

Supplementary Table 4

a)

T-cell cluster	Mainz Median	B-cell cluster	Mainz Median	Proliferation cluster	Mainz Median	ER cluster	Mainz Median
44790_s_at	105,55	221286_s_at	105,85	222039_at	205,05	41660_at	798,15
203185_at	418,05	217480_x_at	793,40	218662_s_at	193,45	212495_at	885,50
37145_at	88,10	211645_x_at	1006,00	221520_s_at	122,20	212492_s_at	765,60
205495_s_at	106,30	217157_x_at	478,40	218755_at	278,70	212196_at	1444,00
34210_at	347,65	216207_x_at	1547,50	204825_at	372,20	204864_s_at	284,80
204661_at	322,90	217378_x_at	868,65	218542_at	203,45	211000_s_at	464,95
211796_s_at	387,15	216576_x_at	671,95	204444_at	212,60	204863_s_at	400,75
213539_at	375,80	215176_x_at	1983,50	218039_at	775,10	206401_s_at	456,25
205831_at	404,90	216401_x_at	457,55	202705_at	409,85	203928_x_at	508,15
213193_x_at	802,40	214836_x_at	2256,50	218009_s_at	469,20	203929_s_at	1090,50
210915_x_at	548,80	214669_x_at	3240,00	210052_s_at	529,50	203930_s_at	217,10
204118_at	629,40	211644_x_at	995,50	202954_at	900,05	208305_at	105,70
211339_s_at	167,60	211643_x_at	652,35	202095_s_at	343,65	220581_at	201,05
209670_at	421,65	214777_at	449,90	208079_s_at	291,95	215552_s_at	170,70
204116_at	317,15	217281_x_at	254,30	204092_s_at	380,75	218976_at	1594,00
204891_s_at	207,20	216510_x_at	191,45	209642_at	161,30	202089_s_at	5472,50
204655_at	452,20	211650_x_at	162,65	204962_s_at	221,75	212960_at	887,35
1405_i_at	529,05	214768_x_at	554,90	218355_at	209,50	210735_s_at	1319,00
206150_at	251,30	211881_x_at	294,40	209408_at	373,75	204508_s_at	1425,50
206666_at	174,00	211798_x_at	366,25	202870_s_at	253,75	203963_at	2807,50
210031_at	202,10	216491_x_at	194,35	202580_x_at	213,75	205225_at	6249,50
211902_x_at	303,70	211637_x_at	260,20	209714_s_at	374,65	205186_at	314,85
210972_x_at	543,35	217179_x_at	341,00	203764_at	188,10	211712_s_at	360,70
209671_x_at	436,10	216557_x_at	240,45	203554_x_at	1053,00	210085_s_at	234,55
212588_at	498,50	214916_x_at	282,70	214710_s_at	582,45	218692_at	668,05

