

SHORT COMMUNICATION

Transcriptomic signature of CD4-expressing T-cell abundance developed in healthy peripheral blood predicts strong anti-retroviral therapeutic response in HIV-1: A retrospective and proof-of-concept study

Supplementary File

Table S1. Subject demographics by gene-expression cohort

	Discovery population	Application population
n	340	24
Age (mean±SD)	41.79±12.96	36.79±10.22
Sex (%)		
Female	251 (73.8)	0 (0.0)
Male	89 (26.2)	24 (100.0)
Race (%)		
Caucasian	318 (93.5)	7 (29.2)
Other	22 (6.5)	17 (70.8)

Abbreviation: SD: Standard deviation.

Table S2. Performance of final LASSO model in a 10-fold cross-validation experiment

	RMSE	RMSE (original unit)	Pearson's correlation	R ²
Fold_1	0.070	0.163	0.936	0.876
Fold_2	0.072	0.167	0.878	0.771
Fold_3	0.077	0.179	0.833	0.693
Fold_4	0.083	0.193	0.890	0.792
Fold_5	0.071	0.165	0.920	0.846
Fold_6	0.076	0.176	0.870	0.757
Fold_7	0.069	0.159	0.889	0.791
Fold_8	0.069	0.161	0.915	0.837
Fold_9	0.072	0.168	0.867	0.751
Fold_10	0.070	0.162	0.903	0.815
Avg	0.073	0.169	0.890	0.793

Abbreviations: RMSE: Root mean-squared error; LASSO: Least Absolute Shrinkage and Selection Operator.

Table S3. Gene list with non-zero LASSO coefficients comprising the CD4T gene signature

Gene	Coefficient	Association with CD4T abundance
<i>ABCA1</i>	-0.00264	Negative
<i>ACLY</i>	-0.00133	Negative
<i>AHDC1</i>	-0.00202	Negative
<i>ARMETL1</i>	-0.00136	Negative
<i>BRD8</i>	-0.00603	Negative
<i>BRPF1</i>	-0.00283	Negative
<i>C21orf63</i>	-0.00311	Negative
<i>C21orf70</i>	-0.00671	Negative
<i>CAT</i>	-0.00197	Negative
<i>CBWD5</i>	-0.00142	Negative
<i>CCDC28A</i>	-0.00202	Negative
<i>CCDC55</i>	-0.00535	Negative
<i>CD19</i>	-0.00137	Negative
<i>CD276</i>	-0.00418	Negative
<i>CD8A</i>	-0.01616	Negative
<i>CD8B</i>	-0.00552	Negative
<i>CDC2L6</i>	-0.00597	Negative
<i>CDCA7L</i>	-0.00574	Negative
<i>CMTM2</i>	-0.00254	Negative
<i>CPNE2</i>	-0.00758	Negative
<i>CR2</i>	-0.00743	Negative
<i>CSF3R</i>	-0.00167	Negative
<i>DENND3</i>	-0.00380	Negative
<i>DGKQ</i>	-0.00594	Negative
<i>DKK3</i>	-0.00614	Negative
<i>DNAJC1</i>	-0.00330	Negative
<i>DNHD2</i>	-0.00413	Negative
<i>EIF2C4</i>	-0.01041	Negative
<i>EIF4G3</i>	-0.00319	Negative
<i>FAM33A</i>	-0.00189	Negative
<i>FLJ20712</i>	-0.00393	Negative
<i>FLJ45445</i>	-0.00211	Negative
<i>GAB3</i>	-0.00823	Negative
<i>GBE1</i>	-0.00643	Negative
<i>GCM1</i>	-0.00870	Negative
<i>HCG27</i>	-0.00204	Negative
<i>HCLS1</i>	-0.00807	Negative
<i>HOXC4</i>	-0.00532	Negative
<i>HTR3A</i>	-0.00348	Negative
<i>INPP4A</i>	-0.00649	Negative
<i>KIAA1271</i>	-0.00650	Negative

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Table S3. (Continued)

