

Correlation of selected genes with stemness index

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2018-07-28

Correlation analysis

Question: In which cancers expression of gene STARD5 significantly correlates with stemness index, what type of stemness index?

- **Legend:**

- “cancer” - cancer type. See abbreviations of cancer types at <http://www.liuzlab.org/TCGA2STAT/CancerDataChecklist.pdf>
- “num.samples” - number of samples used to run correlation analysis
- “si” - stemness index. mRNAsi - gene expression-based, EREG-miRNAsi - epigenomic- and gene expression-based, mDNAsi, EREG-mDNAsi - same but methylation-based, DMPsi - differentially methylated probes-based, ENHsi - enhancer-based. Sorted by in decreasing order
- “corr” - pearson correlation coefficient
- “pval” - significance of correlation

For details on stemness indices, see Malta, Tathiane M., Artem Sokolov, Andrew J. Gentles, Tomasz Burzykowski, Laila Poisson, John N. Weinstein, Bożena Kamińska, et al. “Machine Learning Identifies Stemness Features Associated with Oncogenic Dedifferentiation.” *Cell* 173, no. 2 (April 2018): 338-354.e15. <https://doi.org/10.1016/j.cell.2018.03.034>

cancer	num.samples	si	corr	pval
THYM	120	mRNAsi	0.5548	4.882e-11
DLBC	47	DMPsi	0.417	0.003549
DLBC	47	mDNAsi	0.3843	0.007648
DLBC	47	ENHsi	0.3722	0.009987
DLBC	47	EREG-mDNAsi	0.3693	0.01063
CHOL	36	DMPsi	0.3117	0.06427
CHOL	36	mDNAsi	0.2645	0.119
THYM	120	EREG-mRNAsi	0.2619	0.003857
CHOL	36	EREG-mDNAsi	0.2528	0.1368
KIRP	269	mDNAsi	0.2281	0.0001606
KIRP	269	EREG-mDNAsi	0.2239	0.0002143
ACC	78	EREG-mDNAsi	0.22	0.05293
KIRP	269	DMPsi	0.2183	0.0003102
KICH	65	EREG-mRNAsi	0.2154	0.0848
KIRP	284	EREG-mRNAsi	0.2104	0.0003574
ACC	78	ENHsi	0.1936	0.08947
UCS	57	ENHsi	0.1869	0.1638
ACC	78	mDNAsi	0.186	0.103
CHOL	36	mRNAsi	0.1832	0.2847
KIRP	269	ENHsi	0.1817	0.002774
STAD	368	DMPsi	0.1767	0.0006615
STAD	368	ENHsi	0.1747	0.0007649
LIHC	366	DMPsi	0.1736	0.0008551
LIHC	366	ENHsi	0.1723	0.0009366
THCA	494	mDNAsi	0.1701	0.0001456
STAD	368	mDNAsi	0.1679	0.001228

cancer	num.samples	si	corr	pval
KIPAN	644	EREG-mDNAsi	0.1642	2.809e-05
LIHC	366	mDNAsi	0.1632	0.001731
PAAD	156	DMPsi	0.1577	0.04933
KIPAN	644	mDNAsi	0.1573	6.102e-05
LIHC	366	EREG-mDNAsi	0.1534	0.003263
THCA	494	EREG-mDNAsi	0.1504	0.0007955
READ	85	DMPsi	0.1498	0.1713
THCA	494	DMPsi	0.1491	0.0008862
KIPAN	644	DMPsi	0.1482	0.00016
STAD	368	EREG-mDNAsi	0.1445	0.005498
PRAD	480	EREG-mDNAsi	0.1402	0.002076
CESC	293	EREG-mDNAsi	0.139	0.01732
CHOL	36	ENHsi	0.1377	0.4232
READ	85	mDNAsi	0.1341	0.2211
PAAD	156	ENHsi	0.1249	0.1203
PAAD	156	EREG-mRNAsi	0.1227	0.1269
KIPAN	863	EREG-mRNAsi	0.1195	0.0004326
SKCM	103	EREG-mRNAsi	0.116	0.2434
READ	85	EREG-mDNAsi	0.1153	0.2932
COAD	279	mRNAsi	0.1126	0.0604
THCA	494	ENHsi	0.1092	0.01517
PCPG	175	EREG-mDNAsi	0.1089	0.1515
COAD	279	EREG-mRNAsi	0.1058	0.07762
GBMLGG	548	EREG-mDNAsi	0.1053	0.01367
KIRC	310	DMPsi	0.1024	0.07182
COADREAD	366	mRNAsi	0.1016	0.05212
READ	85	ENHsi	0.1009	0.3581
GBMLGG	548	mDNAsi	0.09554	0.02531
UCS	57	DMPsi	0.09479	0.4831
KIRC	310	EREG-mDNAsi	0.09446	0.09687
PRAD	480	ENHsi	0.09306	0.04156
OV	260	EREG-mRNAsi	0.09182	0.1398
KIRP	284	mRNAsi	0.08833	0.1376
KIPAN	644	ENHsi	0.08603	0.02903
KIRC	310	mDNAsi	0.08394	0.1403
DLBC	47	mRNAsi	0.0835	0.5769
COADREAD	366	EREG-mRNAsi	0.0827	0.1142
PAAD	156	mDNAsi	0.08254	0.3057
PCPG	175	mDNAsi	0.08106	0.2862
GBMLGG	548	ENHsi	0.08037	0.0601
CESC	293	mDNAsi	0.07811	0.1824
LGG	502	EREG-mDNAsi	0.07467	0.0947
UCS	57	mDNAsi	0.07388	0.585
PRAD	480	mDNAsi	0.07377	0.1065
ACC	78	DMPsi	0.07336	0.5233
LUSC	482	EREG-mRNAsi	0.07151	0.1169
LGG	502	mDNAsi	0.06604	0.1395
THYM	120	DMPsi	0.05977	0.5167
GBMLGG	548	DMPsi	0.05878	0.1694
UCEC	168	ENHsi	0.05567	0.4736
LUAD	452	DMPsi	0.05491	0.244
READ	87	mRNAsi	0.05482	0.6141

