Supplementary Materials

Figure S1. Low magnification full immunohistochemistry sections of KPC mouse tumors stained for CC3 and Ki67 corresponding to the high magnification images shown in Fig.3. The scale bar corresponds to 1 mm.
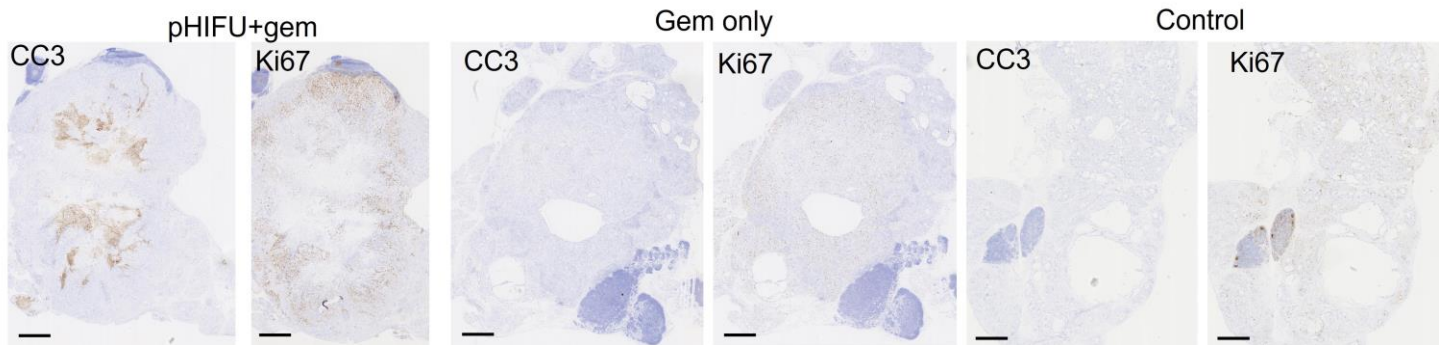

Figure S2. Changes in cell type scores for gem only vs control group (left) and pHIFU+gem vs gem only group (right), derived from gene expression analysis. Per nSolver quality control p-values indicating the validity of each cell type's measurement (i.e. genes previously shown to be characteristic of cell population) only abundance of T cells and B cells could be reliably measured (†p<0.01; ‡p<0.001). Trends in abundance of cytotoxic cells (p=0.11 left, p=0.1 right) and macrophages (p=0.1 left, p=0.26 right) should be considered with caution.
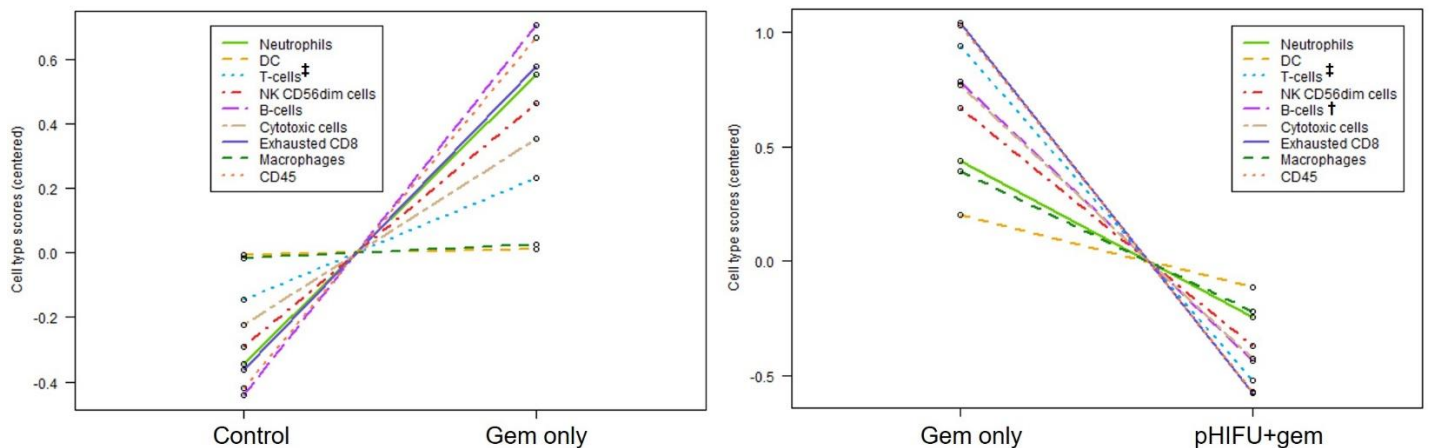