Gene	Coefficient	Association with CD4T abundance
<i>KIF15</i>	-0.00894	Negative
<i>KLRC3</i>	-0.00361	Negative
<i>LAG3</i>	-0.00207	Negative
<i>LIPC</i>	-0.00239	Negative
<i>LOC221136</i>	-0.01179	Negative
<i>LOC401089</i>	-0.00565	Negative
<i>LOC642183</i>	-0.00477	Negative
<i>LOC642756</i>	-0.00450	Negative
<i>LOC643492</i>	-0.00264	Negative
<i>LOC644033</i>	-0.00228	Negative
<i>LOC644644</i>	-0.00357	Negative
<i>LOC645636</i>	-0.00173	Negative
<i>LOC646494</i>	-0.00572	Negative
<i>LOC652264</i>	-0.00242	Negative
<i>LOC653113</i>	-0.00171	Negative
<i>LOC653303</i>	-0.00146	Negative
<i>MYO9B</i>	-0.00127	Negative
<i>NDN</i>	-0.00417	Negative
<i>NFKBIL2</i>	-0.00643	Negative
<i>NSUN7</i>	-0.00157	Negative
<i>NUDT2</i>	-0.00177	Negative
<i>OPRK1</i>	-0.00800	Negative
<i>OTOF</i>	-0.00608	Negative
<i>PDE6G</i>	-0.00581	Negative
<i>PDGFC</i>	-0.00206	Negative
<i>PIGL</i>	-0.00136	Negative
<i>PIGT</i>	-0.00238	Negative
<i>PLCG2</i>	-0.00682	Negative
<i>PMCHL2</i>	-0.00905	Negative
<i>POLA1</i>	-0.00385	Negative
<i>POLR3D</i>	-0.00719	Negative
<i>PPP1R15B</i>	-0.00230	Negative
<i>PPP2R5E</i>	-0.00466	Negative
<i>PRR13</i>	-0.00661	Negative
<i>RAPGEFL1</i>	-0.00153	Negative
<i>RUNDC1</i>	-0.00605	Negative
<i>SCARB1</i>	-0.00318	Negative
<i>SLC25A4</i>	-0.00139	Negative
<i>SLC29A3</i>	-0.00242	Negative
<i>SLC45A4</i>	-0.00384	Negative
<i>SLIC1</i>	-0.00272	Negative
<i>SUCNR1</i>	-0.00184	Negative

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Table S3. (Continued)

Gene	Coefficient	Association with CD4T abundance
<i>TBC1D5</i>	-0.00385	Negative
<i>TCEA2</i>	-0.00388	Negative
<i>TLR10</i>	-0.00511	Negative
<i>TMEM16H</i>	-0.00332	Negative
<i>TMEM35</i>	-0.00776	Negative
<i>TNFRSF6B</i>	-0.00607	Negative
<i>TRAF4</i>	-0.00328	Negative
<i>TTC16</i>	-0.00792	Negative
<i>UBE2J1</i>	-0.00174	Negative
<i>ZNF285A</i>	-0.00345	Negative
<i>ACOT1</i>	0.00376	Positive
<i>ACPL2</i>	0.00266	Positive
<i>AK2</i>	0.00827	Positive
<i>AP3M2</i>	0.00472	Positive
<i>ARHGAP11A</i>	0.00228	Positive
<i>ARMCX4</i>	0.00464	Positive
<i>ASAH1</i>	0.00354	Positive
<i>BAG3</i>	0.00960	Positive
<i>BGLAP</i>	0.00150	Positive
<i>BIRC3</i>	0.00352	Positive
<i>BRD1</i>	0.00622	Positive
<i>C16orf30</i>	0.00262	Positive
<i>C19orf21</i>	0.00536	Positive
<i>C6orf105</i>	0.00178	Positive
<i>CACNA11</i>	0.01344	Positive
<i>CAPN2</i>	0.00293	Positive
<i>CD28</i>	0.01101	Positive
<i>CD36</i>	0.00252	Positive
<i>CD40LG</i>	0.01145	Positive
<i>CDC14A</i>	0.00663	Positive
<i>CEP135</i>	0.00244	Positive
<i>CETN2</i>	0.00175	Positive
<i>CHCHD6</i>	0.00347	Positive
<i>CHCHD7</i>	0.00279	Positive
<i>COMMD6</i>	0.00704	Positive
<i>CTLA4</i>	0.01113	Positive
<i>DKFZp434N035</i>	0.00423	Positive
<i>DPP7</i>	0.00262	Positive
<i>EDA</i>	0.01913	Positive
<i>EPB41L2</i>	0.00334	Positive
<i>EPHA4</i>	0.00814	Positive
<i>FBXO22</i>	0.00427	Positive

(Cont'd...)

