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Supplemental Information

Abscopal Effect in Non-injected Tumors Achieved with Cytokine-Armed Oncolytic Adenovirus

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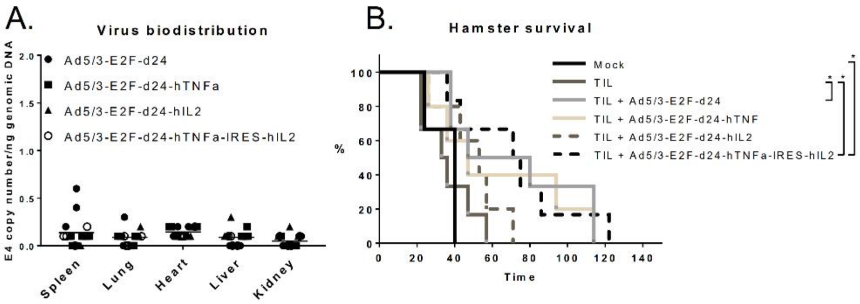
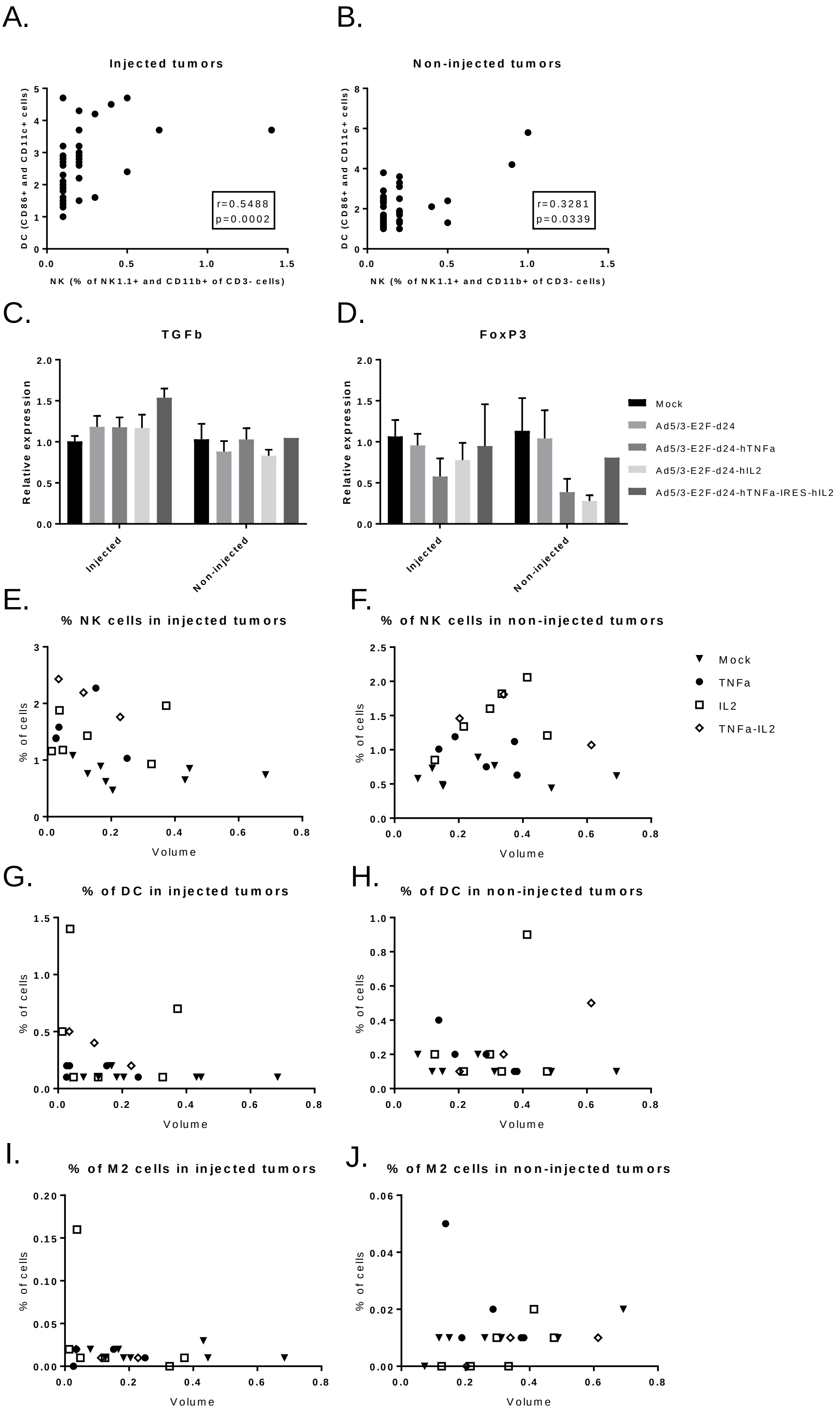
Supplementary Materials:

Fig. S1



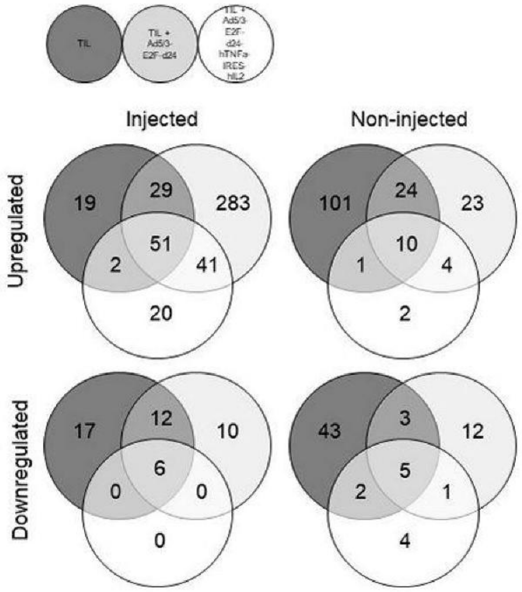
Supplementary Figure S1. Viruses spread throughout the body and prolong hamster survival. Small amounts of viral DNA were detected in different parts of the body on day 16 (**A**). The tumor progression of the hamsters treated with viruses on days 1, 8, 15, 22, and 29, and once with TILs was followed until the tumor size exceeded 2.0 cm or the tumors ulcerated (**B**). Log-rank test was performed to evaluate the statistical significance, *p<0.05.