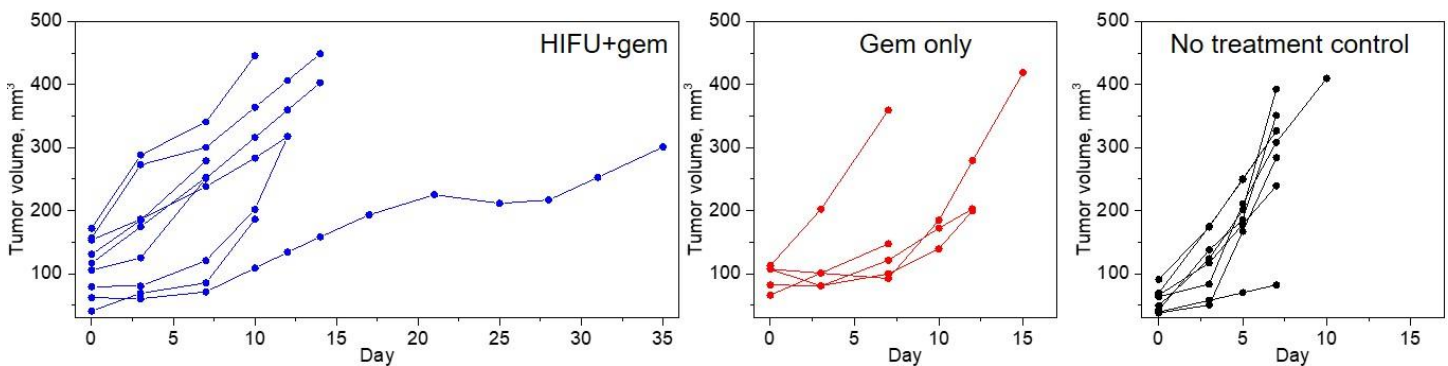**Figure S3**. Tumor growth curves corresponding to Fig.2 expressed in absolute volume.

Table S1. 1. Statistically significant differential gene expression in gem treatment group vs no treatment control

Gene name	Log2 fold change	Standard error	P-value
Csf2	3.16	0.584	0.000214
Relb	0.548	0.113	0.000504
Pparg	2.39	0.544	0.00134
Plau	1.14	0.294	0.00252
Traf2	0.408	0.111	0.00371
Cxcl5	2.47	0.724	0.0058
Il34	0.892	0.267	0.00653
Csf1	0.806	0.249	0.00786
Clec4n	1.05	0.327	0.00855
Klra2	1.14	0.372	0.011
Creb1	0.841	0.276	0.0112
Cd47	-0.499	0.165	0.0116
Gtf3c1	0.532	0.176	0.0116
Ccr1	1.05	0.352	0.0123
Smad3	0.673	0.23	0.0136
Ddx58	0.815	0.279	0.0138
Dmbt1	-1.95	0.705	0.0182
Dusp4	0.597	0.22	0.0202
Nfkb1	0.647	0.246	0.0234
Cxcl1	2.09	0.814	0.028
Trp53	0.999	0.398	0.0289
Il18r1	0.8	0.319	0.0292
Prkcd	0.898	0.362	0.0307
Txnip	-1.46	0.595	0.0318
Il1rn	0.866	0.354	0.0324
Mcam	0.451	0.186	0.0342
Rps6	-0.872	0.362	0.0347
Syk	0.642	0.268	0.0355
Ncf4	1.04	0.433	0.0357
Cd19	2.25	0.929	0.0357
Casp8	0.579	0.247	0.0393
Nfkb2	0.63	0.269	0.0393
Lif	0.894	0.387	0.0415
Runx1	0.556	0.246	0.0452
Ambp	-2	0.889	0.046
Smpd3	-1.11	0.497	0.047
Fcgr1	0.979	0.438	0.0473
Kdr	0.683	0.306	0.0478
Csf2rb	1.12	0.508	0.0498

