

Table S1 Coverage and depth of WGS in the 100 type A AAD patient

Sample:	Average depth:	Coverage	Coverage_at_least_4X	Coverage_at_least_10X	Coverage_at_least_20X
A125	30.84	99.70%	99.31%	96.89%	81.47%
A130	33.41	98.96%	98.44%	95.78%	81.59%
A131	38.59	99.02%	98.70%	97.68%	92.04%
A137	31.76	99.71%	99.28%	96.99%	84.51%
A162	31.72	98.99%	98.55%	96.51%	83.94%
A163	31.5	99.67%	98.89%	94.49%	75.82%
A168	41.26	99.04%	98.75%	97.99%	94.24%
A173	36.44	99.77%	99.52%	98.49%	91.04%
A174	31.96	99.73%	99.46%	98.13%	88.04%
A180	30.59	98.91%	98.36%	95.32%	78.69%
A185	32.39	98.98%	98.63%	97.28%	87.88%
A197	29.8	99.64%	98.59%	92.81%	71.44%
A199	29.89	99.58%	98.42%	91.70%	68.95%
A201	33.04	98.99%	98.58%	97.01%	86.55%
A203	32.02	99.70%	99.41%	97.96%	87.40%
A204	37.47	99.76%	99.51%	98.44%	90.95%
A209	31.69	99.74%	99.34%	97.02%	84.03%
A217	31.79	99.68%	99.25%	96.70%	82.11%
A223	31.11	99.70%	99.07%	95.21%	77.12%
A228	32.29	98.93%	98.22%	94.86%	80.85%
A229	31.38	99.74%	99.39%	97.50%	85.64%
A234	37.17	99.68%	99.28%	97.58%	88.68%
A239	35.41	98.93%	98.55%	96.98%	87.15%
A242	32.3	99.70%	99.20%	96.26%	81.10%
A246	29.92	99.71%	99.19%	96.24%	79.93%
A260	31.23	98.99%	98.67%	97.61%	89.11%
A263	35.04	99.66%	99.04%	95.90%	82.99%
A273	41.94	98.98%	98.64%	97.62%	92.50%
A280	30.85	99.00%	98.55%	96.38%	82.61%
A281	30.58	99.64%	99.20%	96.58%	81.76%
A282	31.58	98.99%	98.59%	96.85%	85.80%
A283	34.06	99.71%	99.32%	97.32%	85.90%
A287	31.69	99.68%	99.16%	96.16%	81.21%
A288	30.37	99.60%	98.66%	93.44%	73.34%
A290	33.24	99.02%	98.77%	98.10%	92.47%
A291	31.86	98.99%	98.38%	95.22%	80.51%
A292	39.85	99.70%	99.30%	97.32%	87.30%
A295	30.64	99.67%	99.07%	95.32%	77.40%
A299	35.41	99.69%	99.18%	96.41%	82.99%
A302	29.99	98.30%	95.20%	85.66%	63.78%
A303	31.67	99.72%	99.44%	98.03%	87.56%
A308	30.48	99.63%	98.69%	93.32%	72.25%
A309	30.36	99.71%	99.12%	95.38%	76.20%
A311	30.39	99.49%	98.09%	91.22%	69.16%
A313	30.48	98.97%	98.62%	97.04%	83.59%
A315	38.62	99.74%	99.49%	98.48%	91.64%
A320	30.91	99.67%	99.30%	97.18%	83.82%
A321	31.62	98.96%	98.51%	96.22%	81.75%
A340	31.26	99.63%	99.08%	95.88%	79.57%
A342	30.41	99.65%	99.24%	96.83%	82.17%
A343	37.2	98.92%	98.46%	96.37%	86.05%
A349	36.04	99.61%	98.95%	95.44%	80.66%
A402	32.34	99.50%	98.03%	91.08%	70.34%
A403	33.12	98.96%	98.05%	93.79%	78.68%
A406	30.48	98.90%	98.20%	94.48%	76.68%
A416	32.15	99.65%	99.02%	95.35%	78.72%
A426	30.38	99.75%	99.47%	98.00%	86.79%
A430	35.92	99.62%	98.93%	95.15%	79.73%
A432	33.22	98.99%	98.48%	95.88%	80.85%
A433	31.31	98.99%	98.50%	96.26%	83.16%
A434	40.59	99.74%	99.52%	98.77%	93.68%
A436	32.16	99.69%	99.26%	96.71%	82.02%
A437	31.68	99.69%	99.25%	96.83%	84.14%
A438	34.19	98.93%	98.51%	96.57%	85.02%
A443	33.28	99.68%	99.02%	95.32%	78.88%
A444	33.52	99.75%	99.47%	98.12%	88.47%
A445	30.53	98.94%	98.59%	97.16%	86.40%
A448	31.65	98.96%	98.29%	95.00%	78.01%
A451	30.57	99.00%	98.58%	96.54%	82.84%
A452	30.98	98.97%	98.60%	96.93%	84.74%
A453	32.52	99.69%	99.16%	96.20%	81.13%
A454	30.36	99.76%	99.48%	97.86%	85.88%
A457	31.52	99.66%	98.84%	94.19%	75.82%
A458	31.01	99.69%	99.20%	96.23%	80.14%
A459	31.45	99.68%	99.02%	95.41%	79.15%
A462	33.17	99.54%	98.45%	93.20%	75.16%
A469	30.9	99.72%	99.28%	96.68%	81.69%
A476	35.02	98.94%	98.25%	95.50%	83.33%
A479	32.61	99.52%	98.22%	91.96%	71.85%
A480	30.85	99.00%	98.57%	96.58%	83.47%
A482	30.95	98.89%	98.19%	94.50%	76.60%
A483	31.06	99.65%	99.13%	95.91%	79.24%
A484	33.41	99.62%	98.96%	95.33%	79.77%
A485	33.47	99.02%	98.68%	97.38%	89.49%
A486	32.14	98.95%	98.29%	94.90%	77.42%
A488	29.7	99.64%	98.56%	92.40%	69.91%
A55	30.69	99.68%	99.38%	97.74%	85.72%
A58	31.79	99.00%	98.66%	97.11%	88.11%
A60	33.03	98.98%	98.53%	96.45%	86.06%
A62	30.17	99.54%	98.47%	93.09%	73.17%
A64	30.94	98.96%	98.48%	96.28%	83.66%
A65	31.91	99.74%	99.45%	97.69%	86.14%
A66	34.75	99.76%	99.56%	98.63%	90.96%
A67	31.57	99.62%	98.71%	94.16%	75.64%
A69	32.47	99.01%	98.66%	97.38%	86.72%
A73	32.96	99.74%	99.44%	98.05%	88.55%
A79	30.9	99.31%	96.33%	86.32%	66.24%
A89	32.85	99.54%	98.09%	91.82%	72.21%
A93	30.62	98.74%	93.85%	82.06%	63.44%
A95	31.74	99.34%	97.44%	89.83%	68.87%

Table S2 Coverage and depth for mutated genes in the specific sample

Sample Name	Gene Name	Coverage	Average_depth
A130	<i>ACTA2</i>	99.87%	30.2246
A131	<i>EFEMP2</i>	100.00%	43.645
A137	<i>MYLK</i>	99.93%	29.7771
A163	<i>COL5A2</i>	99.88%	20.84
A180	<i>COL3A1</i>	99.73%	20.5221
A180	<i>PLOD3</i>	100.00%	38.8249
A185	<i>COL5A1</i>	99.94%	33.8456
A197	<i>MYLK</i>	99.93%	31.5416
A199	<i>ACTA2</i>	99.91%	28.695
A199	<i>COL1A2</i>	100.00%	24.2759
A199	<i>ELN</i>	100.00%	43.9571
A199	<i>MYLK</i>	99.93%	36.5527
A201	<i>ELN</i>	100.00%	36.8722
A203	<i>FBN1</i>	99.85%	30.1679
A209	<i>MYLK</i>	99.96%	33.3259
A217	<i>TGFBR1</i>	99.91%	28.6477
A239	<i>ELN</i>	100.00%	39.8526
A242	<i>MYLK</i>	99.96%	33.8056
A246	<i>FBN2</i>	99.92%	25.7389
A246	<i>TGFB3</i>	100.00%	33.7657
A260	<i>MYLK</i>	99.94%	28.324
A263	<i>MYH11</i>	99.97%	37.2004
A282	<i>COL5A1</i>	99.96%	31.8914
A282	<i>FBN2</i>	99.95%	28.0741
A290	<i>TGFBR2</i>	99.92%	30.0931
A291	<i>COL1A2</i>	100.00%	26.6247
A291	<i>FBN1</i>	99.91%	28.0966
A291	<i>TGFBR2</i>	99.92%	30.6375
A295	<i>ELN</i>	100.00%	34.95
A295	<i>MYH11</i>	99.97%	32.0569
A309	<i>COL5A1</i>	99.99%	41.9906
A313	<i>MYH11</i>	99.97%	30.3203
A315	<i>MYH11</i>	100.00%	36.8508
A320	<i>PLOD3</i>	100.00%	29.5451
A342	<i>EFEMP2</i>	100.00%	31.1949
A342	<i>FBN1</i>	99.85%	28.9298
A349	<i>COL1A1</i>	100.00%	49.4951
A349	<i>COL1A2</i>	99.87%	26.4775
A349	<i>PLOD1</i>	99.55%	40.2722
A403	<i>FBN1</i>	99.82%	27.453
A406	<i>ACTA2</i>	99.90%	29.3615
A430	<i>FBN2</i>	99.79%	27.226
A434	<i>FBN1</i>	99.95%	36.0172
A436	<i>COL5A1</i>	99.95%	38.768
A437	<i>MYH11</i>	100.00%	26.2422
A445	<i>MYH11</i>	99.97%	26.4547
A448	<i>FLNA</i>	100.00%	53.5832
A451	<i>ACTA2</i>	99.87%	28.7851
A457	<i>FBN2</i>	99.88%	24.9377
A457	<i>NOTCH1</i>	99.99%	53.8418
A458	<i>COL5A1</i>	99.98%	37.4503
A458	<i>FBN1</i>	99.89%	25.9181
A459	<i>COL5A1</i>	99.95%	34.3485
A476	<i>ACTA2</i>	99.91%	33.03
A480	<i>COL3A1</i>	99.66%	21.5959
A480	<i>MYLK</i>	99.94%	31.0416
A483	<i>FBN1</i>	99.87%	28.056
A483	<i>MYH11</i>	99.99%	32.7046
A485	<i>MYH11</i>	99.97%	28.121
A486	<i>FBN1</i>	99.86%	25.8944
A486	<i>MYH11</i>	99.97%	33.7559
A58	<i>PLOD3</i>	100.00%	27.2218
A64	<i>TGFBR1</i>	99.92%	28.6646
A65	<i>COL1A1</i>	100.00%	31.4589
A65	<i>FBN1</i>	99.98%	29.6789
A73	<i>FBN1</i>	99.93%	31.129
A79	<i>FBN2</i>	99.38%	21.545
A95	<i>ELN</i>	99.95%	47.263