Table S3. (Continued)

Gene	Coefficient	Association with CD4T abundance
<i>FHIT</i>	0.00202	Positive
<i>FLJ22374</i>	0.00464	Positive
<i>GATA3</i>	0.00543	Positive
<i>GOLGA8A</i>	0.00156	Positive
<i>GPR153</i>	0.00745	Positive
<i>HMGA2</i>	0.00254	Positive
<i>ICOS</i>	0.00636	Positive
<i>IL11RA</i>	0.00734	Positive
<i>IL7R</i>	0.00358	Positive
<i>IMPAD1</i>	0.00670	Positive
<i>INPP4B</i>	0.00238	Positive
<i>ISG20L1</i>	0.00169	Positive
<i>KLF11</i>	0.00453	Positive
<i>KRTAP10-2</i>	0.00157	Positive
<i>LEFTY1</i>	0.00422	Positive
<i>LOC158830</i>	0.00588	Positive
<i>LOC283683</i>	0.00260	Positive
<i>LOC441151</i>	0.00571	Positive
<i>LOC642210</i>	0.00320	Positive
<i>LOC642576</i>	0.00509	Positive
<i>LOC644297</i>	0.00308	Positive
<i>LOC644634</i>	0.00541	Positive
<i>LOC644919</i>	0.00498	Positive
<i>LOC645052</i>	0.00274	Positive
<i>LOC645464</i>	0.00147	Positive
<i>LOC645968</i>	0.00424	Positive
<i>LOC649270</i>	0.00556	Positive
<i>LOC652589</i>	0.00474	Positive
<i>LOC652659</i>	0.00943	Positive
<i>LOC653316</i>	0.00532	Positive
<i>LOC653663</i>	0.00653	Positive
<i>LRIG1</i>	0.00217	Positive
<i>MEIS3</i>	0.00132	Positive
<i>MFHAS1</i>	0.00254	Positive
<i>MGC35361</i>	0.00401	Positive
<i>MMP14</i>	0.00416	Positive
<i>MORC2</i>	0.00814	Positive
<i>MYH4</i>	0.00258	Positive
<i>NOX1</i>	0.00152	Positive
<i>NOXA1</i>	0.00499	Positive
<i>NPCDR1</i>	0.00381	Positive
<i>NRBP2</i>	0.00160	Positive

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Table S3. (Continued)

Gene	Coefficient	Association with CD4T abundance
<i>NT5DC3</i>	0.00739	Positive
<i>NTSR1</i>	0.00180	Positive
<i>OR1L8</i>	0.00763	Positive
<i>OR2H2</i>	0.00814	Positive
<i>P2RX1</i>	0.00456	Positive
<i>P2RY6</i>	0.01526	Positive
<i>PANK1</i>	0.01224	Positive
<i>PBX4</i>	0.00320	Positive
<i>PLAG1</i>	0.00198	Positive
<i>POLE2</i>	0.00179	Positive
<i>PRIM2A</i>	0.00135	Positive
<i>PRKCA</i>	0.00332	Positive
<i>PRKY</i>	0.00401	Positive
<i>PURA</i>	0.00602	Positive
<i>RPL23AP13</i>	0.00126	Positive
<i>RPL35</i>	0.00284	Positive
<i>SCRN2</i>	0.00433	Positive
<i>SLC22A17</i>	0.00153	Positive
<i>SLC35E2</i>	0.00751	Positive
<i>SNAPC3</i>	0.00485	Positive

(Cont'd...)

Table S3. (Continued)

Gene	Coefficient	Association with CD4T abundance
<i>SPOCK2</i>	0.00747	Positive
<i>SUSD3</i>	0.00523	Positive
<i>TACSTD2</i>	0.00224	Positive
<i>TBC1D4</i>	0.01202	Positive
<i>TCEA3</i>	0.00365	Positive
<i>TIAM1</i>	0.00537	Positive
<i>TMED4</i>	0.00463	Positive
<i>TNFRSF25</i>	0.00510	Positive
<i>TOE1</i>	0.00514	Positive
<i>TRAF6</i>	0.00149	Positive
<i>TRAT1</i>	0.00170	Positive
<i>UBASH3A</i>	0.00401	Positive
<i>USP37</i>	0.00471	Positive
<i>VPS72</i>	0.00355	Positive
<i>ZBTB7B</i>	0.00160	Positive
<i>ZNF179</i>	0.00616	Positive
<i>ZNF37A</i>	0.00624	Positive
<i>ZNF432</i>	0.00411	Positive
<i>ZNF623</i>	0.00820	Positive
<i>ZNF71</i>	0.00212	Positive

Abbreviation: LASSO: Least Absolute Shrinkage and Selection Operator.