2. Statistically significant differential gene expression in pHIFU+gem treatment group vs gem alone

Gene name	Log2 fold change	Standard error	P-value
Irf1	-1.18	0.205	8.73E-05
Bcl2	-1.39	0.248	0.000112
Il34	-1.03	0.196	0.0002
Tapbp	-0.759	0.157	0.000417
Atg16l1	-0.612	0.129	0.000467
Ly86	-1.31	0.288	0.000695
Itch	-0.967	0.225	0.00103
Tfeb	-1.16	0.271	0.00105
Cfh	-1.36	0.323	0.00122
Ifih1	-1.36	0.331	0.00145
Cmklr1	-1.04	0.256	0.00161
Stat1	-1.45	0.363	0.00181
Il6st	-1.16	0.292	0.00185
Ddx58	-1.19	0.304	0.00211
Csf2rb	-1.49	0.384	0.00215
Tap1	-1.84	0.475	0.00218
H2-K1	-1.31	0.338	0.00219
Fcgr1	-1.21	0.313	0.00222
H2-M3	-2.11	0.557	0.00258
Msln	1.36	0.36	0.00261
Rel	-1.04	0.28	0.00297
Fap	-1.59	0.433	0.00312
Syk	-0.776	0.211	0.00313
H2	-1.48	0.401	0.00314
Lyn	-1.01	0.281	0.00373
Csf1	-0.756	0.211	0.00379
Ccr5	-1.49	0.417	0.00391
Cxcl9	-2.3	0.636	0.00403
Casp8	-0.692	0.197	0.00425
Icosl	-1.45	0.413	0.00428
Fcer1g	-0.954	0.274	0.00447
Dock9	-0.931	0.269	0.00467
Tank	-0.978	0.283	0.00474
H2-D1	-1.16	0.335	0.00482
Cd97	-0.541	0.157	0.00485
Ccl17	-1.1	0.32	0.0051
Tgfbr2	-2.2	0.648	0.00535
Amica1	-1.08	0.319	0.00554
H2-Eb1	-1.32	0.392	0.00575
Cd55	-1.58	0.473	0.00594
Irf3	-1.22	0.367	0.00599
Abca1	-0.684	0.206	0.00609

Psmb10	-0.902	0.272	0.00615
H2	-0.836	0.254	0.00642
Prkcd	-1.61	0.496	0.00693
Cd84	-0.943	0.291	0.00704
Crebbp	-1.09	0.339	0.00731
Ccr2	-0.597	0.186	0.00743
Tlr8	-1.62	0.504	0.00749
Kdr	-1.32	0.413	0.00756
Klra2	-1.04	0.326	0.00756
Tnfrsf1b	-1.23	0.388	0.00798
Cd1d1	-0.746	0.237	0.00831
Mertk	-1.08	0.345	0.00892
Ptprc	-1.25	0.401	0.00908
Map3k1	-1.5	0.483	0.00912
Mapk14	-0.682	0.22	0.00921
Ikbke	-0.623	0.201	0.00924
Isg20	-1.57	0.508	0.00928
Stat6	0.579	0.187	0.00933
Csf1r	-0.387	0.125	0.00942
Itgal	-1.31	0.428	0.01
Igf1r	-1.24	0.406	0.0102
Smpd3	-0.941	0.31	0.0102
C1qa	0.997	0.329	0.0104
Ep300	-0.605	0.2	0.0105
Entpd1	-1.01	0.334	0.0108
H2-T23	-1.01	0.336	0.0109
Fn1	-0.899	0.299	0.0109
Nlrp3	-0.839	0.28	0.0111
Pparg	-1.39	0.467	0.0116
Psmb9	1.13	0.381	0.0117
Il6ra	-1.37	0.462	0.0119
Vegfc	-0.968	0.327	0.0119
Irf8	-0.657	0.222	0.0121
Atm	-0.943	0.322	0.0127
Nfatc4	-0.568	0.195	0.0128
Abcg1	-1.26	0.432	0.0131
Tgfb3	-0.966	0.332	0.0131
Tgfb1	-0.859	0.3	0.0143
Il7r	-0.598	0.211	0.0152
Ppbp	-1.54	0.548	0.0157
C1qbp	2.74	0.978	0.0159
Cd9	0.434	0.156	0.0167
H2-Aa	0.768	0.279	0.0175
Csf3r	-1.38	0.501	0.0176
Tyk2	-1.4	0.509	0.0177
Ccl5	-1.36	0.497	0.018