Fig. S2



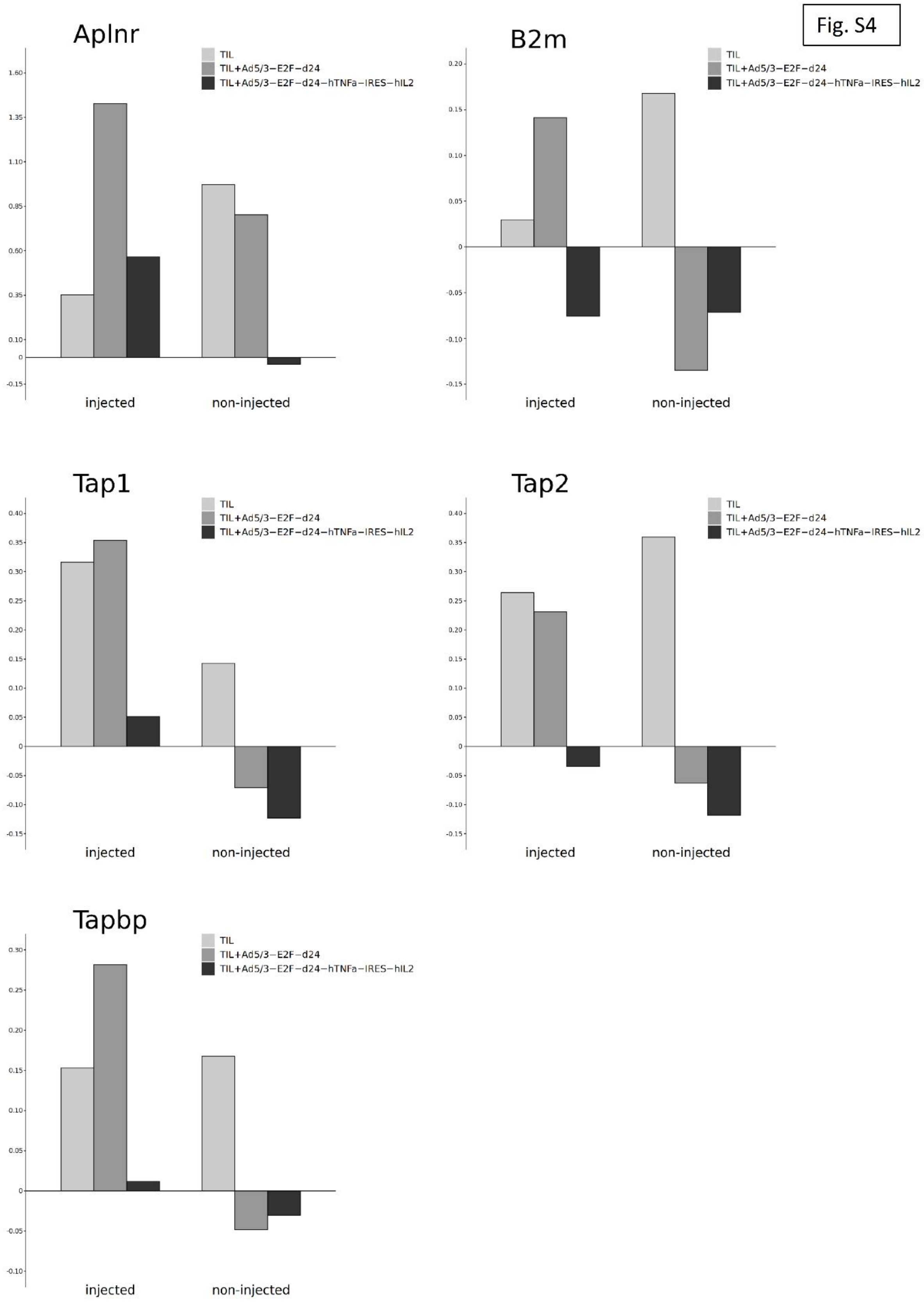
Supplementary Figure S2. The level of dendritic cells in the tumor positively correlates with the level of NK cells. The correlation was determined with Spearman's rank correlation equation (A, B). Relative gene expression levels of TGFb (C) and FoxP3 (D) in injected or non-injected tumors. Mean plus SEM is shown. Percentage of immune cells in tumors (NK cells (E, F), DCs (G, H) and M2 macrophages (I, J) in injected and non-injected tumors, respectively) did not correlate with tumor volumes.

Fig. S3



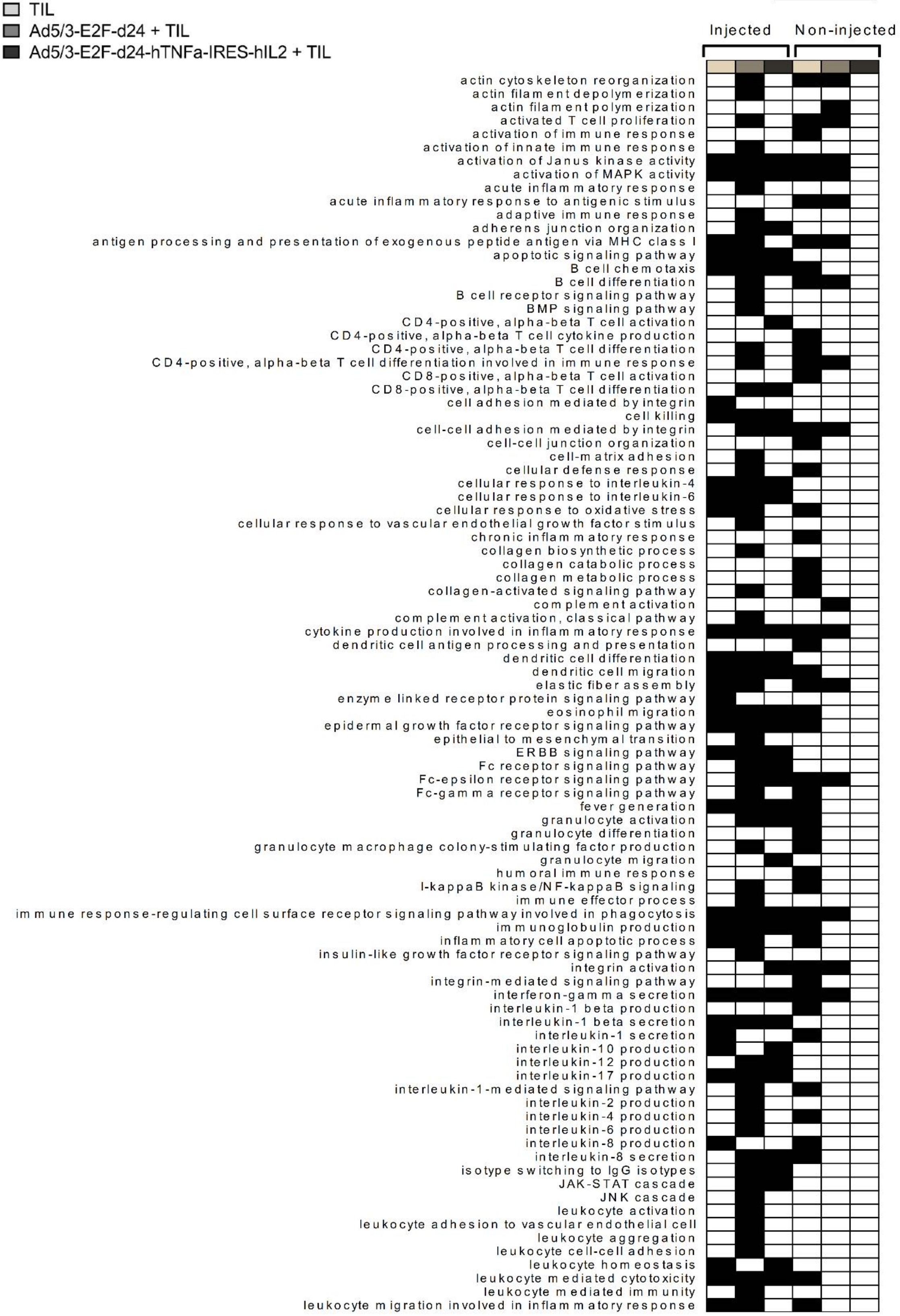
Supplementary figure S3. Number of differentially expressed genes in tumors compared with corresponding mock tumors. The number inside a restricted area describes the number of differentially expressed genes unique in a group or common between two or three groups.