Table S3 Summary of the Quality Control for WGS

Sample name	Raw reads	Raw data(G)	Effective(%)	Error(%)	Q20(%)	Q30(%)	GC(%)
A234	68242360	112.47	99.72	0.03;0.06	95.99;90.46	90.86;80.95	42.42;42.53
A234	64207401		99.77	0.02;0.05	96.39;92.12	91.73;83.19	42.47;42.59
A234	65852300		99.76	0.02;0.05	96.48;92.09	91.89;83.18	42.50;42.63
A234	66726903		99.76	0.02;0.05	96.27;91.96	91.43;83.08	42.48;42.58
A234	109876053		99.75	0.02;0.05	96.27;92.15	91.62;83.43	42.43;42.57
A131	53392265	115.13	99.93	0.02;0.04	98.09;95.16	94.45;87.25	41.86;41.79
A131	85589822		99.35	0.02;0.06	96.28;90.90	91.59;81.43	42.31;42.39
A131	88670286		99.34	0.02;0.06	96.38;90.94	91.77;81.52	42.32;42.41
A131	85990756		99.33	0.02;0.06	96.17;90.76	91.31;81.36	42.32;42.37
A131	70107025		99.34	0.02;0.06	96.15;90.86	91.45;81.60	42.29;42.34
A130	44030048	100.21	99.35	0.02;0.03	97.22;94.28	93.60;87.77	43.81;43.79
A130	41734353		99.49	0.02;0.04	96.69;92.25	92.44;84.46	43.51;43.54
A130	50701573		98.99	0.02;0.03	97.15;94.17	93.23;87.28	43.67;43.69
A130	67145722		99.52	0.02;0.03	97.34;94.97	93.42;88.41	43.23;43.37
A130	66333103		99.47	0.02;0.03	97.16;94.21	93.09;87.60	43.25;43.33
A130	64086096		99.4	0.02;0.03	97.43;95.56	93.68;89.55	43.26;43.38
A137	36344886	95.98	99.1	0.03;0.06	96.18;91.02	91.24;81.53	41.80;41.75
A137	27100252		99.92	0.02;0.04	97.87;95.15	93.81;86.72	41.54;41.51
A137	33367492		98.77	0.03;0.07	95.68;90.69	90.28;80.89	41.93;42.05
A137	58010578		98.55	0.02;0.05	97.17;92.50	93.38;83.91	41.75;41.80
A137	53610876		98.65	0.02;0.04	97.57;93.17	94.18;84.95	41.74;41.75
A137	57610035		99.9	0.02;0.05	98.74;95.22	95.85;85.26	41.38;41.36
A137	53898804		98.8	0.02;0.04	96.87;92.87	92.65;84.57	41.77;41.81
A239	18725303	106.09	99.56	0.02;0.02	97.75;96.86	94.37;92.50	42.81;42.86
A239	87333011		99.56	0.02;0.02	98.07;96.75	95.08;92.14	42.82;42.91
A239	53408888		99.55	0.02;0.02	98.08;96.64	95.08;92.03	42.79;42.88
A239	53320486		99.55	0.02;0.02	98.09;96.55	95.12;91.81	42.77;42.84
A239	53488462		99.55	0.02;0.02	98.07;96.69	95.07;92.10	42.80;42.88
A239	33972412		99.56	0.02;0.02	97.76;96.78	94.39;92.25	42.83;42.90
A239	34447609		99.57	0.02;0.02	97.85;96.90	94.61;92.66	42.82;42.89
A239	18934867		99.56	0.02;0.02	97.78;96.83	94.48;92.59	42.76;42.83
A79	30485312	96.35	95.76	0.02;0.05	96.45;92.14	91.97;83.65	45.24;45.30
A79	80103931		96	0.02;0.05	96.82;92.17	92.60;83.48	45.27;45.35
A79	84538747		95.81	0.02;0.04	97.03;93.19	93.08;85.19	45.27;45.36
A79	48911286		96.5	0.02;0.05	96.52;91.51	92.27;83.07	45.34;45.49
A79	77118243		96.08	0.02;0.05	96.67;92.28	92.40;83.92	45.24;45.29
A73	50458521	99.34	99.22	0.02;0.03	96.97;93.87	92.87;86.62	41.87;41.98
A73	63529197		99.18	0.02;0.03	97.18;94.12	93.29;87.03	41.80;41.87
A73	70076687		99.17	0.02;0.03	97.37;93.73	93.75;86.48	41.78;41.84
A73	48992172		99.24	0.02;0.03	97.17;94.50	93.28;87.66	41.75;41.86
A73	52790685		99.27	0.02;0.03	96.97;94.14	92.71;86.90	41.62;41.72
A73	45281135		99.12	0.02;0.03	96.98;94.13	92.76;86.87	41.46;41.56

A436	40976015	97.66	98.89	0.02;0.04	96.68;93.40	92.32;86.26	42.69;42.72
A436	45213994		98.84	0.02;0.04	96.76;93.57	92.36;86.43	42.73;42.77
A436	45563698		98.85	0.02;0.04	96.73;93.61	92.33;86.46	42.73;42.78
A436	60721181		98.92	0.02;0.03	97.02;94.15	92.96;87.46	42.66;42.68
A436	45679411		98.99	0.02;0.04	96.53;93.58	92.16;86.63	42.67;42.73
A436	87673017		99.28	0.03;0.10	95.05;88.37	88.57;77.18	42.58;42.71
A437	44356511	94.64	99.89	0.02;0.05	98.13;94.85	94.36;86.29	40.93;40.83
A437	48293615		99.89	0.02;0.05	98.08;94.81	93.67;85.23	40.96;40.88
A437	50094644		99.89	0.02;0.05	98.12;94.67	93.77;84.95	40.92;40.84
A437	49957020		99.89	0.02;0.05	98.03;94.71	93.59;84.96	40.93;40.84
A437	41487112		99.91	0.02;0.05	98.21;94.41	94.55;85.44	41.02;40.89
A437	81274497		99.2	0.03;0.11	95.72;87.52	90.17;75.97	41.63;41.73
A434	70584320	122.7	99.49	0.02;0.06	96.27;91.14	91.65;81.83	41.37;41.47
A434	69666916		99.35	0.02;0.07	96.57;90.63	92.17;81.19	41.41;41.53
A434	54375032		99.4	0.02;0.06	96.62;91.32	92.33;82.42	41.38;41.51
A434	74718728		99.4	0.02;0.06	96.68;91.52	92.38;82.72	41.46;41.54
A434	73089078		99.41	0.02;0.06	96.68;91.46	92.38;82.61	41.42;41.48
A434	66562983		99.48	0.03;0.07	95.22;90.14	89.42;80.45	41.36;41.47
A432	71505018	100.98	99.91	0.02;0.04	97.99;95.20	94.18;87.27	42.86;42.82
A432	87397410		99.15	0.02;0.06	96.20;91.15	91.41;81.74	43.29;43.37
A432	90155159		99.12	0.02;0.06	96.31;91.17	91.59;81.79	43.32;43.41
A432	87536087		99.11	0.02;0.06	96.10;91.01	91.14;81.66	43.31;43.37
A433	49548787	94.42	99.31	0.02;0.06	96.57;90.06	91.96;80.22	42.66;42.71
A433	57683603		99.47	0.02;0.06	96.96;92.20	92.53;82.49	42.71;42.82
A433	55880619		99.49	0.02;0.06	96.62;91.18	91.85;80.95	42.66;42.78
A433	55857603		99.47	0.02;0.06	96.79;91.92	92.10;81.96	42.67;42.79
A433	49468402		99.5	0.02;0.04	97.19;93.36	93.28;85.46	42.70;42.73
A433	46295831		99.57	0.03;0.10	95.76;89.17	90.15;78.42	42.88;43.16
A430	67698907	109.18	98.74	0.02;0.04	96.61;93.49	91.77;86.24	44.08;44.18
A430	74706659		98.7	0.02;0.04	97.25;94.27	92.99;87.11	44.09;44.14
A430	73653106		98.67	0.02;0.03	97.41;95.55	93.34;89.23	44.11;44.18
A430	75389941		98.76	0.02;0.03	97.24;94.90	93.00;88.42	44.09;44.15
A430	72472325		98.73	0.02;0.03	97.23;95.30	93.07;89.02	44.03;44.11
A438	71118424	102.92	99.38	0.02;0.02	97.68;96.60	94.30;92.09	42.93;42.99
A438	70682552		99.39	0.02;0.02	97.73;96.75	94.42;92.37	42.88;42.95
A438	35391375		99.24	0.02;0.03	96.56;94.43	91.95;88.07	43.09;43.12
A438	39135906		99.24	0.02;0.03	96.59;94.95	92.06;88.96	43.11;43.16
A438	39831610		99.21	0.02;0.03	96.12;93.62	91.17;86.91	43.17;43.21
A438	54072627		99.22	0.02;0.04	96.28;93.18	91.54;86.28	43.17;43.22
A438	32829562		99.34	0.03;0.04	95.62;91.70	90.55;84.83	43.14;43.31
A454	77236638	91.76	99.2	0.03;0.07	95.44;90.16	89.85;80.26	41.44;41.60
A454	69457963		99.37	0.03;0.07	95.62;90.47	90.05;80.61	41.39;41.54
A454	71388505		99.32	0.03;0.06	95.76;91.04	90.43;81.49	41.44;41.57
A454	75414241		99.31	0.03;0.06	95.62;91.12	90.19;81.60	41.38;41.51
A454	12373885		99.37	0.03;0.09	95.67;89.02	90.07;78.31	41.32;41.31

