

Supplementary Table 1: GSEA full report for RNA-seq profiling of *Ptpn2*-deleted and control Slamf6+ and Tim-3+ cells 8 days post LCMV Clone 13 infection

Tim3+ Control vs Ptpn2 KO Up

NAME	GS follo	GS DETAILS	SIZE	ES	NES	NOM p-val	FDR q-val	FWER p-val	RANK AT M/	LEADING EDGE
LCMVSLAMF	LCMVSLAMF	Details ...		389	0.28616044	6.544572	0	0	0	5928 tags=56%, list=28%, signal=76%
TILSLAMF6	TILSLAMF6	Details ...		50	0.56955063	4.680985	0	0	0	4916 tags=80%, list=23%, signal=104%
LCMVSLAMF	LCMVSLAMF	Details ...		50	0.4463847	3.713713	0	0	0	4977 tags=68%, list=23%, signal=89%
HALLMARK_I	HALLMARK_I	Details ...		91	0.29304585	3.2852528	0	0	0	5931 tags=57%, list=28%, signal=79%
HALLMARK_I	HALLMARK_I	Details ...		190	0.1957981	3.1659865	0	0	0	5931 tags=47%, list=28%, signal=65%
HALLMARK_I	HALLMARK_I	Details ...		194	0.17738196	2.8173385	0	0	0	5893 tags=45%, list=28%, signal=62%
LCMVSLAMF	LCMVSLAMF	Details ...		49	0.3372496	2.7917113	0	0	0	5849 tags=61%, list=28%, signal=84%
HALLMARK_I	HALLMARK_I	Details ...		186	0.17416011	2.7801452	0	0	0	5917 tags=45%, list=28%, signal=62%
HALLMARK_I	HALLMARK_I	Details ...		159	0.15457375	2.3492877	0	0.00103048	0.013	5550 tags=42%, list=26%, signal=56%
HALLMARK_I	HALLMARK_I	Details ...		185	0.13692194	2.149696	0	0.00413276	0.057	5949 tags=42%, list=28%, signal=57%
HALLMARK_I	HALLMARK_I	Details ...		193	0.1251808	2.0251818	0.01276596	0.00821173	0.12	1984 tags=22%, list=9%, signal=24%
HALLMARK_I	HALLMARK_I	Details ...		140	0.12754337	1.7799437	0.01757813	0.03078465	0.411	5948 tags=41%, list=28%, signal=56%
HALLMARK_I	HALLMARK_I	Details ...		193	0.10830075	1.7202691	0.02217742	0.03831887	0.503	5856 tags=38%, list=28%, signal=52%
HALLMARK_I	HALLMARK_I	Details ...		47	0.21191955	1.7049017	0.03112841	0.0382978	0.527	5443 tags=47%, list=26%, signal=63%
HALLMARK_I	HALLMARK_I	Details ...		98	0.14783475	1.7018884	0.02816901	0.03641352	0.533	4670 tags=37%, list=22%, signal=47%
HALLMARK_I	HALLMARK_I	Details ...		53	0.19830494	1.6875923	0.03149606	0.03685653	0.562	5809 tags=47%, list=27%, signal=65%
HALLMARK_I	HALLMARK_I	Details ...		43	0.20198613	1.5739435	0.03933748	0.05864735	0.746	13976 tags=86%, list=66%, signal=252%
HALLMARK_I	HALLMARK_I	Details ...		198	0.09224364	1.5047085	0.06504065	0.075227	0.846	8667 tags=50%, list=41%, signal=84%
HALLMARK_I	HALLMARK_I	Details ...		34	0.16661344	1.153782	0.25298804	0.28348705	1	12692 tags=76%, list=60%, signal=190%
HALLMARK_I	HALLMARK_I	Details ...		32	0.1423903	0.9684908	0.47058824	0.47619098	1	4275 tags=34%, list=20%, signal=43%