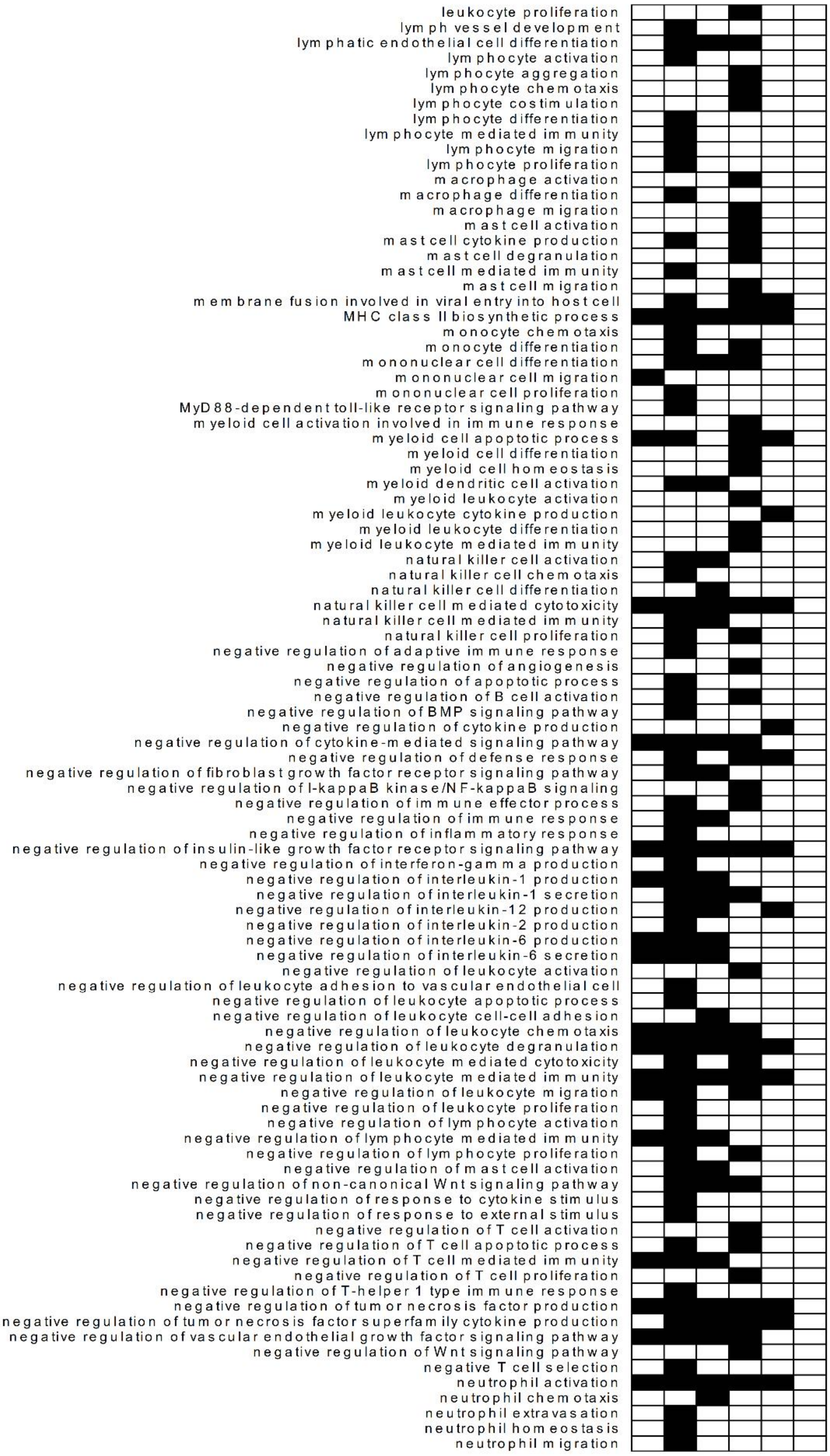
Fig. S4



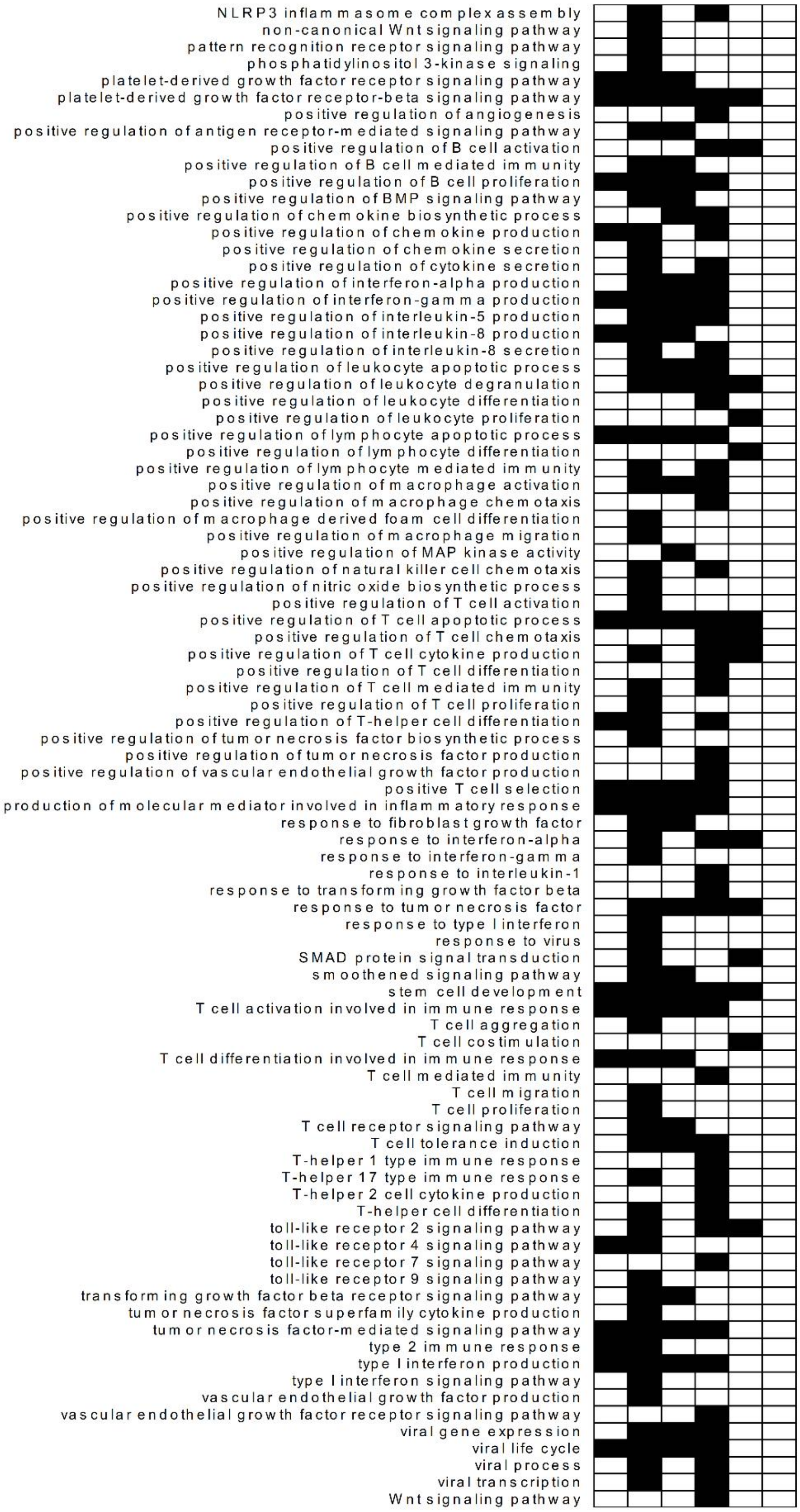
Supplementary figure S4. Change in the expression of essential genes for immunotherapy. Log2 fold-change of selected immunotherapy-related genes compared with the corresponding mock group.