A457	79579423	99.23	95.49	0.02;0.06	96.26;90.83	91.62;81.39	43.84;43.91
A457	85985447		95.81	0.02;0.06	96.59;90.81	92.14;81.17	43.86;43.95
A457	87890450		95.54	0.02;0.05	96.81;91.98	92.63;83.04	43.85;43.95
A457	47542559		96.21	0.02;0.06	96.54;91.39	92.08;82.08	43.87;43.97
A457	29781659		95.87	0.02;0.06	96.47;90.91	92.05;81.61	43.84;43.89
A451	30004365	92.14	99.61	0.02;0.04	97.07;92.02	93.32;83.75	42.36;42.52
A451	50796087		99.61	0.02;0.05	96.91;91.91	93.05;83.64	42.39;42.63
A451	60405535		99.6	0.02;0.05	96.72;91.07	92.81;82.63	42.43;42.73
A451	33002594		99.61	0.02;0.06	96.20;89.36	91.98;80.37	42.39;42.76
A451	36170805		99.92	0.02;0.03	98.81;96.23	96.30;89.27	42.17;42.12
A451	26592627		99.92	0.02;0.03	98.82;96.24	96.35;89.35	42.18;42.13
A451	25585068		99.92	0.02;0.03	98.75;96.13	96.16;89.17	42.14;42.09
A451	29905036		99.58	0.02;0.05	96.74;91.02	92.74;82.31	42.38;42.59
A451	14682947		99.59	0.02;0.06	95.93;90.96	90.97;81.50	42.54;42.68
A452	61387344	93.82	98.31	0.02;0.03	96.10;94.05	90.92;86.88	42.28;42.34
A452	53040159		98.23	0.02;0.04	96.32;94.12	91.36;86.72	42.28;42.38
A452	52831078		98.31	0.02;0.04	96.67;93.64	92.01;86.29	42.26;42.33
A452	56251942		98.31	0.02;0.04	96.84;93.75	92.37;86.41	42.29;42.36
A452	55036401		98.29	0.02;0.04	96.61;93.77	91.96;86.37	42.25;42.28
A452	34246412		99.12	0.03;0.14	95.64;85.82	90.01;73.78	42.15;42.22
A453	76970385	98.25	99.56	0.02;0.05	97.16;92.23	93.32;83.33	43.10;43.33
A453	56129530		99.86	0.02;0.05	98.78;94.96	95.92;84.65	42.63;42.67
A453	71164280		99.56	0.02;0.05	96.83;92.60	92.58;84.01	43.10;43.28
A453	61393979		99.67	0.02;0.05	96.32;90.74	92.18;82.62	43.12;43.46
A453	61836793		99.65	0.02;0.05	96.33;90.33	92.15;82.01	43.18;43.54
A458	39043563	92.5	99.6	0.02;0.05	97.24;92.56	93.50;83.97	42.76;42.88
A458	61485237		99.86	0.02;0.05	98.98;94.91	96.48;84.38	42.28;42.32
A458	57215545		99.87	0.02;0.05	98.88;94.89	96.18;84.24	42.31;42.35
A458	74389398		99.59	0.02;0.05	97.28;93.09	93.40;84.53	42.72;42.81
A458	76202971		99.61	0.02;0.04	97.32;93.38	93.52;85.13	42.72;42.81
A459	47152897	94.68	98.57	0.02;0.04	97.39;93.18	93.81;84.97	43.05;43.08
A459	63363532		99.21	0.02;0.05	98.82;95.00	96.06;84.61	42.41;42.43
A459	59263627		99.55	0.02;0.05	98.71;94.98	95.74;84.44	42.51;42.52
A459	71913221		98.75	0.02;0.05	97.05;93.03	92.93;84.46	43.02;43.04
A459	73897448		98.76	0.02;0.04	97.09;93.31	93.05;85.07	43.02;43.04
A349	98406592	108.16	99.6	0.02;0.03	97.68;94.96	94.13;88.38	43.83;43.96
A349	89846107		99.48	0.02;0.03	97.70;95.59	94.26;89.57	43.83;43.97
A349	106733071		99.39	0.02;0.03	97.32;95.62	93.45;89.87	44.10;44.20
A349	65539061		99.37	0.02;0.03	97.35;96.00	93.46;90.58	44.08;44.18
A223	73301572	92.49	99.55	0.02;0.05	97.15;92.33	93.33;83.52	43.64;43.79
A223	91020493		99.54	0.02;0.05	97.53;92.89	94.09;84.41	43.65;43.72
A223	48900977		99.86	0.02;0.05	98.76;95.03	95.86;84.84	43.18;43.19
A223	70329257		99.56	0.02;0.05	96.82;92.67	92.54;84.13	43.64;43.76
A223	24764326		99.63	0.03;0.12	95.45;87.73	89.61;76.36	43.70;43.79
A340	57098550	94.77	99.13	0.02;0.04	96.71;93.64	92.21;86.51	42.80;42.87

A340	68838906		99.12	0.02;0.03	96.65;93.61	92.29;86.97	42.78;42.92
A340	71025028		99.09	0.02;0.03	97.22;95.01	93.26;88.81	42.77;42.86
A340	69301301		99.14	0.02;0.04	96.78;92.20	92.54;85.08	42.80;42.96
A340	49630265		99.12	0.02;0.03	97.29;94.44	93.50;88.42	42.79;42.90
A342	51958685	91.3	99.55	0.02;0.04	96.55;93.14	91.98;85.85	42.44;42.49
A342	50929933		99.56	0.02;0.04	96.27;92.12	91.49;84.35	42.43;42.54
A342	51483409		99.57	0.02;0.05	96.14;91.16	91.33;83.12	42.39;42.57
A342	36597423		99.61	0.02;0.02	97.74;96.80	94.36;92.38	42.23;42.29
A342	76086767		99.61	0.02;0.02	98.00;96.56	94.94;91.79	42.25;42.32
A342	37274956		99.61	0.02;0.02	97.77;96.75	94.46;92.42	42.17;42.25
A343	85082996	112.38	99.09	0.02;0.02	97.69;96.21	94.32;91.29	43.36;43.44
A343	104140588		99.08	0.02;0.02	97.75;96.38	94.44;91.58	43.31;43.39
A343	124507160		99.07	0.02;0.02	97.48;95.66	93.97;90.56	43.29;43.36
A343	60871862		99.06	0.02;0.03	96.79;94.09	92.70;87.57	43.34;43.41
A229	59632846	93.17	99.61	0.02;0.06	96.84;91.51	92.29;81.22	41.93;42.08
A229	47578910		99.91	0.02;0.04	98.59;95.50	95.32;86.52	41.42;41.37
A229	57415113		99.62	0.02;0.06	96.66;91.19	91.84;80.61	41.89;42.05
A229	50995314		99.66	0.02;0.06	96.55;91.25	91.64;80.80	41.90;42.06
A229	49937486		99.68	0.02;0.06	96.54;91.18	91.63;80.95	41.92;42.10
A229	45015187		99.63	0.03;0.09	95.83;89.04	90.36;78.23	42.03;42.11
A228	72175632	97.11	99.91	0.02;0.05	97.95;94.94	93.96;86.26	43.02;43.03
A228	71565360		99.93	0.02;0.05	98.01;94.79	94.06;86.08	42.98;43.01
A228	89609552		98.46	0.03;0.07	95.88;90.29	90.63;80.22	43.52;43.74
A228	90355432		98.44	0.03;0.07	95.69;90.29	90.30;80.22	43.47;43.68
A69	40969558	96.77	99.65	0.02;0.04	96.45;93.14	91.74;85.65	42.34;42.42
A69	51677202		99.6	0.02;0.04	96.41;93.09	91.84;86.06	42.30;42.47
A69	52720145		99.58	0.02;0.03	96.98;94.50	92.81;87.89	42.28;42.40
A69	51712430		99.63	0.02;0.04	96.52;91.52	92.06;83.97	42.32;42.52
A69	36394820		99.59	0.02;0.03	97.04;93.82	93.02;87.38	42.31;42.44
A69	89104327		99.7	0.03;0.10	94.97;88.87	88.48;77.88	42.30;42.48
A64	42148707	92.57	99.93	0.02;0.04	98.67;95.23	95.71;86.55	41.77;41.71
A64	71112238		99.66	0.02;0.05	97.09;92.09	93.00;82.76	42.17;42.28
A64	63750299		99.93	0.02;0.04	98.56;95.30	95.24;86.08	41.73;41.69
A64	63625095		99.93	0.02;0.04	98.60;95.40	95.34;86.42	41.77;41.74
A64	57194843		99.68	0.02;0.05	97.11;91.98	93.14;83.02	42.20;42.29
A64	10741781		99.68	0.03;0.11	95.85;88.13	90.40;76.86	42.33;42.45
A65	37370914	95.55	99.92	0.02;0.05	98.33;94.84	94.91;85.61	40.96;40.82
A65	65198722		99.61	0.02;0.06	96.53;90.66	91.84;80.46	41.34;41.35
A65	57701595		99.91	0.02;0.05	98.19;94.95	94.37;85.24	40.90;40.82
A65	57545782		99.91	0.02;0.05	98.28;95.05	94.57;85.60	40.95;40.87
A65	52708754		99.63	0.02;0.06	96.65;90.70	92.19;80.97	41.38;41.39
A65	47972906		99.67	0.03;0.14	95.01;86.15	88.82;74.05	41.44;41.52
A66	34818045	104.89	99.94	0.02;0.04	98.02;95.33	94.28;87.57	40.94;40.88
A66	80564078		99.52	0.02;0.06	96.34;91.56	91.71;82.50	41.32;41.36
A66	86566901		99.52	0.02;0.06	96.58;91.81	92.18;82.93	41.32;41.35