207238_s_at	288,30	214973_x_at	305,85	210559_s_at	664,50	210652_s_at	1416,00
212587_s_at	278,10	211908_x_at	141,20	203214_x_at	517,55	204798_at	2880,00
211742_s_at	317,80	217148_x_at	901,30	203213_at	522,60	205862_at	265,45
204834_at	318,70	216984_x_at	401,75	206102_at	379,25	205354_at	222,35
204890_s_at	113,70	211868_x_at	187,60	218726_at	145,70	204934_s_at	514,15
213603_s_at	1211,00	215946_x_at	1292,00	213226_at	149,95	214428_x_at	3872,50
209083_at	383,45	215379_x_at	2061,50	203362_s_at	352,40	208451_s_at	6914,50
204192_at	217,25	215121_x_at	11079,50	203418_at	181,30	214053_at	786,50
219014_at	175,30	214677_x_at	11365,50	219918_s_at	291,65	221765_at	419,50
204563_at	227,60	209138_x_at	9658,50	204641_at	388,10	204881_s_at	1222,50
206337_at	125,80	213502_x_at	1891,00	207828_s_at	525,65	221710_x_at	434,60
207339_s_at	189,95	209374_s_at	1252,00	206364_at	160,20	220134_x_at	342,80
209606_at	187,25	205267_at	154,85	204822_at	137,30	218922_s_at	232,70
214617_at	202,75	211635_x_at	144,70	204162_at	107,10	213627_at	1594,00
205488_at	163,55	211634_x_at	165,40	204033_at	419,85	208682_s_at	3416,50
205159_at	308,30	211633_x_at	102,90	212022_s_at	191,15	205696_s_at	228,85
202524_s_at	364,10	211641_x_at	215,10	205046_at	102,20	212637_s_at	297,65
209685_s_at	180,95	217235_x_at	356,15	219148_at	282,35	205355_at	205,10
206978_at	179,60	211430_s_at	8870,50	219978_s_at	268,20	219440_at	333,75
213958_at	220,30	217227_x_at	218,65	218883_s_at	664,10	203439_s_at	785,50
213915_at	77,30	216560_x_at	88,65	209773_s_at	571,60	203438_at	1275,00
213888_s_at	178,80	215214_at	222,70	201890_at	722,20	204541_at	238,75
210140_at	240,45	216853_x_at	181,30	204026_s_at	962,75	210096_at	327,95
204923_at	266,95	216365_x_at	84,40	202503_s_at	1567,50	205376_at	326,25
211795_s_at	185,80	217236_x_at	135,20	203145_at	236,30	40016_g_at	648,60
210164_at	103,30	217258_x_at	120,90	201292_at	563,15	205794_s_at	265,40
205569_at	160,65	216412_x_at	88,90	201291_s_at	345,95	205730_s_at	219,10
204198_s_at	238,70	216542_x_at	414,00	207165_at	300,70	204045_at	932,50
202644_s_at	574,50	215949_x_at	102,95	218663_at	101,00	205472_s_at	83,25
219528_s_at	123,80	217022_s_at	9907,50	209464_at	128,85	205471_s_at	258,30

205821_at	187,10	212592_at	779,45	221436_s_at	146,80	219197_s_at	1823,50
219812_at	149,75	212314_at	407,85	202779_s_at	643,45	203130_s_at	661,65
209795_at	126,30	212311_at	219,65	220651_s_at	98,10	204966_at	217,20
206991_s_at	283,50	205692_s_at	120,45	205394_at	149,10	205206_at	571,30
205798_at	224,10	215118_s_at	108,80	205393_s_at	77,85	221272_s_at	137,30
205758_at	275,00			212949_at	87,75	212448_at	381,75
217143_s_at	124,45			204146_at	153,55	203685_at	1104,50
204882_at	119,00			204023_at	785,00	205933_at	364,70
205038_at	97,90			202107_s_at	696,05	204072_s_at	496,60
220577_at	109,25			202589_at	1045,50	210336_x_at	339,80
214054_at	112,20			219555_s_at	115,20	204199_at	151,50
221698_s_at	256,75			202094_at	154,40	210108_at	181,25
208018_s_at	246,00			204603_at	132,60	204015_s_at	545,15
203471_s_at	258,75			204170_s_at	929,65	204014_at	586,90
219607_s_at	232,60			203358_s_at	182,80	217889_s_at	401,95
215049_x_at	512,95			203276_at	284,35	205158_at	1091,50
203645_s_at	581,25			201710_at	115,35	205141_at	324,35
206715_at	127,85			218585_s_at	510,20	216944_s_at	222,95
205098_at	372,30			218308_at	181,80	211323_s_at	348,05
218232_at	625,70			211814_s_at	115,45	203710_at	640,60
202953_at	829,20			205034_at	166,15	203223_at	167,75
210895_s_at	260,25			219000_s_at	129,35	221959_at	276,45
201422_at	3451,00			203046_s_at	323,50	213651_at	213,40
219386_s_at	211,00			202338_at	357,45	219686_at	204,40
219385_at	169,70			220295_x_at	125,15	204284_at	630,65
206134_at	193,05			206632_s_at	204,35	219414_at	267,10
214560_at	159,90			204318_s_at	104,30	221946_at	89,75
209949_at	183,75			213008_at	202,65	205714_s_at	101,25
211122_s_at	157,00			202240_at	139,85	216663_s_at	157,70
210163_at	144,80			219493_at	84,00	206483_at	254,40