Fig. S5


TIL
Ad5/3-E2F-d24 + TIL
Ad5/3-E2F-d24-hTNFa-IRES-hIL2 + TIL
Injected
Non-injected
actin cytoskeleton reorganization
actin filament depolymerization
actin filament polymerization
activated T cell proliferation
activation of immune response
activation of innate immune response
activation of Janus kinase activity
activation of MAPK activity
acute inflammatory response
acute inflammatory response to antigenic stimulus
adaptive immune response
adherens junction organization
antigen processing and presentation of exogenous peptide antigen via MHC class I
apoptotic signaling pathway
B cell chemotaxis
B cell differentiation
B cell receptor signaling pathway
BMP signaling pathway
CD4-positive, alpha-beta T cell activation
CD4-positive, alpha-beta T cell cytokine production
CD4-positive, alpha-beta T cell differentiation
CD4-positive, alpha-beta T cell differentiation involved in immune response
CD8-positive, alpha-beta T cell activation
CD8-positive, alpha-beta T cell differentiation
cell adhesion mediated by integrin
cell killing
cell-cell adhesion mediated by integrin
cell-cell junction organization
cell-matrix adhesion
cellular defense response
cellular response to interleukin-4
cellular response to interleukin-6
cellular response to oxidative stress
cellular response to vascular endothelial growth factor stimulus
chronic inflammatory response
collagen biosynthetic process
collagen catabolic process
collagen metabolic process
collagen-activated signaling pathway
complement activation
complement activation, classical pathway
cytokine production involved in inflammatory response
dendritic cell antigen processing and presentation
dendritic cell differentiation
dendritic cell migration
elastic fiber assembly
enzyme linked receptor protein signaling pathway
eosinophil migration
epidermal growth factor receptor signaling pathway
epithelial to mesenchymal transition
ERBB signaling pathway
Fc receptor signaling pathway
Fc-epsilon receptor signaling pathway
Fc-gamma receptor signaling pathway
fever generation
granulocyte activation
granulocyte differentiation
granulocyte macrophage colony-stimulating factor production
granulocyte migration
humoral immune response
I-kappaB kinase/NF-kappaB signaling
immune effector process
immune response-regulating cell surface receptor signaling pathway involved in phagocytosis
immunoglobulin production
inflammatory cell apoptotic process
insulin-like growth factor receptor signaling pathway
integrin activation
integrin-mediated signaling pathway
interferon-gamma secretion
interleukin-1 beta production
interleukin-1 beta secretion
interleukin-1 secretion
interleukin-10 production
interleukin-12 production
interleukin-17 production
interleukin-1-mediated signaling pathway
interleukin-2 production
interleukin-4 production
interleukin-6 production
interleukin-8 production
interleukin-8 secretion
isotype switching to IgG isotypes
JAK-STAT cascade
JNK cascade
leukocyte activation
leukocyte adhesion to vascular endothelial cell
leukocyte aggregation
leukocyte cell-cell adhesion
leukocyte homeostasis
leukocyte mediated cytotoxicity
leukocyte mediated immunity
leukocyte migration involved in inflammatory response