A66	80614429		99.55	0.02;0.05	96.48;91.87	91.90;82.94	41.32;41.37
A66	67075416		99.5	0.02;0.06	96.41;91.42	91.79;82.22	41.37;41.42
A67	63343821	95.54	99.12	0.02;0.03	96.99;93.98	92.89;86.89	44.09;44.23
A67	84938828		99.06	0.02;0.03	97.21;94.74	93.42;88.32	44.13;44.23
A67	60412548		99.16	0.02;0.03	97.19;94.60	93.30;87.91	43.95;44.09
A67	53514731		99.19	0.02;0.03	96.99;94.24	92.74;87.15	43.80;43.93
A67	56260722		99.02	0.02;0.03	97.01;94.23	92.79;87.11	43.61;43.75
A60	46115073	98.37	99.85	0.02;0.05	98.18;94.72	94.49;86.01	41.47;41.35
A60	52712389		99.87	0.02;0.05	98.43;94.86	95.07;86.26	41.54;41.42
A60	45005418		99.87	0.02;0.05	98.29;94.26	94.73;85.12	41.56;41.44
A60	47197675		99.9	0.02;0.06	98.09;94.04	94.16;84.01	41.63;41.60
A60	56407763		99.91	0.02;0.05	98.17;94.94	94.45;86.17	41.81;41.78
A60	80448967		99.06	0.02;0.06	96.08;91.25	91.25;82.11	42.26;42.32
A62	60496294	91.6	98.9	0.02;0.04	96.95;93.47	92.53;85.99	43.54;43.77
A62	59405872		98.92	0.02;0.05	96.86;92.91	92.26;84.67	43.52;43.74
A62	59865007		98.93	0.02;0.05	96.85;92.85	92.14;84.23	43.54;43.76
A62	59603505		98.93	0.02;0.05	96.89;92.58	92.27;83.99	43.54;43.75
A62	55604155		99.03	0.02;0.04	97.03;94.35	92.71;87.38	43.63;43.68
A62	10371652		98.85	0.02;0.03	97.36;94.90	93.81;88.74	44.04;44.10
A174	45232840	97.03	98.86	0.03;0.04	94.89;92.59	88.74;84.58	41.10;41.32
A174	54341336		98.84	0.03;0.04	94.71;92.44	88.66;84.87	41.03;41.32
A174	55724264		98.8	0.03;0.04	95.53;93.85	89.95;86.65	41.10;41.33
A174	54999223		98.87	0.03;0.05	94.94;90.78	89.01;82.62	41.09;41.24
A174	38759974		98.87	0.02;0.04	95.90;93.34	90.75;86.39	41.16;41.26
A174	74383191		99.44	0.04;0.10	94.35;88.44	87.14;77.32	40.99;41.19
A426	46715327	91.57	99.22	0.02;0.03	97.04;93.77	93.03;86.57	41.51;41.55
A426	57002980		99.18	0.02;0.03	97.24;93.98	93.44;86.94	41.44;41.41
A426	64456435		99.18	0.02;0.03	97.43;93.58	93.89;86.37	41.42;41.40
A426	49467035		99.24	0.02;0.03	97.24;94.43	93.44;87.64	41.39;41.43
A426	42759560		99.28	0.02;0.03	97.03;93.99	92.86;86.76	41.26;41.28
A426	44815745		99.15	0.02;0.03	97.04;93.91	92.89;86.57	41.09;41.12
A445	60265322	92.3	98.94	0.02;0.04	96.84;93.34	92.28;85.74	41.56;41.77
A445	59031384		98.95	0.02;0.05	96.75;92.78	92.00;84.42	41.54;41.74
A445	59806014		98.97	0.03;0.05	96.74;92.71	91.87;83.96	41.56;41.76
A445	59477532		98.97	0.02;0.05	96.78;92.44	92.02;83.72	41.55;41.74
A445	53619763		99.09	0.02;0.04	97.05;94.16	92.88;87.48	41.56;41.60
A445	15494701		98.83	0.02;0.03	97.37;94.63	93.85;88.28	41.79;41.77
A444	73611017	100.37	99.58	0.02;0.05	97.09;92.67	93.05;83.88	41.21;41.26
A444	74225278		99.56	0.02;0.06	96.87;91.26	92.42;80.92	41.25;41.38
A444	58506713		99.91	0.02;0.04	98.67;95.52	95.57;86.59	40.79;40.72
A444	71471047		99.57	0.02;0.06	96.70;90.92	91.98;80.32	41.22;41.37
A444	56762889		99.6	0.02;0.05	97.10;92.56	93.16;84.10	41.26;41.30
A443	84939399	101.01	99.11	0.02;0.05	96.52;91.28	92.30;82.74	43.97;44.09
A443	85546135		99.03	0.02;0.05	96.41;91.16	92.20;82.76	43.95;44.12
A443	84723962		99.04	0.02;0.05	96.80;92.51	92.67;84.23	43.96;44.05

A443	81503177		99.07	0.02;0.05	96.74;92.43	92.49;83.96	43.98;44.05
A292	20227761	120.56	99.84	0.02;0.05	98.12;94.84	94.57;86.34	43.23;43.27
A292	46426827		99.61	0.03;0.07	96.03;91.04	90.78;81.19	43.62;43.78
A292	48061716		99.56	0.02;0.06	96.36;91.35	91.55;81.87	43.74;43.91
A292	65050307		99.63	0.03;0.06	96.06;92.16	90.79;83.27	43.64;43.80
A292	64970999		99.66	0.03;0.07	95.72;91.30	90.21;81.99	43.71;43.92
A292	68397107		99.72	0.03;0.06	95.82;92.09	90.22;83.02	43.80;43.98
A292	63740406		99.7	0.03;0.06	95.91;92.38	90.40;83.42	43.66;43.82
A292	25003084		99.69	0.03;0.06	95.90;91.18	90.57;81.48	43.64;43.80
A290	55490379	100.31	99.21	0.02;0.03	96.74;93.93	92.46;87.26	41.50;41.51
A290	59284945		99.17	0.02;0.03	96.84;94.12	92.51;87.44	41.55;41.58
A290	59777664		99.18	0.02;0.03	96.81;94.16	92.50;87.49	41.55;41.58
A290	77937953		99.14	0.02;0.03	97.01;94.35	92.68;87.51	41.48;41.57
A290	82364194		99.53	0.03;0.12	96.06;87.25	90.80;75.83	41.20;41.24
A291	58944404	96.36	99.89	0.03;0.05	96.72;95.12	90.94;86.59	42.55;42.60
A291	57735056		99.91	0.03;0.05	96.66;94.94	90.79;86.33	42.49;42.55
A291	73530165		99.6	0.03;0.07	93.86;90.10	86.63;80.03	42.71;43.04
A291	73743514		99.6	0.04;0.07	93.60;90.09	86.19;80.00	42.65;42.99
A291	57236205		99.61	0.04;0.13	93.73;87.09	86.07;75.48	42.59;42.76
A448	78658710	98.28	96.41	0.02;0.05	96.53;92.40	92.14;84.10	43.96;44.00
A448	33444254		96.69	0.02;0.05	96.84;92.31	92.65;83.77	44.00;44.04
A448	86836918		96.49	0.02;0.04	97.06;93.33	93.16;85.48	43.99;44.03
A448	47319611		96.69	0.02;0.05	96.45;91.55	92.28;83.38	44.00;44.16
A448	81325690		96.7	0.02;0.05	96.72;92.49	92.52;84.30	43.98;44.01
A55	85507896	92.28	99.59	0.02;0.03	97.15;95.59	93.28;90.24	41.40;41.52
A55	65265470		99.54	0.02;0.03	96.60;95.43	92.04;89.70	41.43;41.60
A55	71654354		99.55	0.02;0.03	96.73;95.60	92.31;89.97	41.38;41.55
A55	75994716		99.55	0.02;0.03	96.57;94.89	92.07;89.06	41.35;41.49
A55	9188768		99.68	0.04;0.12	93.80;87.10	86.29;75.37	40.87;41.02
A217	45764082	96.16	98.95	0.02;0.03	96.72;93.76	92.43;86.90	42.59;42.62
A217	51765485		98.91	0.02;0.03	96.84;93.98	92.51;87.14	42.63;42.68
A217	52213970		98.92	0.02;0.03	96.82;94.02	92.50;87.18	42.63;42.68
A217	66045940		98.98	0.02;0.03	96.99;94.49	92.92;88.11	42.57;42.59
A217	54874038		99.05	0.02;0.03	96.57;93.90	92.25;87.22	42.57;42.63
A217	50198327		99.39	0.03;0.11	95.72;88.14	90.15;76.82	42.39;42.51
A58	32339828	94.67	99.87	0.02;0.04	97.66;95.03	93.05;86.56	40.71;40.60
A58	60189837		99.89	0.02;0.05	97.99;95.12	93.76;86.74	40.77;40.66
A58	46402991		99.91	0.02;0.05	97.41;94.29	92.32;84.48	40.75;40.73
A58	53923353		99.93	0.02;0.04	97.45;95.22	92.53;86.68	40.93;40.91
A58	65311817		99.76	0.03;0.06	95.25;90.94	89.14;81.31	41.11;41.14
A58	57391637		99.76	0.03;0.05	95.16;91.86	89.28;83.11	41.21;41.37
A185	87652540	97.35	99.35	0.02;0.04	96.62;93.15	92.23;85.89	41.91;41.99
A185	65181576		99.26	0.02;0.03	96.99;94.14	92.92;87.47	41.95;41.99
A185	66399814		99.28	0.02;0.03	97.07;94.11	93.08;87.37	41.95;41.98
A185	105433869		99.31	0.02;0.03	96.93;94.79	92.85;88.66	41.98;42.06