cancer	num.samples	si	corr	pval
LGG	502	DMPsi	0.05307	0.2353
CESC	293	ENHsi	0.05184	0.3766
PCPG	175	mRNAasi	0.04988	0.5121
PCPG	175	DMPsi	0.04818	0.5266
PCPG	175	EREG-mRNAasi	0.0468	0.5385
LUSC	358	ENHsi	0.04415	0.405
SKCM	103	EREG-mDNAasi	0.03566	0.7206
THCA	494	EREG-mRNAasi	0.03229	0.474
PCPG	175	ENHsi	0.02959	0.6975
PAAD	156	EREG-mDNAasi	0.02736	0.7346
LGG	502	ENHsi	0.0264	0.5552
LUSC	358	EREG-mDNAasi	0.02403	0.6504
READ	87	EREG-mRNAasi	0.02114	0.8459
STAD	399	EREG-mRNAasi	0.02085	0.6779
BRCA	769	DMPsi	0.01963	0.5869
COADREAD	356	ENHsi	0.01623	0.7603
DLBC	47	EREG-mRNAasi	0.01337	0.9289
UCS	57	EREG-mDNAasi	0.01333	0.9216
LUSC	358	mDNAasi	0.01219	0.8182
CESC	293	mRNAasi	0.01064	0.8561
COADREAD	356	EREG-mDNAasi	0.009894	0.8524
COADREAD	356	mDNAasi	0.009272	0.8616
BLCA	403	EREG-mRNAasi	0.007776	0.8763
LUAD	510	EREG-mRNAasi	0.003966	0.9288
LIHC	366	EREG-mRNAasi	0.001323	0.9799
MESO	82	DMPsi	-0.006363	0.9548
COAD	271	ENHsi	-0.009262	0.8794
SKCM	103	mDNAasi	-0.01274	0.8984
COADREAD	356	DMPsi	-0.01334	0.8019
CHOL	36	EREG-mRNAasi	-0.0145	0.9331
LUAD	452	mDNAasi	-0.016	0.7344
KIRC	310	ENHsi	-0.01612	0.7774
ESCA	171	DMPsi	-0.02279	0.7673
COAD	271	EREG-mDNAasi	-0.02512	0.6806
LUAD	452	EREG-mDNAasi	-0.02594	0.5822
STAD	399	mRNAasi	-0.02846	0.5708
HNSC	510	mRNAasi	-0.02976	0.5024
SKCM	103	DMPsi	-0.0344	0.7301
LUSC	358	DMPsi	-0.035	0.5092
COAD	271	mDNAasi	-0.03586	0.5567
ESCA	171	EREG-mDNAasi	-0.03644	0.6361
MESO	82	EREG-mRNAasi	-0.03824	0.733
ESCA	171	mDNAasi	-0.04001	0.6034
UCEC	168	mDNAasi	-0.04233	0.5859
BRCA	769	ENHsi	-0.04664	0.1964
UCEC	168	EREG-mDNAasi	-0.04801	0.5366
BLCA	403	EREG-mDNAasi	-0.04971	0.3195
KIPAN	863	mRNAasi	-0.05187	0.1279
CESC	293	DMPsi	-0.05847	0.3186
BRCA	1071	EREG-mRNAasi	-0.05953	0.05146
MESO	82	mRNAasi	-0.06886	0.5387
SKCM	103	ENHsi	-0.07066	0.4782

