

Supplementary Material.

Supplementary Table S1. List of viruses used.

Virus	Serotype	E1A-promoter	E1A	Transgene in E3	Fiber feature	Target receptor	Reference
Ad5-d24-RGD	5	wt	Δ24	none	wt (Ad5)	CAR and integrins	(1), (2)
Ad5/3-d24-GMCSF	5	wt	Δ24	GMCSF	Ad3 knob	Ad3	(3)
Ad5-RGD-d24-GMCSF	5	wt	Δ24	GMCSF	wt (Ad5)	CAR and integrins	(2)
Ad5-d24-GMCSF	5	wt	Δ24	GMCSF	wt (Ad5)	CAR	(4)
ICOVIR-7	5	E2F-1	Δ24	none	wt (Ad5)	CAR and integrins	(5), (6)
Ad5/3-cox2L-D24	5	cox2L	Δ24	none	Ad3 knob	Ad3	(7), (8)
Ad5/3-hTERT-CD40L	5	hTERT	wt	CD40L	Ad3 knob	Ad3	(9), (10)
Ad5/3-E2F-d24-GMCSF	5	E2F	Δ24	GMCSF	Ad3 knob	Ad3	(11)
Ad3-hTERT-E1	3	hTERT	wt	none	wt (Ad3)	Ad3	(12), (13)

wt = wild-type; GMCSF = granulocyte-macrophage colony-stimulating factor; CAR = Coxsackie adenovirus receptor

Supplementary Table S1 References:

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- (3) Koski A, Kangasniemi L, et al. Treatment of Cancer Patients with a Serotype 5/3 Chimeric Oncolytic Adenovirus Expressing Granulocyte-Macrophage Colony Stimulating Factor. *Mol Ther* 2010; 18:1874-84
- (4) Cerullo V, Pesonen S, et al. Oncolytic adenovirus coding for GMCSF induces anti-tumoral immunity in human cancer patients. *Cancer Res* 2010; 70:4297-309
- (5) Rojas JJ, Cascallo M, et al. A modified E2F-1 promoter improves the efficacy to toxicity ratio of oncolytic adenoviruses. *Gene Ther* 2009; 16:1441-51
- (6) Nokisalmi P, Pesonen S, et al. Oncolytic Adenovirus ICOVIR-7 in Patients with Advanced and Refractory Solid Tumors. *Clin Cancer Res* 2010; 16:3035-43
- (7) Bauerschmitz GJ, Guse K, et al. Triple-targeted oncolytic adenoviruses featuring the cox2 promoter, E1A transcomplementation, and serotype chimerism for enhanced selectivity for ovarian cancer cells. *Mol Ther* 2006; 14:164-74
- (8) Pesonen S, Nokisalmi P, et al. Prolonged systemic circulation of chimeric oncolytic adenovirus Ad5/3-Cox2L-D24 in patients with metastatic and refractory solid tumors. *Gene Ther* 2010; 17:892-904
- (9) Diaconu I, Cerullo V, et al. Immune response is an important aspect of the anti-tumor effect of an oncolytic adenovirus coding for CD40L. *Cancer Res* 2012; 72:2327-38
- (10) Pesonen S, Diaconu I, et al. Oncolytic immunotherapy of advanced solid tumors with Ad5/3-hTERT-CD40L (CGTG-401): assessment of safety and immunological responses in patients. *Cancer Res* 2012; 72:1621-31
- (11) Hemminki O, Juhila J, et al. Immunological data from cancer patients treated with Ad5/3 E2F Δ24 GMCSF suggests wide applicability for tumor immunotherapy. Submitted Manuscript.
- (12) Hemminki O, Bauerschmitz G, et al. Oncolytic adenovirus based on serotype 3. *Cancer Gene Ther* 2011; 18:288-96
- (13) Hemminki O, Diaconu I, et al. Ad3-hTERT-E1A, a fully serotype 3 oncolytic adenovirus, in patients with chemotherapy refractory cancer. *Mol Ther* 2012; 20:1821-30

Supplementary Table S2. Log-rank *P*-values for comparison of survival in cases and controls: all patients.