A180	62874875	92.64	98.22	0.02;0.04	97.20;92.39	93.25;85.48	43.32;43.49
A180	62134799		98.23	0.02;0.03	97.01;93.73	92.94;86.97	43.33;43.42
A180	62974113		98.27	0.02;0.03	97.20;94.84	93.20;88.48	43.34;43.39
A180	94797573		98.33	0.02;0.03	97.24;94.47	93.36;88.43	43.34;43.45
A180	26014252		99.15	0.03;0.10	95.77;88.55	90.21;77.46	43.41;43.54
A476	46140806	105.47	99.94	0.02;0.04	98.07;95.02	94.40;86.77	43.20;43.20
A476	65125280		99.72	0.03;0.07	95.67;90.53	90.19;80.59	43.61;43.84
A476	66639856		99.73	0.03;0.06	95.98;91.18	90.82;81.63	43.61;43.83
A476	65730241		99.73	0.03;0.07	95.76;90.70	90.41;80.87	43.59;43.81
A476	65658958		99.74	0.03;0.07	95.76;90.83	90.33;81.10	43.55;43.75
A476	42260341		99.94	0.02;0.04	98.34;94.91	95.10;86.90	43.12;43.12
A479	56168197	99.57	98.83	0.03;0.05	95.70;91.78	90.09;83.26	44.88;44.89
A479	65313247		98.84	0.03;0.07	96.11;90.13	90.97;81.10	44.95;44.96
A479	61123951		98.88	0.03;0.05	96.21;92.52	91.27;84.74	44.82;44.79
A479	61240648		98.64	0.03;0.06	96.07;91.09	90.92;82.36	44.87;44.88
A479	88048236		98.79	0.03;0.05	95.89;92.61	90.22;84.19	44.82;44.86
A209	39822275	93.85	99.9	0.02;0.04	98.10;94.93	94.27;86.40	41.54;41.45
A209	37419019		99.91	0.02;0.05	98.18;94.52	94.45;85.61	41.60;41.50
A209	38147058		99.92	0.02;0.05	97.98;94.28	93.89;84.47	41.67;41.65
A209	54566834		99.34	0.03;0.07	95.94;90.51	90.58;80.26	42.21;42.33
A209	65559960		99.35	0.02;0.06	96.31;91.44	91.47;82.06	42.16;42.18
A209	77329906		99.39	0.02;0.05	96.10;92.17	91.27;83.44	42.31;42.39
A162	57508826	95.13	99.87	0.02;0.04	98.10;95.12	94.29;86.91	41.98;41.90
A162	75323999		99.16	0.02;0.07	96.36;90.62	91.53;80.95	42.44;42.43
A162	53304429		99.89	0.02;0.05	98.17;94.73	94.45;86.14	42.06;41.96
A162	55063802		99.91	0.02;0.05	98.01;94.47	93.97;84.94	42.13;42.11
A162	75898987		99.38	0.03;0.06	96.10;90.99	90.87;81.11	42.66;42.76
A163	33780640	94.83	99.87	0.02;0.04	98.51;95.44	95.29;87.06	43.43;43.41
A163	61411886		99.38	0.02;0.05	96.97;92.75	92.73;83.90	43.89;44.01
A163	63259030		99.38	0.02;0.06	96.74;91.29	92.09;80.85	43.91;44.11
A163	50155893		99.85	0.02;0.04	98.55;95.35	95.20;86.22	43.34;43.32
A163	60790553		99.39	0.02;0.07	96.56;90.98	91.62;80.26	43.87;44.08
A163	46687789		99.5	0.03;0.11	95.49;87.99	89.63;76.52	44.09;44.53
A204	82350990	113.1	99.94	0.02;0.04	97.95;95.20	93.99;86.93	41.65;41.63
A204	96498393		99.58	0.03;0.07	95.84;90.27	90.47;80.35	42.06;42.25
A204	97360153		99.54	0.03;0.07	95.98;90.86	90.84;81.25	42.09;42.24
A204	100806843		99.55	0.03;0.07	95.82;90.90	90.55;81.31	42.03;42.17
A168	60638187	123.18	99.59	0.03;0.06	95.92;90.67	90.78;81.25	42.03;42.03
A168	72071129		99.53	0.02;0.06	96.46;91.86	91.75;82.83	42.11;42.13
A168	65295372		99.58	0.02;0.06	96.47;90.73	91.77;81.14	42.13;42.13
A168	71683807		99.65	0.02;0.06	96.71;91.31	92.45;82.40	42.01;42.03
A168	73254777		99.63	0.02;0.06	96.92;91.88	92.83;83.08	41.99;42.00
A168	67652442		99.54	0.02;0.05	97.08;92.70	93.13;84.50	42.01;42.00
A203	74685353	96.77	98.92	0.02;0.03	96.54;94.29	91.71;87.26	41.74;41.80
A203	74401428		98.9	0.02;0.03	96.49;94.36	91.64;87.26	41.73;41.81

A203	74189331		98.94	0.02;0.04	96.34;93.95	91.31;86.61	41.76;41.82
A203	99281239		98.95	0.02;0.04	96.87;94.07	92.52;86.88	41.60;41.65
A199	60582267	90.1	98.23	0.02;0.03	96.17;94.23	91.01;87.16	44.52;44.59
A199	58127804		98.14	0.02;0.03	96.50;94.41	91.64;87.18	44.54;44.64
A199	62381961		98.2	0.02;0.03	96.82;93.94	92.25;86.77	44.50;44.64
A199	61392228		98.21	0.02;0.04	96.98;94.00	92.60;86.81	44.54;44.66
A199	57851980		98.18	0.02;0.04	96.78;94.10	92.25;86.88	44.48;44.56
A197	42799115	91.16	96.78	0.02;0.05	97.47;92.66	93.96;84.10	43.98;44.03
A197	53352087		99.83	0.02;0.06	98.93;94.64	96.33;83.87	43.47;43.50
A197	53778708		99.85	0.02;0.06	98.83;94.62	96.01;83.71	43.49;43.52
A197	66119798		97.32	0.02;0.05	97.09;92.50	93.01;83.57	43.94;44.00
A197	67771280		97.32	0.02;0.05	97.14;92.81	93.15;84.21	43.94;44.00
A197	20061294		97.09	0.03;0.11	95.63;88.06	90.00;76.84	44.06;44.17
A469	50099365	92.95	99.56	0.03;0.07	95.69;89.96	90.44;80.14	42.45;42.60
A469	70996205		99.41	0.02;0.05	97.26;92.79	93.56;84.42	42.26;42.42
A469	65358506		99.44	0.02;0.04	97.62;93.33	94.31;85.28	42.25;42.34
A469	57360815		99.9	0.02;0.05	98.76;95.33	95.90;85.62	41.91;41.93
A469	66024033		99.45	0.02;0.04	96.95;93.19	92.83;85.14	42.28;42.42
A462	54503285	100.06	99.45	0.03;0.05	96.29;92.43	90.58;83.45	44.16;44.53
A462	97918149		99.42	0.03;0.04	96.64;94.18	91.95;87.56	44.17;44.27
A462	57208165		99.39	0.03;0.05	96.35;91.90	91.20;82.98	44.15;44.57
A462	54428307		99.39	0.03;0.06	96.36;91.59	90.96;82.35	44.15;44.58
A462	69488103		99.36	0.03;0.04	96.67;94.02	91.86;87.19	44.22;44.30
A299	54806065	106.03	99.87	0.02;0.04	98.59;95.53	95.50;87.36	43.18;43.09
A299	82263068		99.34	0.02;0.06	96.83;91.41	92.34;81.22	43.59;43.72
A299	65387728		99.86	0.02;0.04	98.62;95.48	95.42;86.63	43.10;43.02
A299	79830849		99.36	0.02;0.06	96.67;91.12	91.91;80.69	43.56;43.69
A299	71160128		99.39	0.02;0.05	97.10;92.76	93.14;84.49	43.61;43.63
A173	47105648	109.58	99.93	0.02;0.04	98.22;95.12	94.81;87.07	41.28;41.21
A173	66768882		99.72	0.03;0.07	95.96;90.54	90.82;80.77	41.62;41.73
A173	68458214		99.72	0.02;0.06	96.26;91.21	91.42;81.84	41.62;41.72
A173	67389621		99.73	0.03;0.07	96.05;90.72	91.02;81.07	41.60;41.69
A173	67644381		99.74	0.03;0.06	96.05;90.86	90.95;81.28	41.57;41.66
A173	47892741		99.92	0.02;0.04	98.47;94.98	95.48;87.15	41.23;41.14
A273	86338593	127.88	99.63	0.02;0.04	97.19;92.93	93.54;85.31	42.69;42.86
A273	84537843		99.64	0.02;0.04	97.00;92.72	93.21;85.08	42.72;42.93
A273	85881277		99.62	0.02;0.05	96.23;89.94	92.08;81.53	42.79;43.23
A273	83662995		99.64	0.02;0.06	96.12;89.81	91.79;81.27	42.74;43.12
A273	85829744		99.61	0.02;0.05	96.87;91.99	92.98;83.94	42.70;42.93
A201	33158849	100.78	99.64	0.02;0.04	97.18;92.73	93.52;84.95	42.60;42.73
A201	54091273		99.65	0.02;0.04	96.98;92.52	93.19;84.73	42.63;42.83
A201	62501077		99.64	0.02;0.05	96.84;91.81	93.03;83.87	42.65;42.93
A201	34945135		99.64	0.02;0.05	96.32;90.12	92.18;81.64	42.63;42.98
A201	49368816		99.62	0.02;0.06	96.32;89.71	92.16;81.03	42.68;43.05
A201	35024882		99.63	0.02;0.06	96.21;89.66	92.06;81.10	42.70;43.12

