

## Supplementary file1

# CRISPRi-mediated knock-down of PRDM1/BLIMP1 programs central memory differentiation in *ex vivo*-expanded human T cells

Mohammad Azadbakht<sup>1</sup>, Ali Sayadmanesh<sup>2</sup>, Naghme Nazer<sup>3</sup>, Amirhossein Ahmadi<sup>4</sup>, Sara Hemmati<sup>2,5</sup>, Hoda Mohammadzade<sup>3</sup>, Marzieh Ebrahimi<sup>2</sup>, Hossein Baharvand<sup>2,6</sup>, Babak Khalaj<sup>3</sup>, Mahmoud Reza Aghamaali<sup>1\*</sup>, Mohsen Basiri<sup>2\*</sup>

<sup>1</sup> Department of Biology, Faculty of Science, University of Guilan, Rasht, Iran

<sup>2</sup> Department of Stem Cell and Developmental Biology, Cell Science Research Center, Royan Institute for Stem Cell Biology and Technology, ACECR, Tehran, Iran

<sup>3</sup> Department of Electrical Engineering, Sharif University of Technology, Tehran, Iran

<sup>4</sup> Department of Biology, Faculty of Science, Persian Gulf University, Bushehr, Iran

<sup>5</sup> School of Medicine, Tehran University of Medical Sciences, Tehran, Iran

<sup>6</sup> Department of Developmental Biology, University of Science and Culture, Tehran, Iran

**Table S1** Genes overexpressed in EM compared with CM T cells

Gene.Symbol	P.Value	adj.P.Val	logFC
<b>GNLY</b>	1.47E-07	0.00043803	5.291836
<b>FGFBP2</b>	7.73E-07	0.00076969	5.204783
<b>GZMH</b>	2.49E-06	0.00143282	4.551996
<b>NKG7</b>	6.40E-08	0.00029866	4.427649
<b>GZMB</b>	6.61E-07	0.00076969	4.17156
<b>FGR</b>	0.0001255	0.01641462	3.474501
<b>IL18RAP</b>	5.23E-06	0.00222057	3.46341
<b>CCL4</b>	3.54E-06	0.00178938	3.398611
<b>SLAMF7</b>	1.04E-06	0.00084893	3.263457
<b>ADRB2</b>	4.20E-07	0.0006308	3.21667
<b>ADGRG1</b>	8.70E-06	0.00323249	3.051751
<b>CEBPD</b>	1.43E-06	0.00106246	2.664709

<b>Gene.Symbol</b>	<b>P.Value</b>	<b>adj.P.Val</b>	<b>logFC</b>
<b>FCGR3B</b>	4.39E-05	0.00870196	2.657909
<b>LYN</b>	0.0001021	0.01380754	2.590005
<b>CX3CR1</b>	3.20E-05	0.00715082	2.577531
<b>GZMA</b>	3.79E-08	0.00029866	2.538613
<b>ZEB2</b>	2.77E-05	0.00675954	2.536871
<b>XCL2</b>	3.28E-05	0.00715082	2.437404
<b>ZNF683</b>	7.01E-05	0.01137224	2.413719
<b>KLRF1</b>	2.29E-05	0.00594287	2.374457
<b>PLEK</b>	8.81E-05	0.01299382	2.34898
<b>ITGAM</b>	1.64E-05	0.0052184	2.315515
<b>PRF1</b>	1.05E-06	0.00084893	2.285143
<b>LGR6</b>	2.97E-05	0.00692658	2.264816
<b>CCR5</b>	2.41E-06	0.00143282	2.1658
<b>PTGDR</b>	5.06E-05	0.00949483	2.101265
<b>C1orf21</b>	4.47E-05	0.00876202	2.096613
<b>TYROBP</b>	7.49E-05	0.01183005	2.034367
<b>FCGR2C</b>	1.83E-05	0.00526069	2.01903
<b>CLIC3</b>	0.000431	0.03447522	2.004627
<b>TMCC3</b>	1.23E-05	0.00412863	1.995329
<b>ATP1B1</b>	0.0001345	0.01701058	1.950665
<b>SMAD7</b>	0.000589	0.04271081	1.942821
<b>SYTL2</b>	3.23E-06	0.00169256	1.939517
<b>CXCR6</b>	4.82E-07	0.0006308	1.90655
<b>LATS2</b>	3.23E-05	0.00715082	1.889679
<b>FASLG</b>	7.19E-05	0.01144969	1.883783
<b>CCL5</b>	4.52E-07	0.0006308	1.856183
<b>CYP4F22</b>	5.48E-05	0.01007234	1.806467
<b>PDGFD</b>	0.0001555	0.01836653	1.787796
<b>HEATR9</b>	0.0007013	0.04668026	1.779146
<b>RGS9</b>	0.0002363	0.02403871	1.762387