Tfrc	-1.82	0.656	0.0181
Ifnar1	1.1	0.403	0.0182
Smad3	-0.627	0.23	0.0186
Il1b	-0.706	0.262	0.0195
Irak4	-1.22	0.456	0.0199
Bst2	-0.671	0.25	0.02
Chuk	-0.747	0.279	0.0201
Ctss	-1.03	0.384	0.0202
Notch1	-0.698	0.261	0.0203
Fyn	-0.63	0.236	0.0203
Cd19	-1.02	0.383	0.0206
Ifi27	-2.33	0.866	0.0211
Csf2	-1.15	0.437	0.0216
H2-Dma	-1.92	0.727	0.0218
Lif	-1.08	0.409	0.0218
Nfatc1	-1.02	0.388	0.0218
C3ar1	-0.98	0.374	0.0222
Gpi1	-1.28	0.487	0.0223
Fcgr2b	0.418	0.159	0.0224
Jak3	-0.887	0.339	0.0226
Cd74	-1.29	0.494	0.0231
Irf2	-1.27	0.488	0.0231
Lcp1	-0.51	0.196	0.0232
Tnfrsf1a	-0.758	0.292	0.0234
Stat3	-0.473	0.182	0.0234
Cd274	-0.482	0.186	0.0236
Marco	-0.984	0.382	0.0243
Irf5	-2.5	0.97	0.0244
Ltb	-0.84	0.328	0.0251
Runx1	-1.36	0.534	0.0259
Nod1	-0.594	0.235	0.0262
C1qb	-1.09	0.435	0.0274
Mrc1	-0.626	0.249	0.0274
Ncf4	-0.847	0.34	0.0282
Traf6	-0.868	0.349	0.0287
Ikzf1	-0.299	0.12	0.0289
Cd200	-1.56	0.627	0.03
H2-DMb2	-0.697	0.284	0.0304
Jak1	-1.62	0.66	0.0306
Ifitm1	-0.461	0.189	0.0309
Axl	-1.55	0.636	0.0313
Irak2	-0.771	0.318	0.0319
Lcn2	-0.888	0.367	0.0325
Il1r1	-1.28	0.53	0.0327
Clec5a	-0.705	0.294	0.0334
Itga4	-0.952	0.397	0.0338

Itgb2	-0.944	0.394	0.034
Clec4n	-0.881	0.369	0.0343
Cd86	-0.875	0.367	0.0343
Psmb8	-0.948	0.397	0.0344
Rela	-1.06	0.451	0.0373
Akt3	-0.393	0.168	0.0373
App	-0.184	0.079	0.0379
Arg1	-0.226	0.0971	0.0386
Mcam	0.853	0.369	0.0391
Cd34	-0.5	0.216	0.0392
Tie1	-0.622	0.269	0.0393
Map2k4	-0.62	0.268	0.0393
Egfr	-0.418	0.181	0.0393
Cx3cr1	-0.7	0.303	0.0395
Ewsr1	-0.883	0.384	0.0404
Il18rap	-0.472	0.206	0.0409
Tgfbr1	-0.524	0.229	0.0413
Yy1	-0.506	0.222	0.0416
Selplg	0.268	0.117	0.0416
Ifitm2	-0.742	0.326	0.0421
Reps1	-0.466	0.209	0.046
Cxcr4	-0.437	0.197	0.0469
Psmb7	-0.552	0.251	0.0486
Ccl19	0.294	0.134	0.0488
Ets1	-1.55	0.706	0.049
Ifi35	-0.657	0.3	0.0491
Ifi35	-0.42	0.192	0.0498

