y	Herlev 75
Metastatic Breast	Tumour Lysate	GMCSF MaMo	IV	1/15	-	PD	Y	Zaragoza 79

Metastatic Breast	No peptide (DC only)	ImMo	IT	3/10	3/3 TIL	2 PR (regression of injected tumours)	N	Columbus 83
Metastatic Breast	MUC1	MaMo	ID/SC	2/10	-	PD	-	Heidelberg 84
Metastatic Breast	3 wild-type and 3 P2 anchor modified HLA-A2 binding p53 peptides + IL 2 administered concomitantly	MaMo	SC	19 evaluable from 26	P53 specific T cells in 4/7	8 SD or minor regression, 11 PD	Y	Herlev 85
Ovarian	CEA (CAP1) Peptide	MaMo	IV	3/21	?/4 DTH to CEA of total study	1 PR, 2 PD	-	Durham 68
Ovarian (Pretreated Stage II)	Her 2/Neu or MUC-1 Peptides	MaMo	SC	3/10	2/3 Peptide specific CTL	1 SD, 1 short SD	-	Tübingen 70
Stage III Ovarian	MUC1	MaMo	ID/SC	1/10	-	1 SD	-	Heidelberg 84
Ovarian (Progressive or recurrent)	Tumor lysate + KLH	MaMo	SC/ ID	6/8	5/5 DTH to KLH 1/5 DTH to tumor lysate 2/? Elispot tumor lysate 5/6 prolif to KLH 2/6 prolif to lysate	1 PR, 2 SD, 3 PD	-	Bonn 86
Uterine (Sarcoma)	Tumor lysate + KLH	MaMo	SC/ ID	2/8	1/1 DTH to KLH not tumor lysate 1/2 prolif to KLH 0/2 prolif to tumor lysate	2 PD	-	Bonn 6
Fallopian	MUC1	MaMo	ID/SC	1/10	-	PD	-	Heidelberg 84
Hormone Refractory Prostate Cancer	HLA-A2 restricted hTERT peptide + KLH	MaMo	SC	5	2 Telomerase reverse transcriptase CTL response	4 SD, 1 NE		Boston 74
Prostate (metastatic hormone refractory)	PSMA P1 and P2 peptides (HLA-A2) + KLH	MaMo	IV	51	Prolif to peptide in HLA-A2	Peptide Alone: 2 PR 6 SD 12 PD DC Alone: 0 PR 2SD 10PD DC/Peptide: 5 PR 3 SD 10 PD (some responders not HLA-A2)	- - -	Seattle 87
				33 A1 (retreated)	-	9 PR ,11SD, 13 PD (7 deaths)	-	Seattle 88
				33 (25) A2 (new cohort)	-	2 CR, 6 PR	-	Seattle 89,90
				19	-	3 CR, 16 PR Responders showed 10% PSA fall	-	Seattle 89

				46/107	Elispot: PRs; No peptide specific response CR, pre-existing. CTL PRs 2+ peptide specific	2 CR, 6 PR Recall DTH and cytokine response relates to clinical response.	-	Seattle 91
Prostate (recurrence after primary treatment)	PMSA P1 and P2 peptides	ImMo	IV	17 (024), 11 (025)	-	? increased efficacy related to increased DC dose/ frequency		Seattle 92
Prostate	Fusion protein GMCSF + PAP	ImMo 50% & GM-SCF	IV	37 (B)	-	1 CR, 10 PR 11 responders 5% PSA fall	-	Seattle 93
Prostate	Provenge (Fusion protein GMCSF + PAP)	BDC	IV & SC GM-CSF & Ag	12 Phase 1 19 Phase 2	10/26 Prolif to PAP Prolif to GM-CSF and 16/31 Ab PAP	3/31 ≥ 50% 3/31 › 25% PSA fall; no objective regression DC dose effect?	Y	San Francisco 94
Prostate	PA2024	BDC	IV, SC SC, GM-CSF Ag	12/13	9 prolif to PAP 11 Ab to PAP & GM-CSF	4/12 PSA or PAP fall	-	Rochester 95
Metastatic Prostate	PSA mRNA	BDC	IV ID IV	9 6 6	0/9 Elispot, 5/9Ab 4/6 Elispot, 1/6 Ab 3/6 Elispot, 2/6 Ab 21/21 T prolif	6/21 clinical stabilization; correlation with T proliferation not route/Ab	Y	Stanford 96,97
Metastatic Prostate	PMSA/CD86	ImMo	IV & ID	13	8/8 Elispot 9/9 CTL	6/7 decrease log slope PSA 3/3 temporary clearance blood tumour cells.	-	Durham 98
Metastatic Prostate	CDNA andPSMA and CD86 Plasmids	NOT DC vaccine	ID	26	All pts who received plasmids + GMCSF developed positive DTH responsen	15 improved, 6 of them being solely on immunotherapy	-	Rockville 99
Prostate Cancer	Cell lysate + KLH	MaMo	SC, ID and IV	24	13 PSA specific T-cells 24 detectable responses to recall antigens	11 PSA decrease of 6-39%		Paris 100
Prostate	hTERT (11/20) or LAMP hTERT (9/20) mRNA	MaMo	ID Weekly 3-6 times $10 * 10^6$ DC	20	18/20 DTH, infiltrating T-cells hTERT specific 17/18 CD4 response Elispo 18/18 CD8 response Elispot 2/20 not determined	4/4 PSA reduction in LAMP hTERT (5/9 no measurable PSA before treatment) 5/6 PSA reduction in hTERT (5/11 no measurable PSA before treatment) NO PR	-	Durham 101