<b>Gene.Symbol</b>	<b>P.Value</b>	<b>adj.P.Val</b>	<b>logFC</b>
<b>ADAM12</b>	0.0001392	0.01724794	1.759479
<b>GNGT2</b>	0.0002321	0.0237903	1.756555
<b>TMEM63C</b>	0.0004057	0.03304527	1.756548
<b>GAB3</b>	2.66E-07	0.0006308	1.742812
<b>TBX21</b>	6.87E-08	0.00029866	1.739572
<b>CD1E</b>	0.0001497	0.01792056	1.727061
<b>CIITA</b>	0.0001122	0.01482669	1.694641
<b>CRIM1</b>	9.25E-05	0.01317896	1.69258
<b>F2R</b>	1.76E-05	0.00526069	1.66472
<b>S1PR5</b>	1.98E-05	0.00553112	1.66457
<b>B4GALT5</b>	8.37E-08	0.00029866	1.656853
<b>PLEKHG1</b>	5.17E-05	0.00960192	1.65344
<b>EOMES</b>	0.0002746	0.02676858	1.625747
<b>ADGRG5</b>	0.0001	0.01372758	1.595968
<b>CD300A</b>	0.0001414	0.01739571	1.587359
<b>LILRB1</b>	0.0002567	0.02515887	1.57702
<b>ABI3</b>	0.0001825	0.02021938	1.576404
<b>SIGLEC17P</b>	3.90E-05	0.00799579	1.514351
<b>CST7</b>	9.12E-05	0.01317896	1.511543
<b>ULBP3</b>	0.0002373	0.02403871	1.502352
<b>MXRA7</b>	0.0003999	0.03276896	1.496022
<b>MSC</b>	0.0002978	0.02738243	1.485135
<b>PPP2R2B</b>	1.82E-05	0.00526069	1.48205
<b>SETBP1</b>	0.0001487	0.01792056	1.481501
<b>HPGD</b>	5.59E-05	0.01016967	1.477728
<b>KLRG1</b>	0.000539	0.03973036	1.472955
<b>GOLIM4</b>	9.50E-05	0.01330385	1.421779
<b>SDC4</b>	8.36E-05	0.01264437	1.404081
<b>CST3</b>	0.0001376	0.01716849	1.402545
<b>GALNT3</b>	0.000149	0.01792056	1.399484

<b>Gene.Symbol</b>	<b>P.Value</b>	<b>adj.P.Val</b>	<b>logFC</b>
<b>HLA-DPA1</b>	0.0002892	0.02729789	1.391459
<b>TARP</b>	6.37E-06	0.00252565	1.348662
<b>SEMA3G</b>	0.0007678	0.04980144	1.348641
<b>EFHD2</b>	3.61E-06	0.00178938	1.345637
<b>RASGEF1A</b>	8.40E-07	0.00078902	1.341766
<b>STX3</b>	1.77E-05	0.00526069	1.338587
<b>TGFBR3</b>	2.58E-05	0.00638364	1.33175
<b>CTSW</b>	0.0007411	0.04824557	1.324895
<b>PRSS23</b>	0.0006627	0.0449443	1.313333
<b>TNFSF14</b>	0.0001982	0.02130074	1.291908
<b>HLA-DMB</b>	5.14E-06	0.00222057	1.288206
<b>PLD1</b>	0.0004251	0.0344452	1.276185
<b>PLEKHA5</b>	4.95E-07	0.0006308	1.272207
<b>GBGT1</b>	0.00028	0.02699415	1.251718
<b>AGTRAP</b>	8.23E-06	0.00313277	1.22421
<b>SOX13</b>	0.0003894	0.03272604	1.219386
<b>MYBL1</b>	2.37E-06	0.00143282	1.216047
<b>BHLHE40</b>	4.74E-07	0.0006308	1.201445
<b>PLXND1</b>	4.62E-06	0.00216917	1.169107
<b>JAKMIP1</b>	0.000188	0.02057278	1.149771
<b>CALHM2</b>	0.0006772	0.04575905	1.141863
<b>COLGALT2</b>	6.34E-05	0.01065341	1.141657
<b>MICAL2</b>	0.000306	0.02799228	1.136564
<b>MAP3K8</b>	0.0004386	0.03477516	1.133808
<b>THBS1</b>	8.02E-05	0.01255334	1.11178
<b>CFAP58</b>	7.09E-05	0.01139057	1.10409
<b>C12orf75</b>	2.49E-06	0.00143282	1.101463
<b>ID2</b>	0.0006574	0.0449443	1.096607
<b>NTNG2</b>	1.22E-06	0.00094822	1.082453
<b>HEG1</b>	4.52E-05	0.00876994	1.049059

<b>Gene.Symbol</b>	<b>P.Value</b>	<b>adj.P.Val</b>	<b>logFC</b>
<b>C3AR1</b>	9.65E-05	0.01334129	1.04093
<b>PHLDA1</b>	0.0004287	0.0344452	1.012786
<b>FOSL2</b>	0.0002862	0.02715877	1.011918
<b>GPR68</b>	0.0006132	0.04375542	1.007252
<b>HLF</b>	0.0002934	0.02730779	1.002194