3. Statistically significant differential gene expression in pHIFU+gem treatment group vs gem alone

Gene name	Log2 fold change	Standard error	P-value
Tapbp	-0.702	0.141	0.000165
Cxcl5	2.58	0.544	0.000261
H2-K1	-1.45	0.371	0.00136
S100a8	2.22	0.596	0.00202
Ifih1	-1.16	0.323	0.0027
H2-D1	-1.06	0.299	0.00296
Il1a	2.03	0.59	0.00371
Stat3	-0.456	0.134	0.00386
Tap1	-1.87	0.563	0.00455
Txnip	-1.51	0.453	0.00462
Il6ra	-1.42	0.435	0.00518
Il13ra1	-0.426	0.134	0.00624
H2-T23	-1.14	0.36	0.00634
Dpp4	-2.07	0.676	0.00834

Ifit3	-1.78	0.587	0.00912
Amica1	-1.29	0.432	0.0092
Stat5b	-0.619	0.209	0.00979
Jak1	-0.408	0.141	0.0112
Psmb10	-0.876	0.304	0.0114
H2	-1.15	0.408	0.0129
Cfh	-0.958	0.34	0.0131
Il7r	-1.99	0.702	0.0132
Bid	1.21	0.433	0.0134
Fyn	-0.959	0.346	0.0144
Zbp1	-1.69	0.613	0.0147
Abca1	-0.691	0.252	0.015
Msln	1.25	0.461	0.016
Dmbt1	-1.78	0.656	0.0162
Yy1	0.394	0.146	0.0164
Il2rb	-1.8	0.665	0.0172
Irf1	-0.92	0.346	0.018
H2-Eb1	-1.33	0.509	0.0194
Psmb9	-1.4	0.539	0.0202
Tollip	-0.319	0.125	0.022
Lrp1	-0.605	0.237	0.0222
Map2k4	-0.374	0.148	0.0235
Mrc1	-0.869	0.348	0.0247
Stat1	-1.21	0.486	0.0248
Psmb8	-1.33	0.536	0.0254
H2-Ab1	-1.32	0.539	0.0269
H2-Q2	-2.24	0.908	0.027
Il6st	-0.803	0.328	0.0271
Ccl5	-1.42	0.579	0.0275
Rps6	-0.607	0.249	0.0278
Nlrc5	-1.44	0.605	0.0318
Fas	-1.06	0.449	0.0318
Apoe	-1.11	0.469	0.0319
Tnfrsf10b	0.394	0.167	0.0319
Myc	0.593	0.251	0.0319
Tnfrsf1b	-0.693	0.295	0.0328
Tap2	-2.04	0.876	0.0354
Icosl	-1.05	0.46	0.0377
Btla	-1.92	0.838	0.0381
Cxcl1	1.49	0.655	0.0394
Cd74	-1.14	0.509	0.04
Col3a1	-0.679	0.302	0.04
Entpd1	-0.57	0.255	0.0409
C3ar1	-0.978	0.438	0.0413
Itch	-0.506	0.228	0.0421
Xbp1	-0.47	0.214	0.044
Tlr8	-0.772	0.351	0.0441
Tgfbr2	-0.858	0.392	0.0447

Fcer1g	-0.681	0.313	0.0457
Dusp4	0.507	0.233	0.0462
Ppbp	1.96	0.904	0.0466
Inpp5d	-1.25	0.576	0.0471
H2-Aa	-1.08	0.499	0.0475
Abcg1	-1.08	0.504	0.0483
C4b	-1.01	0.471	0.0494
Itga2	0.432	0.203	0.0498