Prostate	PSA, PSMA, survivin, prostein, transient receptor potential p8 (trp-p8)	MaMo	IV and ID	8	4/8 ELISPOT respons: ¾ prostein, 2/4 survivin, 2/4 PSMA	1 PR, 3 SD, 4 PD	Y	Dresden 102
Prostate	PSA peptide	ImMo	IV	28 total 14: PSA peptide + GM-CSF 14: DC + PSA peptide	14/28 DTH response to PSA 4/28 cytotoxic PSA-specific CTL	Not described	-	Chicago 103
Prostate	prostate stem cell antigen (PSCA(14-22)), prostatic acid phosphatase (PAP(299-307)), prostate-specific membrane antigen (PSMA(4-12)), and prostate-specific antigen (PSA(154-163)).	MaMo	ID 6 times biweekly, boost monthly (n=3)	6 2 early withdrawn due to other complications	3 / 4 DTH response to both loaded and unloaded DC 3 / 4 immune response to all antigens in Elispot	3 / 4 increase in PSA doubling time, but all PD	N	St Gallen 104
Prostate	APC8015 (sipuleucel-T)	BDC	IV	19	Not measured	2 / 19 > 200 % increase in PSA DT	-	Houston 105
Prostate	APC + PA2024, a recombinant prostatic acid phosphatase/granulocyte-macrophage-colony-stimulating factor fusion protein + VEGF Ab	APC8015 (sipuleucel-T)	IV week 0,2,4	22	20/20 immune response to PA2024	1/20 > 50 % PSA reduction 9/20 some reduction in PSA (6-72 %)	-	Cleveland 106
Prostate	APC8015 (sipuleucel-T) and PA2024 injections	BDC	IV	21	100% T-cell response to PA2024	1/21 > 50% PSA reduction and resolution lymphadenopathy	N	Rochester 107
Prostate	APC8015 (sipuleucel-T)	BDC	IV	127 (APC8015 n=82, placebo n=45)	49 patients (31 APC8015 treated, 18 placebo): 8-fold increase in T-cell stimulation index to PA2024	APC8015: 6/82 SD (0/45 control) 4.4 % > 50 % PSA reduction (0% c) median overall survival 25.9 (21.4 months control)	-	San Francisco 108
Hormone Refractory Prostate Cancer	PSCA and PSA peptide	MaMo	SC	12	5 DTH response after 4th vaccine	6 SD, 6PD	Y	Freiburg 109
Prostate	Protocol 1 = PSA peptide + GMCSF	P1 = No DC	P1 = ID	Group A = 14	14 developed positive DTH with 9 of these showing increase in size of DTH response. 13/14 also showed DTH to Flu-M1	-	-	Chicago 110
	Protocol 2 = PSA and Flu peptide	P2 = MaMo		Group B = 14				
Hormone Refractory Prostate Cancer	Tumour Lysate	MaMo	ID	11	9/11 DTH recall response. Increased humoral response in 10	4SD, 7PD		London 111