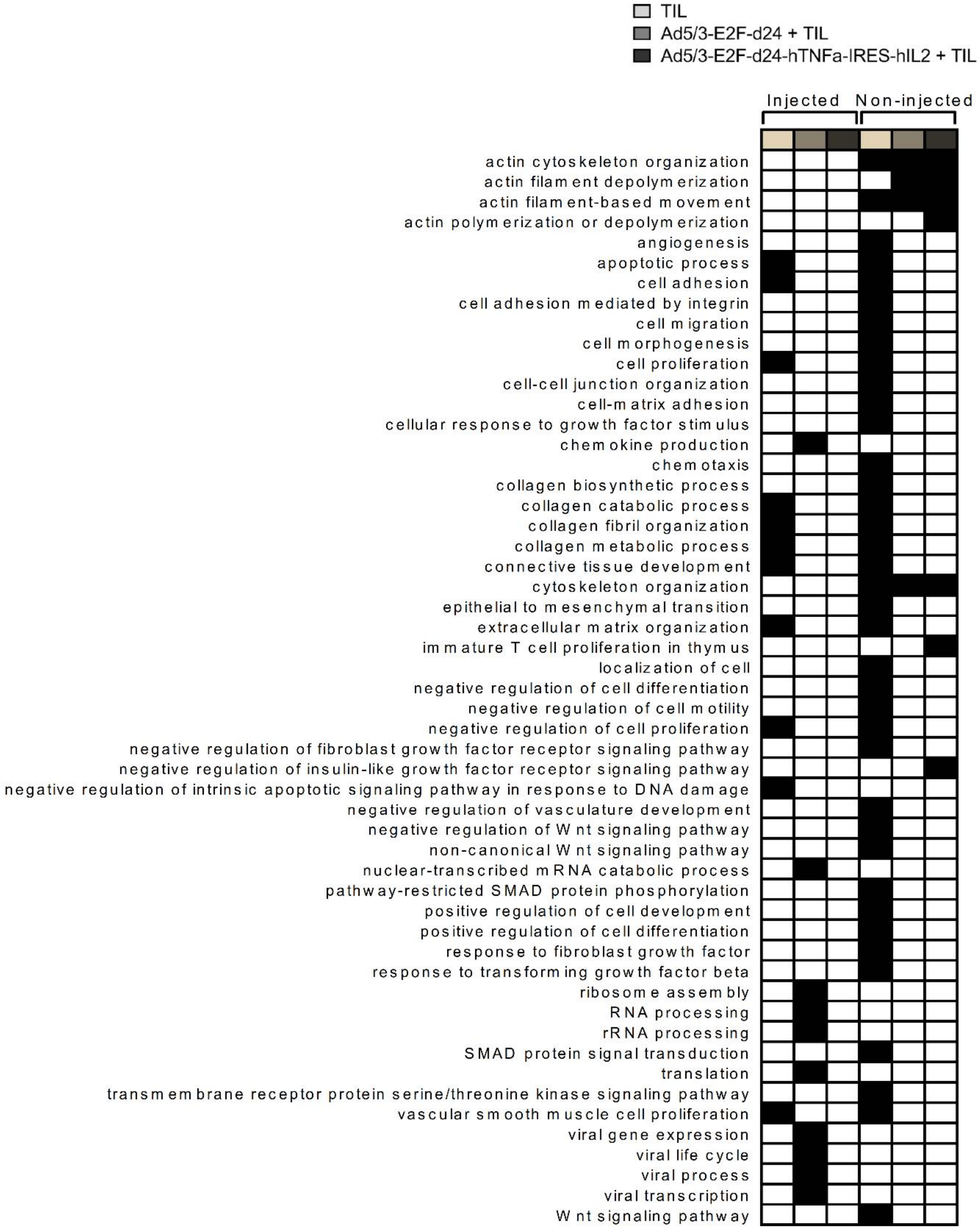


leukocyte proliferation	□	□	□	■	□	□
lymph vessel development	□	■	□	□	□	□
lymphatic endothelial cell differentiation	□	■	■	■	□	□
lymphocyte activation	□	■	□	□	□	□
lymphocyte aggregation	□	□	□	■	□	□
lymphocyte chemotaxis	□	□	□	■	□	□
lymphocyte costimulation	□	□	□	■	□	□
lymphocyte differentiation	□	■	□	□	□	□
lymphocyte mediated immunity	□	■	□	□	□	□
lymphocyte migration	□	■	□	□	□	□
lymphocyte proliferation	□	■	□	□	□	□
macrophage activation	□	□	□	■	□	□
macrophage differentiation	□	■	□	□	□	□
macrophage migration	□	□	□	■	□	□
mast cell activation	□	□	□	■	□	□
mast cell cytokine production	□	■	□	■	□	□
mast cell degranulation	□	□	□	■	□	□
mast cell mediated immunity	□	■	□	□	□	□
mast cell migration	□	□	□	■	□	□
membrane fusion involved in viral entry into host cell	□	■	□	■	■	□
MHC class II biosynthetic process	■	■	■	■	■	□
monocyte chemotaxis	□	■	□	□	□	□
monocyte differentiation	□	■	□	■	□	□
mononuclear cell differentiation	□	■	■	■	□	□
mononuclear cell migration	■	□	□	□	□	□
mononuclear cell proliferation	□	■	□	□	□	□
MyD88-dependent toll-like receptor signaling pathway	□	■	□	□	□	□
myeloid cell activation involved in immune response	□	□	□	■	□	□
myeloid cell apoptotic process	■	■	□	■	■	□
myeloid cell differentiation	□	□	□	■	□	□
myeloid cell homeostasis	□	□	□	■	□	□
myeloid dendritic cell activation	□	■	■	□	□	□
myeloid leukocyte activation	□	□	□	■	□	□
myeloid leukocyte cytokine production	□	□	□	□	■	□
myeloid leukocyte differentiation	□	□	□	■	□	□
myeloid leukocyte mediated immunity	□	□	□	■	□	□
natural killer cell activation	□	■	■	□	□	□
natural killer cell chemotaxis	□	■	□	□	□	□
natural killer cell differentiation	□	□	■	□	□	□
natural killer cell mediated cytotoxicity	■	■	■	■	■	□
natural killer cell mediated immunity	□	■	■	□	□	□
natural killer cell proliferation	□	■	□	■	□	□
negative regulation of adaptive immune response	□	■	□	□	□	□
negative regulation of angiogenesis	□	□	□	■	□	□
negative regulation of apoptotic process	□	■	□	□	□	□
negative regulation of B cell activation	□	■	□	■	□	□
negative regulation of BMP signaling pathway	□	■	□	□	□	□
negative regulation of cytokine production	□	□	□	□	■	□
negative regulation of cytokine-mediated signaling pathway	■	■	■	■	□	□
negative regulation of defense response	□	■	□	■	■	□
negative regulation of fibroblast growth factor receptor signaling pathway	□	■	■	□	□	□
negative regulation of I-kappaB kinase/NF-kappaB signaling	□	□	□	■	□	□
negative regulation of immune effector process	□	■	□	■	□	□
negative regulation of immune response	□	■	■	□	□	□
negative regulation of inflammatory response	□	■	□	□	□	□
negative regulation of insulin-like growth factor receptor signaling pathway	■	■	■	■	■	□
negative regulation of interferon-gamma production	□	■	□	□	□	□
negative regulation of interleukin-1 production	■	■	■	□	□	□
negative regulation of interleukin-1 secretion	□	■	■	■	□	□
negative regulation of interleukin-12 production	□	■	■	□	■	□
negative regulation of interleukin-2 production	□	■	□	□	□	□
negative regulation of interleukin-6 production	■	■	■	□	□	□
negative regulation of interleukin-6 secretion	■	■	■	□	□	□
negative regulation of leukocyte activation	□	□	□	■	□	□
negative regulation of leukocyte adhesion to vascular endothelial cell	□	■	□	□	□	□
negative regulation of leukocyte apoptotic process	□	■	□	□	□	□
negative regulation of leukocyte cell-cell adhesion	□	□	■	□	□	□
negative regulation of leukocyte chemotaxis	■	■	■	■	□	□
negative regulation of leukocyte degranulation	■	■	■	■	■	□
negative regulation of leukocyte mediated cytotoxicity	□	■	□	■	□	□
negative regulation of leukocyte mediated immunity	■	■	■	■	■	□
negative regulation of leukocyte migration	■	■	□	■	□	□
negative regulation of leukocyte proliferation	□	■	□	□	□	□
negative regulation of lymphocyte activation	□	■	□	□	□	□
negative regulation of lymphocyte mediated immunity	■	■	■	□	□	□
negative regulation of lymphocyte proliferation	□	■	□	■	□	□
negative regulation of mast cell activation	□	■	■	□	□	□
negative regulation of non-canonical Wnt signaling pathway	□	■	■	■	□	□
negative regulation of response to cytokine stimulus	□	■	□	□	□	□
negative regulation of response to external stimulus	□	■	□	□	□	□
negative regulation of T cell activation	□	□	□	■	□	□
negative regulation of T cell apoptotic process	□	■	□	■	□	□
negative regulation of T cell mediated immunity	■	■	■	□	□	□
negative regulation of T cell proliferation	□	□	□	■	□	□
negative regulation of T-helper 1 type immune response	□	■	□	□	□	□
negative regulation of tumor necrosis factor production	■	■	■	■	■	□
negative regulation of tumor necrosis factor superfamily cytokine production	□	■	■	■	■	□
negative regulation of vascular endothelial growth factor signaling pathway	■	■	■	■	□	□
negative regulation of Wnt signaling pathway	□	□	□	■	□	□
negative T cell selection	□	■	□	□	□	□
neutrophil activation	■	■	■	■	■	□
neutrophil chemotaxis	□	□	■	□	□	□
neutrophil extravasation	□	■	□	□	□	□
neutrophil homeostasis	□	■	□	□	□	□
neutrophil migration	□	■	□	□	□	□



Supplementary figure S5. Upregulated genes are related to various processes in cells. Gene ontology analysis was performed to group the upregulated genes according to their functions. Black box indicates the treatment groups where the upregulation of the pathway was observed.