204533_at	1258,00	219105_x_at	217,10	213832_at	242,05
203915_at	1007,50	221521_s_at	320,25	211233_x_at	85,20
202270_at	363,75	203968_s_at	145,65	219587_at	131,40
202269_x_at	534,05	203967_at	108,15	217838_s_at	2118,50
209969_s_at	495,50	209916_at	759,40	214440_at	4210,50
204279_at	905,60	205436_s_at	793,30	209460_at	575,15
202307_s_at	736,10	221922_at	218,70	209459_s_at	668,50
213975_s_at	1507,00	205240_at	136,55	204624_at	251,90
214038_at	201,10	218741_at	167,20	219342_at	487,00
205681_at	82,60	216237_s_at	465,75	218613_at	379,75
206214_at	127,00	201755_at	154,50	203355_s_at	432,80
201487_at	1051,50	209832_s_at	85,60	203354_s_at	130,45
221210_s_at	139,70			204365_s_at	448,90
220330_s_at	210,95			204364_s_at	269,85
205269_at	172,30			209368_at	272,20
204959_at	294,90			221874_at	919,90
215051_x_at	701,45			217014_s_at	2570,00
213095_x_at	469,20			219580_s_at	324,30
209901_x_at	455,50			215300_s_at	92,45
212671_s_at	1278,50			205776_at	348,05
201858_s_at	952,30			206509_at	7153,00
202902_s_at	801,80			201951_at	1266,00
203760_s_at	143,90			221024_s_at	1235,00
207677_s_at	93,55			214858_at	97,15
211336_x_at	152,00			204542_at	687,10
202901_x_at	119,30			216623_x_at	629,65
214084_x_at	141,65			214774_x_at	597,00
210538_s_at	151,80			215108_x_at	395,40
203868_s_at	510,40			209173_at	8185,50
205890_s_at	793,25			205009_at	3121,00

203828_s_at	374,50
205992_s_at	169,50
214995_s_at	134,00
204205_at	388,80
203470_s_at	169,55
207697_x_at	169,90
208885_at	890,30
207419_s_at	171,40
220485_s_at	90,80
206513_at	149,00
205861_at	94,10
205671_s_at	99,20
216598_s_at	477,15
205419_at	116,35
211368_s_at	310,85
211367_s_at	162,05
211656_x_at	1190,00
209823_x_at	643,10
219505_at	985,95

204623_at	1906,00
211110_s_at	735,40
205597_at	797,75
203453_at	1910,00
209114_at	755,00
202718_at	1444,00

b)

Metagenes in Mainz cohort

Sample name	T-cell Metagene	B-cell Metagene	Proliferation Metagene	ER Metagene
BC6001_r	0,688	0,490	1,906	0,499
BC6002_r	0,432	0,081	0,795	1,294
BC6003_r	0,939	2,106	0,727	1,186
BC6004_r	0,881	0,474	0,935	1,213
BC6005_r	0,543	0,186	1,125	1,671
BC6006	1,034	0,810	1,285	1,159
BC6007	1,128	0,397	1,805	0,831
BC6008	4,170	8,551	1,146	0,426
BC6009	0,510	0,492	0,561	1,861
BC6011	0,728	1,335	0,409	1,481
BC6012	0,816	0,833	0,809	0,747
BC6013	0,685	0,732	0,845	1,466
BC6014	0,995	2,824	1,944	0,248
BC6015	0,770	0,372	0,999	1,568
BC6016	0,819	0,690	0,912	1,188
BC6017	0,572	1,553	0,534	1,346
BC6019	1,088	0,691	0,897	1,435
BC6020_3	0,647	1,173	0,773	1,222
BC6021	2,226	3,727	1,227	1,270
BC6022	1,317	0,946	1,854	0,836
BC6024	1,217	2,201	0,475	1,135
BC6025	0,643	0,389	1,211	1,159
BC6026	0,979	1,145	0,838	1,197
BC6027	0,647	0,354	1,594	0,626
BC6028_3	0,714	0,949	1,027	1,640
BC6029	2,083	0,696	3,254	0,246
BC6030	0,968	1,614	1,554	1,844
BC6031	1,897	4,204	1,400	0,738
BC6032	0,668	3,213	0,361	0,944
BC6033	0,609	0,375	0,677	1,098
BC6035	0,737	0,314	1,246	1,670
BC6036	0,621	0,747	0,825	1,794
BC6037	0,617	0,162	1,098	1,333
BC6039	1,516	1,270	1,142	1,064
BC6040	0,929	0,960	0,912	1,153
BC6041	0,785	2,055	1,106	1,228
BC6042	2,372	2,711	1,424	0,629
BC6043	0,605	0,591	2,244	0,726
BC6044	1,789	1,734	0,342	1,198
BC6045	0,995	1,022	0,751	0,774
BC6046	1,250	1,955	1,877	0,245
BC6047	0,615	0,113	0,715	1,420
BC6048	0,658	0,526	1,005	1,566
BC6049	1,074	2,064	0,593	1,237
BC6050	0,617	0,532	1,040	0,994
BC6051_2	0,926	0,529	1,330	0,719
BC6052	0,490	0,253	1,307	2,067
BC6053	0,988	1,760	0,433	1,048
BC6054	0,928	1,259	0,751	1,328
BC6055	0,875	1,894	0,799	1,506
BC6056wdh	1,122	1,252	0,615	1,142
BC6057	0,539	0,072	0,809	1,708