Hormone Refractory Prostate Cancer	Interferon gamma (sc) + PSA peptides	MaMo	IC	12	12 positive DTH response, 2 slight increase in PSA-peptide specific T cells	I partial and 1 mixed, 4 SD, 2 had a decrease and 4 a slow-down velocity slope in the PSA serum level	-	Freiburg 112
Renal Cell Carcinoma	Tumour lysate	MaMo	ID	2/18	2 Negative DTH	1 80% reduction of one metastatic lesion - PD	Y	Trabzon 2
Renal Cell Carcinoma (Metastatic)	α-Glactosyl-Ceramide	MaMo	IV	1	>100 fold increase in circulating NKT cells with impaired ability to secrete IFN-γ	Developed ANA/RF positivity after vaccine	-	New York 13
Renal Cell Carcinoma (Metastatic)	Autologous tumour tissue	MaMo	SC	13	2 significant increase in KLH-induced T-cell proliferation index 7 expressed 2-fold increase of CD4+ T cells expressing IFNy. 5 expressed 2-fold increase of CD8+ T cells expressing IFNy.	1 SD for 6 months then PD after 9 months from final vaccination, 3 SD with PD after 3 months from final vaccination, 1 SD for 3 months after final vaccination, 8 PD	Y	Boston 74
Metastatic Renal	Tumour Lysate	GMCSF MaMo	IV	1/15	-	SD	Y	Zaragoza 79
Renal Cell Carcinoma (Metastatic)	MUC1	MaMo	ID/SC	3/10	-	1 SD		Heidelberg 84
Metastatic Renal Cell Carcinoma	Tumour Lysate	MaMo	ID	5	5 DTH recall response Increased humoral response in all	2SD, 3PD		London 111
Renal Cell Carcinoma (Metastatic)	Tumour Lysate + KLH	MaMo	IV	12 4	RCC, normal kidney and KLH prolif 1/4 DTH to KLH IFN□ responses to KLH 4/4 IgM and IgG responses to KLH	- 1 PR, 2 SD, 1 PD	- Y	Innsbruck 113 114 115
Renal Cell Carcinoma (Metastatic)	Tumor/ Allo DC hybrid (200 Cy)	MaMo	IV ID	17 10 of 35 enrolled	4/4 DTH to KLH 11/11 prolif to KLH 5/6 prolif to OFA/LRP	2 CR, 1 PR, 7 SD, 17 PD	Y	Innsbruck 116

Renal Cell Carcinoma (Metastatic)	Tumour Lysate	MaMo	IV	17	11/17 DTH to tumor 2/4 HLA-2 MUC-1 Peptide specific IFN-γ	4 CR, 2 PR, 1 mixed	-	Göttingen 117
Renal Cell Carcinoma (Metastatic)	Autologous Tumor Lysate	MaMo	SC	11 Tumour Lysate 4 unpulsed	2/11 DTH to tumour lysate Average rise in serum cytokines? Elispot and CTL non significant change	7 PD, 7SD, 1 PR	-	Bonn 118
Metastatic CEA expressing	CAP-1 peptide(HLA-A2+)/RNA (HLA-A2 $^-$)	ImMo	ID	12	No DTH to Tunour lysate 5/12 increase in response to recall antigen No humeral response	8 SD, 4 PD		Durham 119
Renal Cell Carcinoma (Metastatic)	Tumor cells	ImMo	IV /ID	10/15 Evaluable	T cell response to hTert, G250	7/10 SD (with follow up standard treatment), 3/10 PD		Durham 120
Renal Cell Carcinoma (Metastatic)	Autologous Tumor Lysate	Allogeneic DC	ID	12	3/12 strong DTH 8/12 increase in cytotoxic reactivity of PBLs	4 SD, 8 PD		Bonn 121
Renal Cell Carcinoma (Metastatic)	Tumor derived RNA	ImMo	IV & ID	15	6/7 T cell responses	3/10 SD		Nijmegan 122
Renal Cell Carcinoma (Metastatic)	Autologous Tumor Lysate	MaMo	ID	12/14	No significant phenotypic or cytokine changes	1 PR, 3 SD, 8 PD	N	Los Angeles 123
Renal Cell Carcinoma (Metastatic)	Autologous Tumor Lysate	MaMo	ID	5	4 increase in DTH response 3 increased titres of KLH-specific antibodies of the IgG2 isotype	3 SD (2 of which had MR), 2 PD	Y	Mexico 124
Renal Cell Carcinoma (Metastatic)	Tumour lysate and KLH (10 of 22 received cyclophosphamide)	Allo MaMo	ID/IV	20/22	9/15 antigen independent proliferation. Overall KLH specific responses weak. No significant proliferation to tumour lysate	2 MR (both received cyclo as well), 3 SD (1 received cyclo), 13PD and 4 lost to follow-up	Y	Innsbruck 125
Renal Cell Carcinoma (Metastatic)	Muc 1 peptides + PADRE	MaMo	SC	20	MUC1 specific T cell responses detected in 6 patients with objective response	6 regression of metastatic sited (1CR, 2PR), 4 SD	Y	Tübingen 126
Renal Cell Carcinoma (Metastatic)	CA9 peptide	MaMo	ID	8	Humoral responses against KLH and demonstrated DTH conversion	No clinical responses	N	Nijmegan 127
Renal Cell Carcinoma (Metastatic)	Tumour lysate + KLH	MaMo	ID	3	1 DTH+KLH reaction and 1 KLH reaction (1 non evaluable)	1 SD, 2 PD	Y	Tokyo 128