Fig. S6



	Injected			Non-injected		
	TIL	Ad5/3-E2F-d24 + TIL	Ad5/3-E2F-d24-hTNFa-IRES-hIL2 + TIL	TIL	Ad5/3-E2F-d24 + TIL	Ad5/3-E2F-d24-hTNFa-IRES-hIL2 + TIL
actin cytoskeleton organization				■	■	■
actin filament depolymerization					■	■
actin filament-based movement				■	■	■
actin polymerization or depolymerization						■
angiogenesis				■		
apoptotic process	■			■		
cell adhesion	■			■		
cell adhesion mediated by integrin				■		
cell migration				■		
cell morphogenesis				■		
cell proliferation	■			■		
cell-cell junction organization				■		
cell-matrix adhesion				■		
cellular response to growth factor stimulus				■		
chemokine production		■				
chemotaxis				■		
collagen biosynthetic process				■		
collagen catabolic process	■			■		
collagen fibril organization	■			■		
collagen metabolic process	■			■		
connective tissue development	■			■		
cytoskeleton organization				■	■	■
epithelial to mesenchymal transition				■		
extracellular matrix organization	■			■		
immature T cell proliferation in thymus						■
localization of cell				■		
negative regulation of cell differentiation				■		
negative regulation of cell motility				■		
negative regulation of cell proliferation	■			■		
negative regulation of fibroblast growth factor receptor signaling pathway				■		
negative regulation of insulin-like growth factor receptor signaling pathway						■
negative regulation of intrinsic apoptotic signaling pathway in response to DNA damage	■					
negative regulation of vasculature development				■		
negative regulation of Wnt signaling pathway				■		
non-canonical Wnt signaling pathway				■		
nuclear-transcribed mRNA catabolic process		■				
pathway-restricted SMAD protein phosphorylation				■		
positive regulation of cell development				■		
positive regulation of cell differentiation				■		
response to fibroblast growth factor				■		
response to transforming growth factor beta				■		
ribosome assembly		■				
RNA processing		■				
rRNA processing		■				
SMAD protein signal transduction				■		
translation		■				
transmembrane receptor protein serine/threonine kinase signaling pathway				■		
vascular smooth muscle cell proliferation	■			■		
viral gene expression		■				
viral life cycle		■				
viral process		■				
viral transcription		■				
Wnt signaling pathway				■		

Supplementary figure S6. Downregulated genes are related to various processes in cells. Gene ontology analysis was performed to group the downregulated genes according to their functions. Black box indicates the treatment groups where the downregulation of the pathway was observed.

Supplementary Table S1. Saline injection induces changes in immunologically relevant gene sets. Gene ontology classification was performed against human genome for human orthologs. Most relevant gene groups are shown for both up- and downregulated genes.

UPREGULATED

Geneset	Description	FDR	Genes
GO:0009617	response to bacterium	0.001884	ADM; CSF3; HPGD; LCN2; S100A8; S100A9; CXCL5; SFTPD; TNF; PGLYRP1
GO:0006955	immune response	0.00336	ADM; CSF3; CFD; LCN2; ENPP3; PIGR; PLSCR1; IL20RB; S100A8; S100A9; CXCL5; SFTPD; TNF; C3; PGLYRP1
GO:0051707	response to other organism	0.00355	ADM; CSF3; HPGD; LCN2; PLSCR1; S100A8; S100A9; CXCL5; SFTPD; TNF; PGLYRP1
GO:0043207	response to external biotic stimulus	0.00355	ADM; CSF3; HPGD; LCN2; PLSCR1; S100A8; S100A9; CXCL5; SFTPD; TNF; PGLYRP1
GO:0009607	response to biotic stimulus	0.004028	ADM; CSF3; HPGD; LCN2; PLSCR1; S100A8; S100A9; CXCL5; SFTPD; TNF; PGLYRP1
GO:0042592	homeostatic process	0.004028	ADM; CP; FGF12; GCK; HCAR2; LCN2; SLC26A4; PIGR; IL20RB; S100A8; S100A9; SFTPD; SLC9A3; TNF; NAPSA
GO:0052547	regulation of peptidase activity	0.004281	WFDC2; PI16; FETUB; S100A8; S100A9; SFRP2; TNF; C3
GO:0002682	regulation of immune system process	0.00633	CSF3; CFD; DPP4; HCAR2; PIGR; PLSCR1; IL20RB; CXCL5; SFTPD; BMP5; TNF; C3; PGLYRP1
GO:0051050	positive regulation of transport	0.006421	CSF3; FGF12; GCK; EHD3; HCAR2; S100A8; S100A9; SFRP2; SFTPD; TNF; C3
GO:0032496	response to lipopolysaccharide	0.006421	ADM; CSF3; HPGD; LCN2; S100A8; CXCL5; TNF
GO:0002237	response to molecule of bacterial origin	0.007698	ADM; CSF3; HPGD; LCN2; S100A8; CXCL5; TNF
GO:0042742	defense response to bacterium	0.009877	ADM; S100A8; S100A9; SFTPD; TNF; PGLYRP1
GO:0002526	acute inflammatory response	0.010866	PLSCR1; IL20RB; S100A8; TNF; C3
GO:0002861	regulation of inflammatory response to antigenic stimulus	0.010866	IL20RB; TNF; C3
GO:0006952	defense response	0.012188	ADM; CFD; DPP4; LCN2; PLSCR1; IL20RB; S100A8; S100A9; CXCL5; SFTPD; TNF; C3; PGLYRP1
GO:0052548	regulation of endopeptidase activity	0.013068	WFDC2; FETUB; S100A8; S100A9; SFRP2; TNF; C3
GO:0048878	chemical homeostasis	0.01554	ADM; CP; FGF12; GCK; LCN2; SLC26A4; S100A8; S100A9; SFTPD; SLC9A3; NAPSA
GO:0046916	cellular transition metal ion homeostasis	0.024977	CP; LCN2; S100A8; S100A9
GO:0050832	defense response to fungus	0.029304	ADM; S100A8; S100A9
GO:0050727	regulation of inflammatory response	0.035014	IL20RB; S100A8; S100A9; TNF; C3; PGLYRP1
GO:0098542	defense response to other organism	0.035375	ADM; PLSCR1; S100A8; S100A9; SFTPD; TNF; PGLYRP1
GO:0002437	inflammatory response to antigenic stimulus	0.048265	IL20RB; TNF; C3