cancer	num.samples	si	corr	pval
ESCA	171	ENHsi	-0.07193	0.3498
THYM	120	ENHsi	-0.07451	0.4187
PAAD	156	mRNAasi	-0.0756	0.3483
BRCA	769	mDNAasi	-0.07701	0.03273
COAD	271	DMPsi	-0.07913	0.1941
UCEC	168	DMPsi	-0.0818	0.2918
LUAD	452	ENHsi	-0.08262	0.07932
HNSC	510	EREG-mRNAasi	-0.08268	0.06207
SARC	253	EREG-mRNAasi	-0.08613	0.172
LGG	502	EREG-mRNAasi	-0.0878	0.04929
THYM	120	mDNAasi	-0.08783	0.3401
BLCA	403	mDNAasi	-0.09243	0.06379
ESCA	171	EREG-mRNAasi	-0.093	0.2264
MESO	82	EREG-mDNAasi	-0.09414	0.4002
GBMLGG	645	EREG-mRNAasi	-0.09507	0.01572
MESO	82	mDNAasi	-0.09821	0.38
CESC	293	EREG-mRNAasi	-0.09903	0.09065
UCS	57	EREG-mRNAasi	-0.1035	0.4438
BLCA	403	ENHsi	-0.1069	0.03194
KIRC	514	EREG-mRNAasi	-0.1079	0.01435
PRAD	480	DMPsi	-0.1128	0.01337
BRCA	769	EREG-mDNAasi	-0.1214	0.0007393
THYM	120	EREG-mDNAasi	-0.1255	0.1718
SKCM	103	mRNAasi	-0.1333	0.1794
THCA	494	mRNAasi	-0.14	0.001815
KICH	65	mRNAasi	-0.1419	0.2594
UCS	57	mRNAasi	-0.1448	0.2826
HNSC	510	EREG-mDNAasi	-0.1489	0.0007455
OV	260	mRNAasi	-0.1525	0.01382
GBM	143	EREG-mRNAasi	-0.1543	0.06572
MESO	82	ENHsi	-0.1559	0.1618
TGCT	132	ENHsi	-0.1601	0.06676
BLCA	403	mRNAasi	-0.1682	0.0006969
BLCA	403	DMPsi	-0.1706	0.0005817
LUSC	482	mRNAasi	-0.1772	9.152e-05
TGCT	132	EREG-mRNAasi	-0.1775	0.04172
HNSC	510	mDNAasi	-0.1828	3.288e-05
HNSC	510	DMPsi	-0.1876	1.998e-05
UCEC	172	EREG-mRNAasi	-0.1882	0.01342
TGCT	132	EREG-mDNAasi	-0.2006	0.02112
KICH	65	DMPsi	-0.201	0.1085
LGG	502	mRNAasi	-0.2047	3.781e-06
ESCA	171	mRNAasi	-0.2069	0.006635
TGCT	132	mDNAasi	-0.2069	0.01729
HNSC	510	ENHsi	-0.2264	2.368e-07
KICH	65	ENHsi	-0.2279	0.06785
KIRC	514	mRNAasi	-0.2311	1.162e-07
TGCT	132	DMPsi	-0.2356	0.006532
PRAD	480	EREG-mRNAasi	-0.2363	1.628e-07
LIHC	366	mRNAasi	-0.2436	2.412e-06
SARC	253	EREG-mDNAasi	-0.2502	5.73e-05
SARC	253	ENHsi	-0.2604	2.738e-05

cancer	num.samples	si	corr	pval
SARC	253	mRNA _{si}	-0.2636	2.16e-05
KICH	65	mDNA _{si}	-0.2644	0.0333
KICH	65	EREG-mDNA _{si}	-0.2671	0.03148
SARC	253	mDNA _{si}	-0.2766	8.002e-06
UCEC	172	mRNA _{si}	-0.2892	0.0001193
LUAD	510	mRNA _{si}	-0.3046	2.075e-12
SARC	253	DMP _{si}	-0.3085	5.601e-07
GBM	46	ENH _{si}	-0.3292	0.02549
GBM	46	EREG-mDNA _{si}	-0.333	0.02372
ACC	78	mRNA _{si}	-0.346	0.001915
GBM	46	mDNA _{si}	-0.3534	0.01599
BRCA	1071	mRNA _{si}	-0.3555	0
GBMLGG	645	mRNA _{si}	-0.3566	0
ACC	78	EREG-mRNA _{si}	-0.362	0.001129
TGCT	132	mRNA _{si}	-0.372	1.125e-05
GBM	46	DMP _{si}	-0.3785	0.009485
PRAD	480	mRNA _{si}	-0.4176	0
GBM	143	mRNA _{si}	-0.5287	1.143e-11
OV	9	mDNA _{si}	-0.6786	0.04449
OV	9	EREG-mDNA _{si}	-0.6804	0.04367
OV	9	DMP _{si}	-0.6884	0.04033
OV	9	ENH _{si}	-0.7204	0.02858