A201	33826138		99.64	0.02;0.06	96.09;89.53	91.75;80.85	42.64;43.01
A201	33001646		99.62	0.02;0.05	96.86;91.78	92.97;83.57	42.61;42.81
A287	78811916	94.45	99.44	0.03;0.03	94.67;94.05	88.18;86.87	42.59;42.81
A287	53396181		99.41	0.03;0.03	95.02;94.24	88.77;87.15	42.68;42.92
A287	53128639		99.38	0.03;0.03	94.90;94.33	88.59;87.16	42.67;42.93
A287	53174874		99.4	0.03;0.04	94.66;93.94	88.08;86.53	42.68;42.93
A287	76321064		99.63	0.04;0.09	94.52;89.16	87.42;78.44	42.54;42.76
A281	57404866	92.25	98.82	0.03;0.05	96.47;92.34	91.66;83.73	42.27;42.58
A281	53516448		98.83	0.03;0.05	96.47;92.31	91.66;83.68	42.26;42.56
A281	68522999		98.82	0.02;0.04	96.74;94.49	92.41;88.06	42.28;42.28
A281	32344704		99.07	0.02;0.05	96.88;93.23	92.37;85.57	42.27;42.47
A281	31672702		99.08	0.02;0.05	96.78;92.66	92.05;84.24	42.24;42.44
A281	32146532		99.09	0.03;0.05	96.77;92.60	91.94;83.79	42.26;42.46
A281	31890461		99.1	0.02;0.05	96.81;92.33	92.07;83.56	42.25;42.44
A280	77131738	92.78	99.91	0.02;0.04	97.74;95.22	93.50;87.23	42.19;42.18
A280	63010732		99.64	0.03;0.06	95.22;91.02	89.37;81.55	42.39;42.59
A280	67258546		99.64	0.03;0.06	95.28;91.17	89.44;81.79	42.41;42.62
A280	63626022		99.66	0.03;0.06	95.40;91.35	89.65;81.99	42.40;42.60
A280	38228664		99.62	0.03;0.06	95.41;90.69	89.69;81.12	42.45;42.60
A283	54507270	103.77	99.06	0.02;0.04	96.96;93.37	92.88;85.92	42.55;42.61
A283	65263796		99.04	0.02;0.04	97.18;93.69	93.33;86.41	42.46;42.52
A283	72474862		99.02	0.02;0.04	97.36;93.24	93.76;85.79	42.43;42.48
A283	55053332		99.11	0.02;0.03	97.16;94.04	93.30;87.00	42.42;42.48
A283	50353411		99.14	0.02;0.04	96.96;93.64	92.74;86.18	42.28;42.34
A283	48232453		98.96	0.02;0.04	96.97;93.64	92.78;86.17	42.11;42.16
A282	34084404	94.51	99.93	0.02;0.05	98.73;94.95	95.85;85.88	41.52;41.41
A282	59612476		99.6	0.02;0.06	97.00;91.11	92.82;81.17	41.94;41.99
A282	52309765		99.92	0.02;0.05	98.61;95.03	95.36;85.43	41.47;41.40
A282	52205909		99.92	0.02;0.05	98.65;95.13	95.46;85.79	41.51;41.45
A282	47640848		99.63	0.02;0.06	97.01;91.06	92.94;81.52	41.98;42.02
A282	69193153		99.64	0.03;0.13	95.28;86.79	89.23;74.75	42.03;42.20
A295	62563020	94.04	98.51	0.02;0.05	97.04;90.50	92.97;82.25	43.02;42.86
A295	61796800		98.5	0.02;0.05	96.85;91.54	92.66;83.38	43.03;43.13
A295	62739418		98.54	0.02;0.04	97.05;93.28	92.94;85.57	43.03;43.10
A295	89497292		98.6	0.02;0.04	96.34;91.75	91.72;83.72	43.03;43.20
A295	36910985		99.24	0.03;0.17	95.53;84.30	89.80;71.51	43.14;43.35
A288	57677418	93.24	97.65	0.02;0.04	96.44;93.06	91.93;85.77	43.56;43.62
A288	45960513		97.36	0.02;0.04	96.64;93.30	92.28;86.09	43.62;43.65
A288	52233798		97.3	0.02;0.04	96.76;93.50	92.36;86.30	43.67;43.71
A288	52630672		97.31	0.02;0.04	96.72;93.54	92.32;86.33	43.66;43.71
A288	69531596		97.58	0.02;0.03	96.86;94.81	92.72;88.71	43.65;43.72
A288	33249101		98.46	0.03;0.15	95.60;85.47	89.93;73.24	43.61;43.74
A416	71631036	95.8	99.42	0.02;0.03	96.76;93.83	92.32;86.89	43.38;43.43
A416	88973331		99.37	0.02;0.03	97.35;94.63	93.63;88.78	43.35;43.46
A416	76938124		99.93	0.02;0.05	98.20;94.82	94.56;86.23	43.09;43.03

A416	81806101		99.93	0.02;0.05	98.24;94.71	94.64;86.06	43.04;42.95
A302	70541260	92.65	97.53	0.02;0.04	97.23;92.67	93.33;85.95	45.68;45.68
A302	69720337		97.55	0.02;0.03	97.07;94.04	93.05;87.49	45.69;45.75
A302	70700480		97.62	0.02;0.03	97.25;95.10	93.30;88.95	45.70;45.75
A302	97857716		97.75	0.02;0.04	96.74;92.42	92.45;85.44	45.73;45.81
A303	54019758	95.27	99.03	0.02;0.03	96.23;94.22	91.19;87.24	41.60;41.64
A303	51492570		98.98	0.02;0.03	96.52;94.28	91.71;87.07	41.63;41.70
A303	53969272		99.03	0.02;0.03	96.83;93.89	92.33;86.77	41.57;41.68
A303	56578654		99.03	0.02;0.04	97.00;94.01	92.68;86.91	41.63;41.71
A303	53667688		99.01	0.02;0.04	96.80;94.05	92.34;86.89	41.56;41.60
A303	47896447		99.43	0.03;0.12	95.93;86.56	90.59;74.90	41.36;41.38
A263	91836498	108.28	97.29	0.02;0.05	96.57;92.33	92.25;84.08	43.26;43.26
A263	91468114		97.48	0.02;0.05	96.91;92.30	92.80;83.83	43.31;43.32
A263	39235771		97.37	0.02;0.04	97.10;93.26	93.26;85.45	43.29;43.30
A263	49512780		97.6	0.02;0.04	96.88;92.84	92.84;84.86	43.31;43.36
A263	88888646		97.54	0.02;0.05	96.77;92.43	92.64;84.29	43.29;43.29
A260	57470547	93.8	99.14	0.02;0.05	96.85;92.87	92.32;84.96	41.39;41.60
A260	56462069		99.15	0.02;0.05	96.76;92.28	92.04;83.61	41.35;41.56
A260	57075156		99.16	0.03;0.05	96.75;92.20	91.92;83.10	41.38;41.59
A260	56896011		99.17	0.02;0.06	96.79;91.93	92.07;82.87	41.36;41.56
A260	50575076		99.25	0.02;0.04	97.04;93.76	92.88;86.77	41.37;41.40
A260	34239410		98.87	0.02;0.03	97.33;94.17	93.76;87.46	41.54;41.49
A308	37638611	93.95	96.57	0.02;0.05	97.18;92.57	93.35;83.86	44.22;44.27
A308	49745288		99.86	0.02;0.06	98.75;94.65	95.84;83.83	43.72;43.76
A308	44839095		99.87	0.02;0.06	98.64;94.64	95.54;83.69	43.73;43.77
A308	59822565		97.12	0.02;0.05	96.85;92.36	92.49;83.29	44.17;44.23
A308	61752009		97.11	0.02;0.05	96.89;92.69	92.61;83.94	44.17;44.23
A308	59358400		96.91	0.03;0.12	95.13;87.52	89.01;76.04	44.23;44.34
A309	51476318	92.09	99.1	0.02;0.04	96.89;93.22	92.70;85.53	43.50;43.60
A309	62636862		99.05	0.02;0.03	97.25;93.99	93.56;86.98	43.52;43.57
A309	53666031		99.14	0.02;0.03	97.11;93.90	93.15;86.59	43.37;43.47
A309	48380820		99.18	0.02;0.04	96.90;93.45	92.56;85.71	43.23;43.33
A309	46669670		99.01	0.02;0.04	96.90;93.41	92.60;85.63	43.03;43.14
A309	44140201		99.44	0.02;0.03	97.23;95.72	93.21;90.02	43.31;43.41
A403	87540298	100.89	98.15	0.02;0.05	97.09;91.99	93.17;82.87	43.81;43.96
A403	110425348		98.27	0.02;0.05	97.47;92.63	93.94;83.86	43.82;43.92
A403	55788399		99.89	0.02;0.05	98.74;94.77	95.77;84.19	43.31;43.34
A403	82546449		98.51	0.02;0.05	96.72;92.32	92.33;83.46	43.80;43.92
A402	62617139	98.89	98.44	0.03;0.05	96.26;93.01	90.84;84.60	44.89;45.18
A402	65855738		98.39	0.03;0.05	96.25;92.42	91.20;83.92	44.91;45.24
A402	66720767		98.36	0.03;0.05	96.41;92.16	91.50;83.39	44.92;45.26
A402	64088633		98.37	0.03;0.06	96.41;92.10	91.49;83.29	44.92;45.25
A402	70352156		98.38	0.02;0.04	96.73;94.42	92.35;87.94	44.96;45.01
A406	64697139	92.32	98.19	0.02;0.03	96.64;94.85	91.90;88.29	43.54;43.62
A406	64238817		98.2	0.02;0.03	96.60;94.95	91.84;88.36	43.55;43.64