Tim3+ Control vs Ptpn2 KO Down

NAME	GS follo	GS DETAILS	SIZE	ES	NES	NOM p-val	FDR q-val	FWER p-val	RANK AT M/	LEADING EDGE
HALLMARK_I	HALLMARK_I	Details ...		199	-0.4449561	-7.273637	0	0	0	6214 tags=73%, list=29%, signal=103%
HALLMARK_I	HALLMARK_I	Details ...		197	-0.4322701	-7.0123377	0	0	0	6207 tags=72%, list=29%, signal=101%
HALLMARK_I	HALLMARK_I	Details ...		199	-0.3728828	-5.987838	0	0	0	4957 tags=60%, list=23%, signal=78%
HALLMARK_I	HALLMARK_I	Details ...		197	-0.3640439	-5.9107423	0	0	0	6241 tags=65%, list=29%, signal=92%
LCMVSLAMF	LCMVSLAMF	Details ...		472	-0.2359997	-5.8742304	0	0	0	6207 tags=52%, list=29%, signal=72%
HALLMARK_I	HALLMARK_I	Details ...		58	-0.5186774	-4.6220136	0	0	0	5121 tags=76%, list=24%, signal=100%
HALLMARK_I	HALLMARK_I	Details ...		142	-0.3185966	-4.403866	0	0	0	5687 tags=58%, list=27%, signal=79%
HALLMARK_I	HALLMARK_I	Details ...		197	-0.2449287	-4.1947365	0	0	0	6160 tags=53%, list=29%, signal=74%
HALLMARK_I	HALLMARK_I	Details ...		195	-0.2525059	-4.101479	0	0	0	6225 tags=54%, list=29%, signal=76%
HALLMARK_I	HALLMARK_I	Details ...		109	-0.3058932	-3.7452714	0	0	0	6390 tags=61%, list=30%, signal=86%
HALLMARK_I	HALLMARK_I	Details ...		197	-0.2232918	-3.7423682	0	0	0	6184 tags=51%, list=29%, signal=72%
HALLMARK_I	HALLMARK_I	Details ...		197	-0.2134345	-3.4836075	0	0	0	5099 tags=45%, list=24%, signal=59%
HALLMARK_I	HALLMARK_I	Details ...		197	-0.1924847	-3.1713965	0	0	0	5970 tags=47%, list=28%, signal=65%
HALLMARK_I	HALLMARK_I	Details ...		196	-0.1827736	-2.9884653	0	0	0	6225 tags=47%, list=29%, signal=67%
HALLMARK_I	HALLMARK_I	Details ...		103	-0.2436015	-2.8566523	0	0	0	5774 tags=51%, list=27%, signal=70%
HALLMARK_I	HALLMARK_I	Details ...		192	-0.1757142	-2.827452	0	0	0	5588 tags=44%, list=26%, signal=59%
HALLMARK_I	HALLMARK_I	Details ...		189	-0.1664107	-2.639279	0	1.46E-04	0.002	14236 tags=84%, list=67%, signal=252%
HALLMARK_I	HALLMARK_I	Details ...		192	-0.1622775	-2.61299	0	2.15E-04	0.003	5539 tags=42%, list=26%, signal=57%
HALLMARK_I	HALLMARK_I	Details ...		156	-0.172276	-2.50076	0	3.36E-04	0.005	6164 tags=46%, list=29%, signal=65%
HALLMARK_I	HALLMARK_I	Details ...		95	-0.2122903	-2.459646	0.0020284	4.63E-04	0.007	6236 tags=51%, list=29%, signal=71%
HALLMARK_I	HALLMARK_I	Details ...		150	-0.1720723	-2.4530694	0	4.41E-04	0.007	4579 tags=39%, list=22%, signal=49%
HALLMARK_I	HALLMARK_I	Details ...		191	-0.15044	-2.4115067	0.00196078	6.33E-04	0.011	13720 tags=80%, list=65%, signal=223%
HALLMARK_I	HALLMARK_I	Details ...		194	-0.1358403	-2.212265	0	0.00232157	0.041	8299 tags=53%, list=39%, signal=86%
HALLMARK_I	HALLMARK_I	Details ...		73	-0.1888376	-1.9089836	0.01207244	0.01406277	0.239	5889 tags=47%, list=28%, signal=64%
HALLMARK_I	HALLMARK_I	Details ...		195	-0.113581	-1.8693652	0.00209205	0.01674648	0.288	8601 tags=52%, list=41%, signal=86%
HALLMARK_I	HALLMARK_I	Details ...		194	-0.1097662	-1.7698954	0.02777778	0.02688386	0.425	5348 tags=36%, list=25%, signal=48%
HALLMARK_I	HALLMARK_I	Details ...		101	-0.1498345	-1.7524316	0.02148438	0.02816335	0.456	6079 tags=44%, list=29%, signal=61%
TILSLAMF6	TILSLAMF6	Details ...		48	-0.2099456	-1.717786	0.01803607	0.03148249	0.51	6164 tags=50%, list=29%, signal=70%
HALLMARK_I	HALLMARK_I	Details ...		196	-0.1015687	-1.6552683	0.03434343	0.04102198	0.622	14209 tags=77%, list=67%, signal=231%
HALLMARK_I	HALLMARK_I	Details ...		41	-0.2194316	-1.6230398	0.04684318	0.04695536	0.689	5703 tags=49%, list=27%, signal=67%
HALLMARK_I	HALLMARK_ANGIOGENES			34	-0.2065031	-1.4399736	0.08764941	0.10130252	0.918	13097 tags=82%, list=62%, signal=215%
HALLMARK_I	HALLMARK_IL6_JAK_STAT			85	-0.1207603	-1.3108134	0.16565657	0.16738662	0.987	2940 tags=26%, list=14%, signal=30%
HALLMARK_I	HALLMARK_BILE_ACID_M			111	-0.1000802	-1.2451286	0.19438878	0.21290235	0.999	4769 tags=32%, list=22%, signal=42%
HALLMARK_I	HALLMARK_COAGULATIO			134	-0.0868446	-1.1708057	0.25604838	0.26859653	0.999	14001 tags=75%, list=66%, signal=218%
HALLMARK_I	HALLMARK_HEDGEHOG_S			33	-0.1320929	-0.90126	0.5517928	0.5878818	1	8774 tags=55%, list=41%, signal=93%
HALLMARK_I	HALLMARK_SPERMATOG			128	-0.0591442	-0.7758203	0.70841485	0.7485479	1	7206 tags=40%, list=34%, signal=60%