Renal Cell Carcinoma (Metastatic)	Tumour lysate	MaMo	SC	21/20	10/21 increased in CD4 and/or CD8+ T cell expression of IFNγ	2/20 PR, 8/20 SD	Y	Boston 129
Renal Cell Carcinoma (Metastatic)	Tumor Lysate + KLH	MaMo	SC	9	8 proliferative response	1PR, 5SD, 3PD	Y	Seoul 130
Advanced carcinoembryonic antigen expressing malignancies	Tumor lysate + PTH + KLH	MoDC	IV / ID	(Phase I) 24 (Phase II) 13	-	1 CR, 2 MR, 3 SD, 18 PD 9 PD	-	Durham 131
Medullary Thyroid	Tumour lysate	MaMo	ID	1/18	Positive DTH	10 times decreases calcitonin levels SD	Y	Trabzon 2
Medullary Thyroid	Calcitonin and CEA	MaMo	SC	7	3/7 proliferation to calcitonin 5/7 IFN gamma secretion with calcitonin	No clinical response		Duesseldorf 127,136
Parathryoid	PTH + KLH for first 4 cylces	MaMo	SC	1	PTH specific DTH reactivity	-	-	Duesseldorf 132
Medullary Thyroid	Autologous whole-tumour lysate	MaMo	IN	10	5 positive to DTH 5 higher expression of CD69 & IFNγ in CD3+ cells	3 PR, 1 MR, 2 SD		Vienna 133
Thyroid Medullary (Metastatic)	CEA Calcitonin & KLH	MaMo ImMo (FCS)	SC & IN	1	T prolif, DTH (not to PTH)	No clinical response	-	Duesseldorf 134
Metastatic Thyroid	Tumour lysate	MaMo	IC	6	5 No DTH response, 1 (with SD had equivocal DTH response)	2SD,4PD	N	Tokyo 137
Esophageal	MUC1	MaMo	ID/SC	1/10	-	PD	-	Heidelberg 84
Esophageal	MAGE peptide	MaMo	IV	3/12	1 DTH response	2 MR, 1PD	-	Beppu 138
Gastric Adenocarcinoma	Tumour lysate	MaMo	ID	1/18	Negative DTH	PD	Y	Trabzon 2
Gastric (stomach)	MAGE peptide	MaMo	IV	6/12	1 DTH response	6 PD	-	Beppu 138
Gastrointestinal adenocarcinoma		ImMo	ID	9	3/9 DTH to peptide 6/9 peptide specific interferon gamma 2/9 specific CTL	1 PR, 1 SD, 7 PD, 3/9 decrease CEA	Y	Yamanashi 139
Gastrointestinal	CEA HLA-A24 restricted peptide	BDC	ID / SC	8/10	8 DTH response 1 peptide specific CTL response	2 SD, 6 PD 1 marked decrease in serum CEA	Y	Kyoto 140