	WHO	Sex	Age	Time from Diagnosis	Previous Regimen	Radiation	Surgery
Test used	Mann-Whitney	Fisher's exact	Mann-Whitney	Mann-Whitney	Mann-Whitney	Fisher's exact	Fisher's exact
Urinary	0.15	0.51	0.14	0.56	0.32	1.00	0.22
Gastric	0.38	0.66	0.10	0.09	0.36	1.00	0.67
Intestinal	0.50	0.60	0.05	0.14	0.78	1.00	1.00
Liver	0.96	0.17	0.09	0.45	0.43	0.52	0.63
Pancreatic	0.48	0.78	0.25	0.61	0.85	0.48	1.00
Lung	0.71	0.54	0.22	0.50	0.35	0.13	1.00
Neuroendocrine	0.11	0.22	0.03 (Ctrls older)	0.29	0.03 (Cases more)	0.29	0.52
Prostate	0.97	All male	0.096 0.04	0.79	0.52	0.39	0.07
Ovarian	0.57	All female	0.04 (Ctrls older)	0.74	0.09	0.56	0.32
Melanoma	0.33	1.00	0.57	0.96	0.72	1.00	1.00
Mesothelioma							
Sarcoma	0.73	0.53	0.93	0.76	0.88	0.52 0.02	0.74
Breast	0.23	All female	0.20	0.38	0.08	(Cases more)	0.40
Uterine	0.31	All female	1.00	0.78	0.58	0.18	0.46
Head and neck	0.46	0.08	0.18	0.90	0.85	1.00	1.00
All combined	0.17	0.25	<0.001 (Ctrls older)	0.48	0.01 (Cases more)	0.09	0.01 (Cases more)

Supplementary Table S3. Log-rank *P*-values for comparison of survival in cases and controls: GMCSF treated patients.

	WHO	Sex	Age	Time from Diagnosis	Previous Regimen	Radiation	Surgery
Test used	Mann-Whitney	Fisher's exact	Mann-Whitney	Mann-Whitney	Mann-Whitney	Fisher's exact	Fisher's exact
Urinary	0.22	0.52	0.22	0.29	0.18	1.00	0.22
Gastric*	0.40	0.37	0.21	0.18	0.57	1.00	0.66
Instestinal	0.81	0.75	0.10	0.08	0.96	1.00	1.00
Liver*	0.96	0.17	0.09	0.45	0.43	0.52	0.63
Pancreatic	0.72	1.00	0.26	0.41	0.78	0.39	0.74
Lung*	0.81	0.75	0.35	0.79	0.38	0.13	1.00
Neuroendocrine	0.51	0.18	0.05	0.49	0.08	1.00	1.00
Prostate	0.81	All male	0.10	0.44	0.21	1.00	0.14
Ovarian*	0.97	All female	0.06	0.75	0.11	0.56	0.16
Melanoma*	0.33	1.00	0.57	0.96	0.72	1.00	1.00
Mesothelioma*							
Sarcoma*	0.89	0.52	0.98	0.73	0.87	0.51	0.74
Breast*	0.22	All female	0.57	0.17	0.07	0.01 (Cases more)	0.46
Uterine*	0.19	All female	0.60	0.83	0.60	0.44	0.44
Head and neck*	0.37	0.09	0.23	0.67	1.00	1.00	1.00
All combined	0.58	0.08	<0.001 (Ctrls older)	0.37	0.04 (Cases more)	0.08	0.01 (Cases more)
GMCSF-sensitive cancer types*	0.97	0.89	0.01 (Ctrls older)	0.06	0.05	0.04 (Cases more)	0.23

* indicates GMCSF-sensitive cancer type