Slamf6+ Control vs Ptpn2 KO Up

NAME	GS follo	GS DETAILS	SIZE	ES	NES	NOM p-val	FDR q-val	FWER p-val	RANK AT M/	LEADING EDGE
LCMVSLAMF	LCMVSLAMF	Details ...		387	0.29117668	6.5643954	0	0	0	5555 tags=55%, list=26%, signal=73%
TILSLAMF6	TILSLAMF6	Details ...		50	0.49119323	3.932247	0	0	0	5301 tags=74%, list=25%, signal=98%
HALLMARK_I	HALLMARK_I	Details ...		197	0.23799965	3.8896594	0	0	0	5334 tags=49%, list=25%, signal=64%
LCMVSLAMF	LCMVSLAMF	Details ...		50	0.4510987	3.732668	0	0	0	5301 tags=70%, list=25%, signal=93%
HALLMARK_I	HALLMARK_I	Details ...		91	0.32479033	3.6290736	0	0	0	5260 tags=57%, list=25%, signal=76%
HALLMARK_I	HALLMARK_I	Details ...		191	0.20853962	3.3997116	0	0	0	5166 tags=45%, list=24%, signal=59%
HALLMARK_I	HALLMARK_I	Details ...		159	0.206051	3.0031495	0	0	0	5533 tags=47%, list=26%, signal=62%
LCMVSLAMF	LCMVSLAMF	Details ...		48	0.3270862	2.699819	0	2.28E-04	0.002	1031 tags=38%, list=5%, signal=39%
HALLMARK_I	HALLMARK_I	Details ...		192	0.15612537	2.4886885	0	6.14E-04	0.006	4782 tags=38%, list=23%, signal=49%