Metastatic Gastric	CEA 652	MaMo	ID/SC	2/18	1 CEA CTL in vitro response	2 PD	Y	Kyoto 141
Colon	Tumour lysate	MaMo	ID	1/18	1 DTH +	2 PD	Y	Trabzon 2
Metatstatic Colon	Antigenic Peptide	MaMo	IV	5/11	-	4 PD and 1 SD with 1PD G1 headache and 1SD G1fever	-	Hiroshima 67
Colorectal	Tumour RNA & KLH	ImMo	IV	11/21	?/4 DTH to CEA of total study	11 PD	-	Durham 68
Colon	MUC1	MaMo	ID/SC	1/10	-	SD for 7 months	-	Heidelberg 84
Colon	MAGE peptide	MaMo	IV	3/12	1 DTH response	1 MR, 2 PD	-	Beppu 138
Metastatic Colorectal	CEA 652	MaMo	ID/SC	11/18	1 DTH response, 1 CEA CTL in vitro response	11 PD (3 had post vaccine chemotherapy with increased time to progression	Y	Kyoto 141
Advanced Colorectal	Unpulsed	CD34+/MaMo	IV	9/12	PBMC proliferative responses and DTH responses (not significant) to common recall antigen Candida increased	3 SD	N	Columbus 143
Advanced Colorectal	Recombinant fowlpox vector encoding CEA	ImMo	ID/SC	14 (11 Colorectal and 3 NSCLC)	13/14 CEA specific CD4+ and CD8+ T cell response	1 SD, 5 PD in first cohort 4 SD, 2 PD in second cohort	Y	Durham 144,145
Metastatic Colorectal	Tumour RNA + KLH	MaMo	IV	15	11/13 positive KLH skin test	7/13 decrease in CEA suggestive of some in vivo effect	-	Wellington 146
Metastatic Colorectal	CEAalt + KLH	MaMo	IV	7/9	5/9 ELISPOT positive	1 SD	-	Dresden 147
Metastatic Colorectal	Melanoma Lysate	MaMo	ID	5/6	3/6 tumour samples had no MAGE expression, 3/6 MAGE-A1,-A4 and A12 was detected	2/5 drop in CEA levels	-	Copenhagen 148
Metastatic Colorectal	6 HLA A0201 binding CEA peptides, MAGE, HER2/neu, KLH and pan-DR epitope peptide	Ma Mo	ID	11evaluable/21	T cell responses to CEA 3/11, 10 positive prolif response to PADRE/KLH	PD		San Francisco 150
Metastatic Colorectal	Tumor lysate + tetanus toxoid Ag, Hep B and Flu Matrix peptide	MaMo	IN	8	6 IFN-γ production observed in response to 1 or more Ag 3 response to TT (2 had allo DCs)	2 stablilised/reduction of CEA levels 4 partial or complete stable CEA levels 8PD	Y	London 151

Anal Cancer	α-Glactosyl-Ceramide	MaMo	IV	1	>100 fold increase in circulating NKT cells with impaired ability to secrete IFN-γ	-	-	New York 13
Advanced Liver Cancer	Nil	ImMo	IT	14	8/10 AFP-specific immune response 6/10 increased NK cell cytotoxic activity	2 PR, 4 MR, 3 SD, 5 PD	Y	Taipei 152
Advanced Liver Cancer	Autologous Tumor lysate	MaMo	IV	31 – 14 pulsed alone 17 pulsed + boosted	0/14 responded to tumor lysate skin test	1 PR, 6 SD and 7 PD in pulsed group. 3 PR, 11 SD and 3 PD in pulsed + boosted group	N	Taoyuan 153
Liver	Tumour lysate	MaMo	IN	10	7/10 positive DTH response	1MR, 6SD, 3PD		Oita 154
Liver	HLA A0201+ AFP	MaMo	ID	10/16	6/10 increased IFN-γ production	1 no evidence of disease, 9 PD	-	Pittsburgh 155
Metastatic Lung	Antigenic Peptide	MaMo	IV	1/11	-	PD	-	Hiroshima 67
Metastatic Lung	Tumour Lysate	GMCSF MaMo	IV	2	-	1 SD, 1 PD	Y	Zaragoza 79
Lung	MUC1	MaMo	ID/SC	1/10	-	PD	-	Heidelberg 84
Lung	CEA HLA-A24 restricted peptide	BDC	ID/ SC	2/10	2 DTH response	2 PD	Y	Kyoto 140
Metastatic Lung	CEA 652	MaMo	ID/SC	5/18	2 DTH response, 1 CEA CTL in vitro response	1SD 3 PD 1 unknown	Y	Kyoto 141
Non-Small Cell Lung Cancer	Allo NSCLC cell line	MaMo	ID	16	5/16 no clear immunological response 5/16 tumour-antigen independent response 6/16 show antigen specific response	6 PD, 1 no evidence of disease 12 months post vaccine, 1 SD		Lexington 142
Metastatic Lung	CEAalt + KLH	MaMo	IV	2/9	EILISPOT negative	2 PD	-	Dresden 147
Non-Small Cell Lung Cancer	αGalCer	ImMo	IV	11	1 increase in NKT cell number and IFN-γ production after vaccine 1 and 2. 2 increase in NKT cell number only after 1st vaccine	5 no change in status 4 PD	N	Chiba 156
NSCL (stages I-III)	Allogeneic NSCL cell line	ImMo	ID	7 Stage I/II	6 Immunolgical response	6 NED 1 Stable mets	-	Lexington

