

## SUPPLEMENTARY TABLES

Supplementary table 1: Antibody panels for phenotype and reactivity testing.

Antibodies used for phenotype and anti-tumor reactivity testing. \*used for intracellular staining.

Panel	Antigen	Flouochrome	Clone	Company
Pheno1	CD57	FITC	NK-1	BD
Pheno1	CD28	APC	CD28.2	BD
Pheno1	CD27	BV711	L123	BD
Pheno1	CCR7	BV421	G043H7	Biolegend
Pheno1	CD45RA	BV650	HI100	BD
Pheno1+2	CD103	PE	Ber-ACT8	BD
Pheno1+2	CD39	PE-Cy7	eBioA1(A1)	Invitrogen
Pheno1+2	CD56	BV605	NCAM16.2	BD
Pheno1+2	CD8	APC-R700	RPA-T8	BD
Pheno1+2	CD4	BV510	SK3	BD
Pheno1+2	CD3	BV786	OKT3	BD
Pheno1+2	PD-1	PE-Dazzle594	EH12.2H7	Biolegend
Pheno2	LAG3	FITC	11C3C65	Biolegend
Pheno2	CD137	APC	4B4-1	Biolegend
Pheno2	BTLA	BV421	J168-540	BD
Pheno2	TIGIT	BV650	741182	BD
Pheno2	TIM3	BV711	7D3	BD
Reactivity*	CD137	PE	4B4-1	BD
Reactivity	CD56	BV510	NCAM16.2	BD
Reactivity	CD4	BV711	SK3	BD
Reactivity	CD3	PE-CF594	UCHT1	BD
Reactivity	CD8	Qdot 605	3B5	Invitrogen
Reactivity*	IFN $\gamma$	PE-Cy7	B27	BD
Reactivity*	TNF	APC	MAb11	BD
Reactivity	CD56	PE	NCAM16.2	BD

Supplementary table 2: Overview of all successful *in vitro* TIL expansions and clinical efficacy. Patient and resected tumor characteristics of patients where a young TIL product could be established. Duration of the initial *in vitro* expansion (Exp time) is shown in days. For patients were treated with the REP TILs, the fold expansion (Fold exp) during the rapid expansion protocol (REP), the total number of REP TILs, and the clinical response to therapy is also listed. TMB: Tumor mutational burden; BOR: Best overall response; PRS: Progression-free survival.

ID	Diagnosis	Metastasis	Exp. time	Fold exp.	REP TILs (10e9)	CD4/CD8 (%)	TMB (Mut./Mb)	BOR	PFS (days)	OS (days)
1	Colon cancer	Peritoneum	44	265	5.3	92.3/5.4	7.1	SD	96	119
2	Colon cancer	Lung	18	6300	126.0	48.8/45.5	4.7	SD	31	63
3	Colon cancer	Lung	18	2780	55.6	74.8/26.3	11	SD	190	227
4	Colon cancer	Lung	19	3460	69.2	59.4/32.6	7.1	SD	48	110
5	Colon cancer	Pleura	27	1645	32.9	95.8/1.4	7.1	PD	50	83
6	Rectal cancer	Lung	20	4380	87.6	4.8/76.8	7.2	SD	168	517
7	Rectal cancer	Lung	26	3620	72.4	89.4/5.9	10.2	SD	201	787
8	Cholangiocarcinoma	Lung	15	4520	90.4	87.0/11.1	3.1	PR	199	870
9	Cholangiocarcinoma	Lung	20	4420	88.4	92.0/6.1	1.6	SD	26	50
10	Cholangiocarcinoma	Subcutis (thorax)	23	2840	56.8	25.3/61.6	3.9	SD	134	512
11	Melanoma (skin)	Adrenal gland	29	2550	51.0	96.4/2.5	5.5	PD	47	179
12	Melanoma (skin)	Subcutis (thorax)	20	2610	78.3	20.2/65.5	9.4	PD	12	77
13	Melanoma (choridea)	Lung	28	3060	61.2	40.5/54.2	2.4	SD	172	412
14	Melanoma (choridea)	Pleura	36	3280	65.6	2.0/4.1	1.6	SD	44	772
15	Melanoma (choridea)	Liver	26	2660	53.2	82.4/25.2	n/a	SD	211	393
16	Melanoma (choridea)	Liver	19	3860	77.2	59.4/40.8	0.8	SD	84	142
17	Leiomyosarcoma	Lung	34	1740	34.8	45.7/43.8	2.4	SD/uPR	87	251
18	Leiomyosarcoma	Subcutis (thorax)	36	2320	46.4	62.3/20.2	0.8	SD	86	540
19	Oropharyngeal cancer (HNSCC)	Lung	19	4748	109.2	22.9/65.6	8.6	PR	90	370
20	Cervix cancer	Lung	19	4960	99.2	81.8/22.7	11.8	SD	89	218
21	Myoepithelial carcinoma	LN (neck)	29	2568	48.8	82.5/22.9	0.8	SD	93	521
22	Adrenocorticocarcinoma	LN (neck)	23	3170	63.4	45.4/48.1	16.5	SD	104	122
23	Non-small cell lung cancer	Lung	25	2600	52.0	53.6/28.8	0.8	SD	85	159
24	Rhinopharyngeal cancer	Lung	19	2760	55.2	49.2/36.1	8.7	SD/uPR	155	448
25	Thyroid cancer	Liver	27	1990	39.8	64.8/48.6	5.50	PD	51	71
26	Melanoma (mucosal)	Lung	19	-	-					
27	Colon cancer	Liver	25	-	-					
28	Breast cancer	Skin	24	-	-					
29	Breast cancer	Skin (thorax)	23	-	-					
30	Pancreatic cancer	Liver	31	-	-					
Median			24	2840	61.2				89	227

## SUPPLEMENTARY FIGURES

Supplementary Figure 1: *In vitro* anti-tumor reactivity of all treated patients.

The expanded TILs (REP TILs) were tested for anti-tumor reactivity with flow cytometry after co-culture with unstimulated autologous tumor cells. REP TILs with expression of at least two markers (TNF $\alpha$ , IFN $\gamma$ , CD107a or CD137) in than 0.5% of all CD3 $^{+}$  cells were considered anti-tumor reactive (indicated by dotted line). Five patients had high background reactivity of REP TILs (#14) or the tumor derived material (#4, #15, #16, #23) so that anti-tumor specific reactivity of the REP TILs could not be determined. ACC: Adenocorticocarcinoma; CRC: Colorectal cancer; CC: Cholangiocarcinoma; HNSCC: Head-and-neck squamous cell carcinoma; MM: Malignant Melanoma; MEC: Myoepithelial carcinoma; NSCLC: Non-small cell lung cancer. \*Patients in the disease control group.