BC6058	1,181	1,837	0,667	1,289
BC6059	0,995	1,018	1,287	1,341
BC6060wdh	5,083	11,228	2,249	0,212
BC6061	1,158	0,463	1,797	0,863
BC6062wdh	5,229	2,684	1,541	0,595
BC6063	0,689	0,999	1,106	1,087
BC6064_2	0,692	0,283	0,622	1,885
BC6065	0,831	1,164	0,432	1,290
BC6066wdh	1,304	1,458	0,836	1,321
BC6067	1,602	1,039	0,626	0,855
BC6068	1,234	3,387	3,234	0,275
BC6069	2,270	1,646	1,444	0,881
BC6070	3,051	6,468	0,960	0,886
BC6071	2,317	3,719	0,388	0,739
BC6072	0,746	1,360	0,646	1,555
BC6073	0,933	1,410	2,143	0,215
BC6074	0,615	0,293	0,771	1,795
BC6075	0,679	0,196	0,637	1,962
BC6076	0,710	0,287	0,632	2,003
BC6077	0,851	0,247	0,704	2,081
BC6078	1,644	2,394	0,339	0,896
BC6079	0,406	0,541	1,435	0,276
BC6080	1,601	2,299	0,865	0,986
BC6081	1,400	1,745	1,062	0,702
BC6082	0,509	0,355	0,510	1,911
BC6083	1,470	0,796	2,368	1,040
BC6084	0,676	1,055	0,818	1,379
BC6085	0,571	0,246	0,776	1,916
BC6086	1,270	1,452	1,233	0,769
BC6087	1,317	1,870	2,913	0,212
BC6088	1,245	0,374	0,637	1,849
BC6089	1,670	1,896	0,490	1,109
BC6091	2,367	11,542	1,346	0,367
BC6092	1,009	1,677	0,860	1,265
BC6093	0,857	4,251	0,364	1,310
BC6094	0,972	2,422	0,596	1,035
BC6095	0,545	0,654	1,171	0,692
BC6096	1,538	1,924	1,007	1,226
BC6097	0,464	0,143	0,563	1,651
BC6098	0,526	0,747	2,207	0,260
BC6099	3,892	3,188	1,451	0,228
BC6100	0,619	1,197	0,283	1,173
BC6101wdh	0,871	1,931	0,384	0,991
BC6102	1,826	1,483	1,532	0,677
BC6103	0,864	0,706	0,668	1,148
BC6104	0,680	0,353	0,524	1,114
BC6105	1,368	2,472	3,691	0,257
BC6106	2,146	0,675	2,057	0,922
BC6107	0,640	0,426	1,437	0,963
BC6108	3,010	1,360	2,601	0,249
BC6109	1,858	1,233	1,542	0,484
BC6110	0,971	1,347	1,011	1,372
BC6111	1,896	7,792	1,450	0,459
BC6112	0,782	0,619	2,462	0,663
BC6114	0,309	0,069	0,796	1,394
BC6115	1,798	3,128	1,339	0,899
BC6116wdh	0,491	0,110	0,999	1,018