				7 Stage III	4 Immunological response	3 NED, 4 PD		157
Metastatic Pancreas	Antigenic Peptide	MaMo	IV	2/11	-	1 PR, 1 PD	-	Hiroshima 67
Advanced Pancreatic	CEA (CAP-1) peptide	ImMo	IV	1/21	?/4 DTH to CEA of total study	1 PD	Y	Durham 68
Metastatic Pancreas	pCMV Muc 1	ImMo	SC	1	-	1PD	-	Berlin 71
Pancreas (Neuroendocrine)	Tumor lysate + KLH	ImMo	SC	3	0/3 DTH 1/3 Elispot	3 PD	-	Berlin 71
Pancreas (Neuroendocrine)	Tumour Lysate	MaMo	SC	1	Strong DTH reactivity	Decrease in tumour marker chromogrnanin A from 120pg/ml to 34pg/ml	-	Duesseldorf 132
Advanced Pancreatic	Unpulsed	CD34+/MaMo	IV	3/12	PBMC proliferative responses and DTH responses (not significant) to common recall antigen candida increased	1SD	N	Columbus 143
Pancreas (Neuroendocrine)	Autologous Tumor Lysate	MaMo	SC	1	Skin response to DTH PBMC proliferation to T cells	SD		Duesseldorf 158
Advanced Pancreatic	*ras* peptide	ImMo	IV	5	2 proliferative T-cell response	3SD, 2PD	Y	Oslo 159
Glioblastoma	Tumour lysate	MaMo	ID	3/18	3 DTH negative	3PD	Y	Trabzon 2
Glioma	Autologous Tumour Lysate	MaMo	SC	9	4/9 Increase in number of CD8+ antigen specific T-cell clones CD45RO+ and CD8+ T cell infiltrates in glioma	Prolonged survival P=0.0013		Los Angeles 160
Glioma	Tumour/IL-4 transducted fibroblasts	MaMo	ID	8	6/6 PBMC IFN-γ	2 PR	-	Tokyo 161
Glioma	KLH and Tumour Lysate	ImMo	ID	0	-	-	-	Pittsburgh 162
Glioma	Tumor lysate + KLH	Adherent ImMo	ID /IT	10	3/6 DTH response to autologous tumour lysate 2/6 increased ELISOPT	2/6 MR		Niigata 163
Glioma	Tumour Lysate	MaMo	SC	14	6/10 IFNy expression in response to tumour lysate 4/9 significant CD8+ expansion against MAGE2,gp100 and Her-2	Median Survival 133 weeks		Los Angeles 164