HALLMARK_ HALLMARK_ Details ...	194	0.14877301	2.391784	0	7.38E-04	0.008	2995	tags=29%, list=14%, signal=33%
HALLMARK_ HALLMARK_ Details ...	98	0.19934374	2.3389673	0	0.00101159	0.012	5530	tags=46%, list=26%, signal=62%
HALLMARK_ HALLMARK_ Details ...	188	0.14113162	2.2933862	0	0.00152773	0.02	5381	tags=39%, list=25%, signal=52%
TILSLAMF6_ TILSLAMF6_ Details ...	47	0.24558964	1.9925895	0.00398406	0.00959874	0.133	3376	tags=40%, list=16%, signal=48%
HALLMARK_ HALLMARK_ Details ...	193	0.12121832	1.966011	0.0101833	0.0108211	0.157	2177	tags=22%, list=10%, signal=25%
HALLMARK_ HALLMARK_ Details ...	140	0.13374984	1.8324764	0.00798403	0.0229654	0.317	2332	tags=24%, list=11%, signal=27%
HALLMARK_ HALLMARK_ Details ...	32	0.27089778	1.807768	0.01840491	0.02463438	0.349	5530	tags=53%, list=26%, signal=72%
HALLMARK_ HALLMARK_ Details ...	198	0.10513117	1.7553878	0.02615694	0.02991927	0.432	8074	tags=48%, list=38%, signal=78%
HALLMARK_ HALLMARK_ Details ...	193	0.10835493	1.7434287	0.01659751	0.03030594	0.455	5085	tags=35%, list=24%, signal=45%
HALLMARK_ HALLMARK_ Details ...	185	0.10033242	1.5886017	0.03455285	0.05817046	0.718	4654	tags=32%, list=22%, signal=41%
HALLMARK_ HALLMARK_ Details ...	134	0.11359023	1.5852399	0.05241935	0.05619652	0.724	14542	tags=80%, list=69%, signal=252%
HALLMARK_ HALLMARK_ Details ...	85	0.13901633	1.5034308	0.06734694	0.07968087	0.853	5297	tags=39%, list=25%, signal=52%
HALLMARK_ HALLMARK_ Details ...	43	0.16984719	1.2951231	0.14807302	0.18311948	0.991	14655	tags=86%, list=69%, signal=278%
HALLMARK_ HALLMARK_ Details ...	53	0.13886358	1.1993146	0.24742268	0.24961221	0.998	1063	tags=19%, list=5%, signal=20%
HALLMARK_ HALLMARK_ Details ...	41	0.14251874	1.0787202	0.35420743	0.35988128	1	4742	tags=37%, list=22%, signal=47%
HALLMARK_ HALLMARK_ Details ...	111	0.08715428	1.0593446	0.39442232	0.3677921	1	8670	tags=50%, list=41%, signal=83%