A406	64098613		98.25	0.02;0.03	96.45;94.55	91.51;87.72	43.57;43.65
A406	87716825		98.22	0.02;0.03	97.01;94.45	92.69;87.78	43.44;43.57
A406	26969409		99.05	0.03;0.10	95.80;88.73	90.30;77.87	43.44;43.57
A315	38553795	117.65	99.85	0.02;0.03	97.35;94.02	93.86;87.22	42.13;42.22
A315	63355658		99.86	0.02;0.03	97.19;93.88	93.59;87.12	42.15;42.29
A315	73341920		99.85	0.02;0.04	97.03;93.16	93.41;86.22	42.17;42.36
A315	39926014		99.85	0.02;0.04	96.54;91.63	92.60;84.17	42.15;42.40
A315	58459544		99.85	0.02;0.05	96.58;91.33	92.64;83.68	42.19;42.45
A315	40959485		99.85	0.02;0.05	96.45;91.20	92.50;83.64	42.20;42.51
A315	39451829		99.85	0.02;0.05	96.34;91.12	92.21;83.44	42.16;42.42
A315	38130710		99.84	0.02;0.04	97.05;93.17	93.34;85.98	42.13;42.26
A313	60087533	92.07	99.17	0.02;0.04	96.59;93.07	92.15;86.05	42.28;42.43
A313	61381713		99.15	0.02;0.03	97.15;94.54	93.12;87.95	42.26;42.36
A313	55700176		99.19	0.02;0.04	96.69;91.51	92.35;83.96	42.30;42.47
A313	73534081		99.16	0.02;0.03	97.23;93.96	93.37;87.55	42.28;42.40
A313	25817080		99.17	0.02;0.04	96.83;93.93	92.38;86.63	42.40;42.45
A313	30376721		99.49	0.03;0.11	95.80;87.94	90.31;76.62	42.20;42.32
A311	62640469	93.72	97.71	0.03;0.05	96.21;92.98	90.76;84.52	44.46;44.75
A311	65530224		97.66	0.03;0.05	96.18;92.46	91.09;83.99	44.48;44.81
A311	60300055		97.64	0.03;0.05	96.38;92.24	91.45;83.49	44.49;44.83
A311	59868661		97.64	0.03;0.06	96.37;92.14	91.44;83.34	44.48;44.81
A311	64063917		97.62	0.02;0.04	96.68;94.27	92.28;87.65	44.50;44.56
A95	57884321	97.06	98.59	0.02;0.03	97.17;95.11	93.20;89.26	45.01;45.10
A95	67067866		98.1	0.02;0.05	96.97;93.19	92.58;85.47	45.00;45.24
A95	65789794		98.12	0.02;0.05	96.89;92.60	92.30;84.12	44.98;45.21
A95	66539902		98.15	0.02;0.05	96.88;92.54	92.20;83.68	45.01;45.23
A95	66255579		98.12	0.02;0.05	96.91;92.27	92.31;83.45	45.01;45.22
A93	66495934	92.56	99.85	0.02;0.05	98.38;94.69	94.92;85.93	44.48;44.44
A93	32468080		99.85	0.02;0.06	98.24;94.15	94.59;84.92	44.49;44.43
A93	53537002		99.89	0.02;0.06	98.05;93.87	94.03;83.69	44.58;44.57
A93	62453520		99.9	0.02;0.05	98.13;94.80	94.31;85.88	44.76;44.75
A93	76577702		99.49	0.02;0.07	96.28;90.71	91.37;80.92	45.17;45.23
A93	16991166		99.47	0.02;0.06	96.03;91.40	91.12;82.25	45.30;45.40
A242	17521421	97.32	99.91	0.02;0.05	96.88;94.61	91.61;85.87	42.38;42.45
A242	31769206		99.91	0.02;0.05	97.11;94.92	91.84;86.31	42.42;42.46
A242	33224845		99.9	0.02;0.05	97.20;95.12	92.07;86.76	42.56;42.59
A242	54612435		99.72	0.03;0.07	94.78;90.92	88.16;81.44	42.60;42.84
A242	55033676		99.75	0.04;0.08	94.34;89.96	87.40;80.05	42.65;42.96
A242	59815231		99.78	0.04;0.07	94.27;90.73	87.09;80.99	42.72;43.02
A242	53990602		99.77	0.03;0.07	94.87;91.14	88.27;81.58	42.67;42.91
A242	18445612		99.94	0.03;0.05	96.70;95.00	90.97;86.54	42.46;42.53
A246	56576192	90.68	99.1	0.02;0.04	96.54;93.49	91.97;86.07	42.63;42.74
A246	73225376		99.05	0.02;0.03	96.85;94.49	92.65;87.92	42.66;42.76
A246	56376677		99.15	0.02;0.03	96.76;94.19	92.43;87.21	42.52;42.64
A246	48671668		99.18	0.02;0.03	96.59;93.76	91.93;86.36	42.39;42.49

A246	52336899		99.02	0.02;0.03	96.72;93.78	92.22;86.35	42.24;42.33
A246	15070294		99.26	0.02;0.03	96.32;95.49	91.37;89.61	42.38;42.59
A89	67114262	100.9	98.24	0.02;0.04	96.85;92.57	92.60;84.31	45.13;45.27
A89	71239340		98.25	0.02;0.04	97.07;92.90	93.04;84.80	44.99;45.14
A89	69099007		98.38	0.02;0.04	97.06;93.26	93.04;85.38	44.96;45.10
A89	67670015		98.34	0.02;0.04	96.86;92.80	92.47;84.48	44.77;44.91
A89	61207399		97.99	0.02;0.04	96.88;92.68	92.52;84.28	44.59;44.73
A320	39423649	93.92	99.08	0.03;0.06	95.79;90.09	90.36;80.77	42.20;42.15
A320	44077981		99.18	0.03;0.06	95.61;91.75	89.63;82.66	42.10;42.12
A320	22141511		99.25	0.02;0.05	96.59;91.34	91.91;83.53	41.85;41.83
A320	69967251		99.28	0.02;0.05	96.87;90.93	92.48;82.90	41.99;42.25
A320	54695410		99.25	0.02;0.04	96.92;92.28	92.59;84.97	41.90;41.92
A320	25172723		99.25	0.02;0.04	96.94;92.30	92.43;84.84	41.88;41.85
A320	25073561		99.21	0.02;0.05	96.92;92.27	92.36;84.25	41.90;41.91
A320	35334890		98.96	0.02;0.03	97.16;94.03	93.34;87.11	42.13;42.10
A321	63518371	95.18	98.86	0.02;0.03	96.52;94.50	91.66;87.68	43.02;43.09
A321	63198667		98.84	0.02;0.03	96.47;94.59	91.60;87.71	43.02;43.10
A321	62975838		98.89	0.02;0.03	96.32;94.18	91.25;87.06	43.05;43.11
A321	87848889		98.85	0.02;0.03	96.62;94.59	91.92;87.62	42.95;43.04
A321	39772714		99.34	0.03;0.13	95.86;86.58	90.47;74.97	42.75;42.83
A125	36195845	94.01	99.37	0.02;0.04	96.24;93.74	91.16;86.61	42.55;42.67
A125	35559953		99.35	0.03;0.04	96.00;93.20	90.74;85.82	42.58;42.75
A125	35949453		99.37	0.03;0.06	94.89;89.59	89.01;81.03	42.62;42.98
A125	23518027		99.22	0.02;0.04	96.00;92.18	90.93;84.40	42.66;42.79
A125	44795551		99.26	0.02;0.04	96.05;92.51	91.13;85.00	42.64;42.78
A125	44096967		99.28	0.03;0.05	95.34;90.06	89.99;81.72	42.69;42.99
A125	43831137		99.31	0.03;0.05	95.37;89.97	90.08;81.72	42.67;42.99
A125	49429451		99.55	0.03;0.11	95.70;87.76	90.09;76.18	42.13;42.38
A483	62222610	93.76	99.3	0.02;0.04	97.25;92.16	93.39;85.06	42.86;43.04
A483	61424350		99.28	0.02;0.04	97.07;93.46	93.08;86.50	42.87;42.96
A483	62313263		99.33	0.02;0.03	97.26;94.59	93.35;88.04	42.88;42.93
A483	91268876		99.32	0.02;0.03	97.26;94.83	93.33;88.46	42.86;42.97
A483	35294769		99.5	0.03;0.10	95.21;88.97	88.89;78.07	43.00;43.16
A482	35103842	93.03	99.39	0.03;0.03	95.96;94.33	90.67;87.34	43.59;43.66
A482	61221673		99.35	0.02;0.03	96.24;94.44	91.11;87.47	43.69;43.76
A482	60925035		99.32	0.02;0.03	96.20;94.55	91.04;87.52	43.69;43.78
A482	60906840		99.35	0.03;0.04	96.02;94.14	90.65;86.87	43.71;43.78
A482	51169820		99.39	0.02;0.04	96.60;93.93	91.94;86.71	43.59;43.61
A482	40774791		99.58	0.03;0.11	95.34;87.93	89.44;76.61	43.52;43.64
A480	97898812	93.22	99.46	0.02;0.06	96.15;90.81	91.31;81.19	42.71;42.86
A480	90962719		99.43	0.03;0.07	95.93;90.24	90.80;80.36	42.62;42.74
A480	27240605		99.92	0.02;0.04	97.93;95.15	93.93;86.75	42.20;42.20
A480	30500203		99.48	0.03;0.07	95.77;90.11	90.31;80.02	42.62;42.80
A480	31088966		99.43	0.03;0.07	95.91;90.68	90.68;80.91	42.66;42.81
A480	33041988		99.44	0.03;0.07	95.72;90.71	90.36;80.95	42.60;42.73