Glioma	Fusions of Glioma cells + rhIL-12	MaMo	ID	15	CD8+ T cell infiltrate but no CD4+ T cells seen 2/15 cytolytic activity against tumour cells increased	2 SD, 13 PD (3-18 months post treatment) No statistically significant treatment associated response rate		Tokyo 165
Glioma	Autologous Tumour Lysate	MaMo	ID or ID/IT	24	8/17 reactivity to autologous tumour .6 Increase Elispot and DTH responses	1 PR, 3MR, 10 SD, 10 PD IT+ID administration showed longer survival than ID injection alone	Y	Niigata 166
Advanced Glioma	Peptides	-	SC	21/25	14 increased cellular response. 11 icreased cellular response. Peptide specific IgG was detected	5 PR, 8SD, 8PD	Y	Niigata 167
Glioblastoma	Autologous tumor peptides	MaMo	ID	12	6 antitumor CTL responses. Increased intratumoral infiltration by CTL evident in 4 of 8 with reoperative vaccination	1 objective clinical response	N	Los Angeles 168
Glioma	Tumour Ags	MaMo	SC	39	23 DTH+	Improved QOL, increased survival values	-	Novosibirsk 169
Ewings Sarcoma	Fusion proteins – EWS/FLI-1 peptide	ImMo	ID	10	7/10 DTH to KLH 3/10 DTH to tumor	1 PR (Tumor regression)	-	Ann Arbor 170
				15	3/6 IFN gamma Elispot to tumour antigen	1 PR, 4 SD, 9 PD		Ann Arbor 171
Ewing Sarcoma and Alveolar Rhabdomyosarcoma	Tumour lysate + KLH	BDC	IV (&IL-2)	12 (3 only >1 injection)	-	4 PD		Bethesda 172
Metastatic Neuroblastoma	Tumour RNA	MaMo	ID / IV	11	2/11 increase in antitumour antibodies All had slightly increased lymphocyte proliferation to PHA	1 SD 14 months after diagnosis 10 PD		Parkville 174
Brain Tumour	Tumour RNA	ImMo	IV and ID	7	2 modest increase in specific antitumour antibodies.	3SD, 4 PD		Parkville 175
Anaplastic astrocytoma	Tumour lysate	MaMo	ID	2/18	2 DTH Negative	2 PD	Y	Trabzon 2
Systemic Epindimoma	Tumour lysate	MaMo	ID	1/18	DTH +	Near CR	Y	Trabzon 2
Nasopharyngeal Carcinoma	EBV	Adherent monocytes – MO-DC D7 immature	Intra-cavital	5	Lymphocytes became prominent in the effusion after therapy.	Marked decrease in effusion in all patients. Complete disappearance of tumor cells in effusion in 4/5.		Kaohsiung 176

Malignant Effusion	OK 432	MaMo + activated lymphocytes	Via catheter intracavital	5	3 increased IFN-γ levels in effusion	Effusion production and tumour markers decreased in all patients. Mean survival time = 9 months		Fukuoka 173
Disseminated Carcinomas (phase I)	Tumour Cells	MaMo + activated lymphocytes	ID	19	-	6 responders with longer overall survival	-	Fukuoka 177
Schwannoma	Tumour lysate	MaMo	ID	1/18	DTH positive	90% reduction of pulmonary metastatic lesion -PD	Y	Trabzon 2
Metatstatic Schwannoma	Tumour Lysate	GMCSF MaMo	IV	1/15	-	PD	Y	Zaragoza 79
Cervical	Recombinant HPV16/18 E7 + KLH	MaMo	SC	10	10 CD4+ T cell and antibody responses, 8 increased E7-specific Cd8+ T cells. 10 DTH reposnse to HPV E& and KLH	Localised reactions to sc injections. No tumour recurrence	-	Little Rock 178
HIV	HIV antigen	Allogeneic Mo	IV	5/6	2 Increase in HIV antigen specific immune response	No clinical benefit	N	Seattle 179
HIV	HIV-1 MN gp160 antigen	Allogeneic MaMo	IV	5	1 increases in envelope specific CTL responses + IFN-γ and IL-2 production 1 increases in envelope specific lymphoproliferative responses	No clinical benefit	N	Stanford 180
		Autologous MaMo		1	Increase in peptide specific proliferative response	No clinical benefit		
HIV	Heat inactivated HIV-1	MaMo	S/C	12	4 /12HIV CD4+ and CD8+ lymphoproliferative responses	4/12 set-point plasma viral load decreased ≥0.5 $\log_{10}$	Y	Madrid 181
HIV	Aldrithiol-2-inactivated HIV-1	MaMo	S/C	18	8 HIV-1-specific IL-2 or IFN-γ expressing CD4+ T cells and HIV-1 gag-specific perforin-expressing CD8+ effector cells	8 prolonged suppression of viral load of more than 90% for at least 1 year	Y	Paris 182
Hepatitis B	HBsAg	MaMo	S/C	19	-	11/19 had clinical response including 3 that lost HBV-DNA and 2 had decrease in HBV-DNA load. 2 patients cotreated with lamuvidine had complete response.	N	Chongquing 183
Hepatitis B	HBsAg	MaMo	ID	6	Anti HBs detected in sera of 6/6	NA	N	Ehime 184

Footnote: *Correlation with Immune response Yes/No

Abbreviations:

ImMo: immature monocyte derived DC,
BDC: blood dendritic cell
CR: complete response
MR: Minimal response
PD: Progressive disease
IN: intra nodal
IT: intratumoral
MaMo: mature monocyte derived DC
DTH: delayed type hypersensitivity
PR: partial response
SD: stable disease
ID: intra dermal
IV: intravenous
S/C: subcutaneous injection

IC: intacutaneously **IL:** Intralymphatic

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