GO:0006954	inflammatory response	0.048265	PLSCR1; IL20RB; S100A8; S100A9; CXCL5; TNF; C3; PGLYRP1
GO:0050729	positive regulation of inflammatory response	0.048265	S100A8; S100A9; TNF; C3
GO:0055076	transition metal ion homeostasis	0.048265	CP; LCN2; S100A8; S100A9
GO:0009605	response to external stimulus	0.048265	ADM; CSF3; HPGD; LCN2; PLSCR1; IL20RB; S100A8; S100A9; CXCL5; SFRP2; SFTPD; TNF; C3; PGLYRP1
GO:0002883	regulation of hypersensitivity	0.048265	IL20RB; C3
GO:0043129	surfactant homeostasis	0.048265	SFTPD; NAPSA
GO:0050766	positive regulation of phagocytosis	0.0485530	SFTPD; TNF; C3

DOWNREGULATED

Geneset	**Description**	**FDR**	**Genes**
GO:0030048	actin filament-based movement	0	DES; MYBPC1; MYH3; MYH8; MYL1; MYL2; MYL3; NEB; ATP1A2; ACTA1; SCN5A; ACTC1; TMOD1; TNNC2; TNNC1; TNNI1; TNNT1; TNNT2; TNNT3; TPM2; TTN; CACNA2D1; TCAP; CAV3; ACTN2
GO:0007010	cytoskeleton organization	1.02E-11	KLHL41; CAP2; NES; CORO1A; LDB3; ADD2; XIRP2; CRYAB; XIRP1; DES; SYNPO2; FGD2; ANKRD1; PDLIM3; ANK1; KIT; MEF2C; LMOD2; MYH3; MYL2; NEB; MYOZ2; PFN2; PKP1; WNT4; LMOD3; PROX1; TRIM54; ACTA1; CCL11; CCL21; SPTB; ACTC1; TMOD1; TNNT2; TPM2; TTN; SYNPO2L; CSRP3; OBSCN; CASQ1; CASQ2; MYPN; GPR65; TCAP; CAV3; ACTN2; NEXN
GO:0007015	actin filament organization	6.42E-10	CAP2; CORO1A; ADD2; SYNPO2; PDLIM3; LMOD2; PFN2; WNT4; LMOD3; PROX1; ACTA1; CCL11; CCL21; SPTB; ACTC1; TMOD1; TNNT2; TPM2; TTN; SYNPO2L; GPR65; TCAP; CAV3; ACTN2
GO:0008015	blood circulation	3.00E-09	DES; EPHX2; F5; HSPB7; HRC; CXCL10; AR; KCNJ11; MYL1; MYL2; MYL3; ATP1A2; RYR1; SCN5A; SLC8A1; ACTC1; TNNC1; TNNI1; TNNT2; TTN; CACNA1S; CACNA2D1; CACNG1; CSRP3; CASQ1; CASQ2; TCAP; CAV3
GO:0051495	positive regulation of cytoskeleton organization	3.78E-05	NES; CORO1A; SYNPO2; LMOD2; PFN2; WNT4; PROX1; CCL11; CCL21; SYNPO2L; GPR65; CAV3; ACTN2
GO:0030335	positive regulation of cell migration	5.54E-04	CORO1A; FLT4; DAPK2; HSPB1; CXCL10; ITGA4; KIT; PGF; PROX1; RELN; ACKR3; CCL11; CCL21; SLC8A1; THBS4; WNT7A; CXCL14
GO:0051494	negative regulation of cytoskeleton organization	8.31E-04	CORO1A; ADD2; LMOD2; PFN2; LMOD3; TRIM54; SPTB; TMOD1; CAV3
GO:0008154	actin polymerization or depolymerization	0.0010916	CAP2; CORO1A; ADD2; LMOD2; PFN2; LMOD3; CCL11; CCL21; SPTB; TMOD1; ACTN2
GO:0090136	epithelial cell-cell adhesion	0.0014263	CYP1B1; KIT; NOV; THBS4
GO:0006887	exocytosis	0.0018909	CPLX2; CORO1A; CTSW; F5; MMRN1; ANK1; KIT; TRIM72; PFN2; SERPINA1; RAB27A; TIMP3; TTN; ZAP70; ACTN2; SYTL3

GO:0030837	negative regulation of actin filament polymerization	0.0020073	ADD2; LMOD2; PFN2; LMOD3; SPTB; TMOD1
GO:0030217	T cell differentiation	0.0026635	IHH; KIT; LCK; WNT4; SATB1; SPN; ZAP70; EOMES; FZD8; CD3E; CD8A
GO:0045321	leukocyte activation	0.0033047	IKZF1; CPLX2; CORO1A; SH2D1B; IHH; ITGA4; KIT; LCK; MEF2C; WNT4; RAB27A; SATB1; CCL21; SPN; ZAP70; TNFAIP8L2; EOMES; FZD8; CD3E; CD8A; ITM2A; CD40
GO:0051693	actin filament capping	0.0033195	ADD2; LMOD2; LMOD3; SPTB; TMOD1
GO:0002521	leukocyte differentiation	0.0069359	IKZF1; IHH; ITGA4; KIT; LCK; MEF2C; WNT4; FAM20C; SATB1; SPN; ZAP70; EOMES; FZD8; CD3E; CD8A; ITM2A
GO:0002551	mast cell chemotaxis	0.0075544	KIT; PGF; CCL11
GO:0050900	leukocyte migration	0.0076527	CORO1A; DAPK2; CXCL10; ITGA4; KIT; LCK; NOV; PGF; CCL11; CCL21; SPN; THBS4; ZAP70; CXCL14
GO:0008284	positive regulation of cell proliferation	0.0084545	NES; CORO1A; FLT4; IHH; CXCL10; AR; KIT; MEF2C; PGF; PROX1; CLEC11A; SCN5A; CCL11; ST8SIA1; SPN; TGM2; THBS4; WNT7A; ZAP70; CAV3; ALDH1A2; CD3E; CD40
GO:0007159	leukocyte cell-cell adhesion	0.0099669	CORO1A; IHH; ITGA4; KIT; LCK; WNT4; RAB27A; SATB1; CCL21; SPN; ZAP70; TNFAIP8L2; EOMES; FZD8; CD3E; CD8A
GO:0001568	blood vessel development	0.0101496	CSPG4; CYP1B1; FLT4; HSPB1; CXCL10; MEF2C; NOV; PGF; WNT4; PROX1; ACKR3; CCL11; THBS4; C6; WNT7A; WT1; FZD8; ALDH1A2
GO:0042110	T cell activation	0.0120126	CORO1A; IHH; KIT; LCK; WNT4; RAB27A; SATB1; CCL21; SPN; ZAP70; TNFAIP8L2; EOMES; FZD8; CD3E; CD8A
GO:0043383	negative T cell selection chemotaxis	0.0121188	SPN; ZAP70; CD3E
GO:0006935	positive regulation of chemotaxis	0.0132437	CORO1A; DAPK2; HSPB1; CXCL10; KIT; MATN2; NOV; PGF; RELN; ACKR3; CCL11; CCL21; SPN; SPTB; THBS4; BOC; CXCL14
GO:0050921	positive regulation of intracellular signal transduction	0.0200072	DAPK2; HSPB1; CXCL10; PGF; CCL21; THBS4; CXCL14
GO:1902533	myeloid leukocyte migration	0.0208825	ABRA; CSPG4; CYP1B1; FGD2; FLT4; ANKRD1; LMCD1; CXCL10; AR; KIT; LCK; RELN; ACKR3; CCL11; CCL21; TGM2; WNT7A; ZAP70; FZD8; GPR65; CD3E; CD8A; CD40
GO:0097529	insulin-like growth factor receptor	0.0221190	DAPK2; CXCL10; KIT; NOV; PGF; CCL11; CCL21; THBS4
GO:0048009	signaling pathway	0.0275824	GRB10; AR; TRIM72; CILP
GO:0000165	MAPK cascade	0.0277032	CRYAB; CSPG4; FGD2; FLT4; GFRA2; AR; KIT; MEF2C; ACKR3; NDRG2; CCL11; CCL21; SPTB; TIMP3; WNT7A; DUSP26; CAMK2A; CAMK2B; FZD8; CAV3; ACTN2; CD40
GO:0072678	T cell migration	0.0318762	CXCL10; ITGA4; CCL21; ZAP70