Slamf6+ Control vs Ptpn2 KO Down

NAME	GS follow GS	DETAILS	SIZE	ES	NES	NOM p-val	FDR q-val	FWER p-val	RANK AT M/	LEADING EDGE
HALLMARK_ HALLMARK_ Details ...	199	-0.5475084	-9.102268	0	0	0	0	0	5764	tags=81%, list=27%, signal=111%
HALLMARK_ HALLMARK_ Details ...	195	-0.507134	-8.504279	0	0	0	0	0	5768	tags=77%, list=27%, signal=105%
HALLMARK_ HALLMARK_ Details ...	197	-0.4589235	-7.626242	0	0	0	0	0	5754	tags=73%, list=27%, signal=99%
HALLMARK_ HALLMARK_ Details ...	197	-0.4245645	-6.7952003	0	0	0	0	0	5830	tags=70%, list=27%, signal=95%
LCMVSLAMF LCMVSLAMF Details ...	472	-0.2651805	-6.710572	0	0	0	0	0	5781	tags=53%, list=27%, signal=71%
HALLMARK_ HALLMARK_ Details ...	199	-0.4184649	-6.65191	0	0	0	0	0	5491	tags=67%, list=26%, signal=90%
HALLMARK_ HALLMARK_ Details ...	142	-0.3972701	-5.51877	0	0	0	0	0	5672	tags=66%, list=27%, signal=90%
HALLMARK_ HALLMARK_ Details ...	196	-0.3169541	-5.0484104	0	0	0	0	0	5569	tags=58%, list=26%, signal=77%
HALLMARK_ HALLMARK_ Details ...	58	-0.5576897	-5.0321164	0	0	0	0	0	4661	tags=78%, list=22%, signal=99%
HALLMARK_ HALLMARK_ Details ...	109	-0.3097798	-3.903723	0	0	0	0	0	5529	tags=57%, list=26%, signal=77%
HALLMARK_ HALLMARK_ Details ...	197	-0.2370627	-3.8048804	0	0	0	0	0	4602	tags=45%, list=22%, signal=57%
HALLMARK_ HALLMARK_ Details ...	198	-0.2263479	-3.6927087	0	0	0	0	0	5636	tags=49%, list=27%, signal=66%
HALLMARK_ HALLMARK_ Details ...	156	-0.250604	-3.677374	0	0	0	0	0	5466	tags=51%, list=26%, signal=68%
HALLMARK_ HALLMARK_ Details ...	197	-0.2229464	-3.6456904	0	0	0	0	0	5760	tags=49%, list=27%, signal=67%
HALLMARK_ HALLMARK_ Details ...	47	-0.3909107	-3.1711555	0	0	0	0	0	5718	tags=66%, list=27%, signal=90%
HALLMARK_ HALLMARK_ Details ...	103	-0.2612404	-3.084502	0	0	0	0	0	5813	tags=53%, list=27%, signal=73%
HALLMARK_ HALLMARK_ Details ...	150	-0.2037814	-2.925985	0	0	0	0	0	5042	tags=44%, list=24%, signal=57%
HALLMARK_ HALLMARK_ Details ...	101	-0.2402414	-2.806079	0	6.38E-05	0.001	0.001	5430	tags=50%, list=26%, signal=66%	
HALLMARK_ HALLMARK_ Details ...	189	-0.1663319	-2.6671908	0	6.04E-05	0.001	0.001	14573	tags=85%, list=69%, signal=270%	
HALLMARK_ HALLMARK_ Details ...	95	-0.235713	-2.6244535	0	1.75E-04	0.003	0.003	5071	tags=47%, list=24%, signal=62%	
HALLMARK_ HALLMARK_ Details ...	194	-0.1596546	-2.530621	0	1.66E-04	0.003	0.003	4627	tags=38%, list=22%, signal=48%	
HALLMARK_ HALLMARK_ Details ...	193	-0.1440488	-2.2344508	0	0.00167544	0.032	0.032	5216	tags=39%, list=25%, signal=51%	
HALLMARK_ HALLMARK_ Details ...	191	-0.1372958	-2.208034	0	0.00175483	0.034	0.034	13995	tags=80%, list=66%, signal=232%	
HALLMARK_ HALLMARK_ Details ...	194	-0.1148173	-1.8306313	0.02268431	0.01543393	0.275	0.275	4804	tags=34%, list=23%, signal=44%	
HALLMARK_ HALLMARK_ Details ...	196	-0.1062101	-1.7199013	0.02240326	0.02820627	0.471	0.471	14543	tags=79%, list=69%, signal=249%	
HALLMARK_ HALLMARK_ Details ...	129	-0.1184588	-1.5543147	0.06300813	0.06335021	0.788	0.788	3423	tags=28%, list=16%, signal=33%	
HALLMARK_ HALLMARK_ Details ...	34	-0.2188237	-1.475996	0.0804829	0.08661995	0.884	0.884	12211	tags=79%, list=58%, signal=187%	
HALLMARK_ HALLMARK_ Details ...	73	-0.1401494	-1.408378	0.09856263	0.11299629	0.958	0.958	4012	tags=33%, list=19%, signal=40%	
HALLMARK_ HALLMARK_ Details ...	195	-0.0852535	-1.3531938	0.13692947	0.13660948	0.977	0.977	4627	tags=30%, list=22%, signal=38%	
HALLMARK_ HALLMARK_ Details ...	34	-0.1674472	-1.1596053	0.28663793	0.27665764	1	1	13299	tags=79%, list=63%, signal=213%	
HALLMARK_ HALLMARK_HEDGEHOG_S	33	-0.137909	-0.923003	0.52238804	0.5375027	1	1	8650	tags=55%, list=41%, signal=92%	