BC6117	3,520	4,149	1,410	0,349
BC6118	2,662	3,292	1,167	0,588
BC6119	1,866	2,120	2,308	0,737
BC6120	0,958	0,230	0,818	1,590
BC6121	1,517	2,141	1,041	0,860
BC6122	0,800	0,359	1,615	1,212
BC6125	0,361	0,302	1,473	1,744
BC6126wdh	1,178	1,007	0,868	0,495
BC6127	0,483	0,431	1,119	1,481
BC6129	1,354	0,585	2,031	1,354
BC6130	1,483	1,708	0,940	1,169
BC6131	2,104	15,900	1,380	0,351
BC6132	0,390	0,510	0,983	1,481
BC6133	0,797	0,825	2,379	0,767
BC6134	1,107	1,046	0,537	1,118
BC6136	1,815	3,814	2,595	0,180
BC6138	0,558	0,563	0,902	1,354
BC6139	0,816	0,573	1,121	1,085
BC6140	2,161	1,267	0,957	0,909
BC6141	0,628	0,704	1,115	1,210
BC6142	2,321	3,858	1,704	0,356
BC6144	0,464	0,419	0,649	1,208
BC6145	0,464	0,162	0,811	1,244
BC6146wdh	0,562	0,549	0,719	1,333
BC6147	1,178	0,593	1,361	1,283
BC6148	1,393	3,793	1,738	0,742
BC6150	1,756	4,480	1,947	0,243
BC6151wdh	1,433	3,265	0,588	0,852
BC6152	0,846	0,901	1,750	0,578
BC6154	2,678	5,524	1,886	0,234
BC6155	1,029	0,238	0,788	0,892
BC6156	2,239	1,011	1,485	0,750
BC6157	0,709	1,306	0,794	1,218
BC6158	1,021	0,318	0,777	1,250
BC6159	0,844	1,855	1,179	1,239
BC6161	1,986	1,211	0,524	1,016
BC6162	1,320	0,755	1,338	0,719
BC6163	1,252	0,634	1,589	0,871
BC6164_wdh	0,878	0,391	1,005	1,629
BC6165	1,555	1,853	0,330	0,948
BC6166	1,422	0,249	1,462	0,986
BC6167	3,152	6,782	1,271	0,709
BC6170	0,882	0,579	1,169	1,039
BC6171	0,812	1,148	3,495	0,512
BC6173	1,604	4,571	1,282	0,745
BC6174	2,354	18,174	1,229	0,724
BC6176	2,527	6,124	3,069	0,245
BC6177	0,692	2,805	0,589	1,341
BC6178	1,543	1,956	1,088	1,148
BC6179	1,266	1,122	0,829	1,036
BC6180	1,598	1,445	0,952	1,139
BC6181	0,796	1,363	0,717	1,425
BC6182	2,588	4,323	0,792	0,919
BC6183	2,338	10,545	0,481	0,323
BC6184	1,280	0,527	0,686	1,175
BC6185	0,580	0,117	0,940	1,456
BC6186	0,681	0,265	2,381	0,938

BC6187	0,433	0,162	1,898	1,097
BC6188	1,151	1,900	0,408	1,127
BC6189	1,089	1,255	0,272	1,092
BC6190	0,798	0,367	0,513	1,210
BC6191	0,659	0,066	1,606	2,015
BC6192	1,033	0,931	1,001	1,298
BC6193	0,901	0,321	1,381	0,756
BC6196	0,835	1,170	0,587	1,061
BC6197	1,027	1,973	0,366	0,963
BC6198	0,922	0,674	0,811	1,064
BC6199	0,682	0,639	0,873	1,659
BC6200	0,988	0,763	0,783	0,985
BC6201	0,937	1,360	2,178	0,329
BC6203	2,420	1,151	0,852	1,433
BC6204	4,489	4,852	1,425	0,800
BC6205	1,093	0,682	0,827	0,984
BC6206	1,006	0,260	0,931	0,588
BC6207	1,610	1,693	1,124	0,747
BC6208	0,879	0,112	0,869	1,134
BC6210	0,421	0,376	1,868	1,470
BC6211	0,780	2,060	0,364	1,156
BC6212	0,988	0,824	0,684	1,468
BC6214	1,499	1,275	1,978	0,853
BC6216	0,851	0,708	0,320	1,589
BC6217	1,019	0,322	0,905	0,898
BC6218	0,692	1,390	0,461	0,952
BC6219	1,219	0,996	2,505	0,183
BC6220	0,638	0,874	0,623	1,372
BC6221	0,800	0,116	1,088	1,129
BC6224	0,572	0,169	3,541	0,754
BC6227_2	1,092	0,350	2,973	0,211
BC6230	1,094	0,304	2,159	1,297
BC6231	1,272	0,666	0,407	1,140
BC6232	1,002	1,264	1,039	1,530