GO:0043299	leukocyte degranulation	0.0347462	CPLX2; CORO1A; KIT; RAB27A; ZAP70
GO:0012501	programmed cell death	0.0364148	NES; CORO1A; CRYAB; CYP1B1; EEF1A2; FGD2; FLT4; DAPK2; ANKRD2; ANKRD1; BIN1; HSPB1; IHH; IRF5; AR; KIT; LCK; MEF2C; PEG3; WNT4; ACKR3; SATB1; CCL21; SPN; ACTC1; TGM2; TIMP3; UCP2; WNT7A; WT1; CAMK2A; OBSCN; GPR65; ACTN2; ALDH1A2; CD3E; CD40
GO:0002520	immune system development	0.0419547	IKZF1; ADD2; GPR171; IHH; ITGA4; KIT; LCK; MB; MEF2C; WNT4; FAM20C; SATB1; SPN; ZAP70; EOMES; FZD8; CD3E; CD8A; ITM2A; CD40
GO:0001525	angiogenesis	0.0433403	CSPG4; CYP1B1; FLT4; HSPB1; CXCL10; NOV; PGF; ACKR3; CCL11; THBS4; C6; WNT7A; FZD8
GO:0070661	leukocyte proliferation	0.0444250	CORO1A; IHH; KIT; MEF2C; WNT4; SATB1; SPN; ZAP70; CD3E; CD40
GO:0006955	immune response	0.0457328	IL18BP; PRG4; CPLX2; CORO1A; SH2D1B; CTSW; FCGR3A; MYLPF; CXCL10; IRF5; ITGA4; KIT; LCK; MEF2C; RAB27A; CCL11; CCL21; SPN; C6; C7; ZAP70; TNFAIP8L2; CAMK2A; CAMK2B; EOMES; GPR65; CD3E; CD8A; ITM2A; CXCL14; CD40

Supplementary Table S2. Injection with Ad5/3-E2F-d24-hTNFa-IRES-hIL2 induces a gene-expression profile unique for both injected and non-injected tumors. Significantly ($p<0.05$) upregulated or downregulated genes found both in injected and non-injected tumors only in the group treated with Ad5/3-E2F-d24-hTNFa-IRES-hIL2.

Gene	Name	Function
UPREGULATED		
Avil	Advillin	Actin regulatory protein
Cebpg	CCAAT/enhancer-binding protein gamma	Suppresses senescence and inflammatory gene expression by heterodimerizing with C/EBPβ
Csf3	Colony Stimulating Factor 3	Production, differentiation, and function of granulocytes
Cxcl5 (LOC101835923)	Alveolar macrophage chemotactic factor	Chemokine induced by TNFa
Gnb3	Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-3	G protein, cell signaling
Hapln1	Hyaluronan and proteoglycan link protein 1	Stabilizes proteoglycan monomers
Ier3	Radiation-inducible immediate-early gene IEX-1	Induced by cytokines and viral infection Induces TNFa-stimulated apoptosis Inhibits T cell apoptosis
LOC101834995	Ribosomal protein S6 kinase beta-1 pseudogene	
Lrmp	Lymphoid-restricted membrane protein	Delivers peptides to major histocompatibility complex class I molecules
Pdk1	Pyruvate dehydrogenase lipoamide kinase isozyme 1, mitochondrial	General metabolism
Ptprm	Receptor-type tyrosine-protein phosphatase mu	Regulates cell growth, differentiation, mitotic cycle, and oncogenic transformation
Rev1	DNA repair protein REV1	Involved in DNA damage reparation
Rgs13	Regulator of G-protein signaling 13	Regulates expansion and differentiation of naive B cells
Rnase2	Eosinophil-derived neurotoxin	Non-secretory ribonuclease, chemotactic for dendritic cells
Sult1e1	Estrogen sulfotransferase	Regulates inflammatory response
Trpm5	Transient receptor potential cation channel subfamily M member 5	Ion channel
DOWNREGULATED		
Bscl2	Seipin	Involved in adipogenesis, lipid droplet homeostasis and cellular triglyceride lipolysis
Camsap3	Calmodulin-regulated spectrin-associated protein 3	Microtubule minus-end binding protein
Card14	Caspase recruitment domain-containing protein 14	Forms molecular scaffolds for the assembly of multiprotein complexes

Desi1	Desumoylating Isopeptidase 1	Deconjugates substrates from SUMO proteins
Jak3	Janus kinase 3	Expressed in T cells and NK cells, mediates IL2R signaling
Khsrp	Far upstream element-binding protein 2	RNA-binding protein that stabilizes for example cytokine mRNAs
Lap3	Leucine Aminopeptidase 3	Functions in intracellular protein processing.
LOC101824821	Guanylate-binding protein 2-like	
LOC101825087	Guanylate-binding protein 4-like	
LOC101826062	H-2 class I histocompatibility antigen, alpha chain-like	
LOC101828355	H-2 class II histocompatibility antigen, E-U alpha chain	Antigen presentation
LOC101834191	Interferon-inducible GTPase 1-like	
LOC101834868	Rano class II histocompatibility antigen, A beta chain-like	
LOC101835956	Chromosome unknown C19orf66 homolog	
LOC101837226	Immunity-related GTPase family M protein 1-like	
LOC101838705	Chromosome unknown C16orf92 homolog	
LOC101844521	Class II histocompatibility antigen, M beta 1 chain	Antigen presentation
LOC101844787	Class II histocompatibility antigen, M alpha chain	Antigen presentation
LOC106022816	Uncharacterized	
Rpl7l1	Ribosomal protein L7 like 1	mRNA translation
Smg5	SMG5, Nonsense Mediated MRNA Decay Factor	Functions in mRNA degradation
Uhrf1	Ubiquitin-like, containing PHD and RING finger domains, 1	Functions in p53-dependent DNA damage checkpoint
Wars	Tryptophanyl-tRNA synthetase, cytoplasmic	Catalyzes the aminoacylation of tRNA with tryptophan and is induced by interferons