A486	66906491	96.54	99.82	0.02;0.05	98.55;94.99	95.37;84.57	43.61;43.63
A486	59696978		99.84	0.02;0.05	98.43;94.97	95.05;84.41	43.64;43.66
A486	77090922		99.39	0.02;0.05	96.79;92.88	92.33;84.14	44.01;44.06
A486	79085988		99.41	0.02;0.05	96.81;93.16	92.40;84.75	44.00;44.06
A486	39034169		99.38	0.02;0.05	96.40;92.68	91.66;84.23	44.07;44.11
A485	41957523	100.44	99.91	0.02;0.04	98.13;95.07	94.39;86.83	40.94;40.83
A485	57277173		99.39	0.02;0.07	96.36;90.43	91.55;80.68	41.41;41.37
A485	46888449		99.9	0.02;0.05	98.28;94.90	94.34;85.46	40.93;40.83
A485	40518575		99.91	0.02;0.05	98.08;94.40	93.81;84.70	40.92;40.82
A485	42562430		99.92	0.02;0.05	98.22;94.65	94.58;86.01	41.04;40.91
A485	105588866		99.53	0.03;0.11	95.58;87.80	89.87;76.52	41.58;41.62
A484	101690315	100.92	99.22	0.02;0.03	96.78;93.78	92.34;86.74	43.42;43.48
A484	78531901		99.15	0.02;0.04	97.33;92.55	93.54;85.77	43.38;43.54
A484	77477531		99.13	0.02;0.03	97.16;93.91	93.25;87.28	43.39;43.48
A484	78691558		99.18	0.02;0.03	97.34;95.00	93.50;88.76	43.40;43.45
A488	44688311	89.79	99.6	0.02;0.04	97.00;92.36	93.12;84.02	43.62;43.49
A488	72294544		99.57	0.02;0.05	97.05;92.28	93.21;83.80	43.59;43.41
A488	95459483		99.59	0.02;0.04	97.29;92.56	93.79;84.33	43.49;43.32
A488	86857359		99.6	0.02;0.05	97.03;92.03	93.14;83.36	43.55;43.38

Note: Raw reads: The total number of double-ended read pair in the original sequence (i.e., logarithm of reads); Raw data(G) : the amount of data per sample. Effective: The proportion of Clean reads used for subsequent bioinformatics analysis after filtration in Raw data. Error: the average Error rate of all bases calculated by read1 and read2 respectively;

Q20: The percentage of bases with Phred value greater than 20 in the total bases was calculated. Read1 and read2 were calculated respectively; Q30: The percentage of bases with Phred value greater than 30 in the total number of bases was calculated. Read1 and read2 were calculated respectively; GC content: The percentage of nitrogenous bases on a DNA molecule that are either guanine or cytosine, and calculated by read1 and read2 respectively.

Table S4 Allelic frequency for the identified variants in healthy control

GeneName	Transcription	Exon	Variant (DNA level)	AA change	Allelic frequency in the 568 healthy control	Allelic frequency in 1000 Genomes Project
<i>ACTA2</i>	NM_001141945	exon7	c.G635A	p.R212Q	0	0
<i>ACTA2</i>	NM_001141945	exon5	c.G446A	p.R149H	0	0
<i>ACTA2</i>	NM_001141945	exon3	c.G133T	p.V45L	0	0
<i>COL1A1</i>	NM_000088	exon30	c.G2005A	p.A669T	0.00088183	0
<i>COL1A1</i>	NM_000088	exon37	c.C2573G	p.A858G	0.00088339	0
<i>COL1A2</i>	NM_000089	exon40	c.G2456A	p.R819H	0	0
<i>COL1A2</i>	NM_000089	exon44	c.G2905A	p.V969M	0	0
<i>COL3A1</i>	NM_000090	exon42	c.C3061A	p.L1021I	0.00440141	0.0009
<i>COL3A1</i>	NM_000090	exon20	c.1348-3C>T	-	0	0
<i>COL5A1</i>	NM_000093	exon9	c.C1388T	p.P463L	0.00088028	0.0005
<i>COL5A1</i>	NM_000093	exon65	c.A5335G	p.N1779D	0.00530035	0
<i>COL5A1</i>	NM_000093	exon2	c.C200T	p.S67F	0	0
<i>COL5A1</i>	NM_000093	exon3	c.G401A	p.R134H	0	0
<i>COL5A1</i>	NM_000093	exon42	c.C3364A	p.P1122T	0	0
<i>COL5A1</i>	NM_000093	exon43	c.C3428T	p.P1143L	0	0
<i>COL5A2</i>	NM_000393	exon37	c.C2488T	p.R830W	0	0
<i>EFEMP2</i>	NM_016938	exon10	c.G1102A	p.V368I	0	0
<i>EFEMP2</i>	NM_016938	exon5	c.G485A	p.C162Y	0	0
<i>ELN</i>	NM_001278939	exon26	c.G1883C	p.G628A	0.00264085	0.0009
<i>ELN</i>	NM_001278918	exon9	c.C449T	p.P150L	0.00088028	0
<i>ELN</i>	NM_000501	exon2	c.G104C	p.G35A	0.00088028	0
<i>ELN</i>	NM_001278913	exon17	c.G1108A	p.G370S	0.00176056	0
<i>ELN</i>	NM_001278913	exon14	c.C806T	p.A269V	0	0
<i>FBN1</i>	NM_000138	exon66	c.T8597A	p.I2866N	0	0
<i>FBN1</i>	NM_000138	exon60	c.T7408G	p.C2470G	0	0
<i>FBN1</i>	NM_000138	exon57	c.G6914C	p.G2305A	0	0
<i>FBN1</i>	NM_000138	exon48	c.G5855A	p.G1952E	0	0
<i>FBN1</i>	NM_000138	exon34	c.C4162T	p.R1388C	0	0
<i>FBN1</i>	NM_000138	exon22	c.G2639A	p.G880D	0	0
<i>FBN1</i>	NM_000138	exon22	c.A2613C	p.L871F	0	0
<i>FBN1</i>	NM_000138	exon14	c.C1693T	p.R565X	0	0
<i>FBN1</i>	NM_000138	exon10	c.G1007C	p.C336S	0	0
<i>FBN1</i>	NM_000138	exon47	c.5778delT	p.N1926fs	0	0
<i>FBN2</i>	NM_001999	exon12	c.A1643C	p.D548A	0.00088028	0
<i>FBN2</i>	NM_001999	exon30	c.G3889A	p.G1297S	0.00176056	0
<i>FBN2</i>	NM_001999	exon6	c.G809T	p.R270L	0	0
<i>FLNA</i>	NM_001110556	exon20	c.G2876A	p.S959N	0	0
<i>MYH11</i>	NM_002474	exon33	c.G4604A	p.R1535Q	0.00264085	0.0005
<i>MYH11</i>	NM_002474	exon34	c.G4843A	p.A1615T	0	0.0005
<i>MYH11</i>	NM_002474	exon33	c.G4735A	p.D1579N	0	0
<i>MYH11</i>	NM_002474	exon32	c.A4442T	p.K1481M	0	0
<i>MYH11</i>	NM_002474	exon28	c.A3766C	p.K1256Q	0	0
<i>MYH11</i>	NM_001040113	exon2	c.A268G	p.M90V	0	0
<i>MYH11</i>	NM_002474	exon28	c.3757_3759del	p.1253_1253del	0	0
<i>MYLK</i>	NM_053026	exon14	c.G1816A	p.G606R	0.00528169	0.0009
<i>MYLK</i>	NM_053026	exon28	c.G4675A	p.V1559M	0.00528169	0.0014
<i>MYLK</i>	NM_053026	exon14	c.C1747G	p.P583A	0.00088028	0
<i>MYLK</i>	NM_053026	exon17	c.C2653T	p.R885C	0	0
<i>MYLK</i>	NM_053031	exon2	c.113_114insTG	p.A38fs	0	0
<i>MYLK</i>	NM_053025	exon10	c.1179_1181del	p.393_394del	0	0
<i>NOTCH1</i>	NM_017617	exon32	c.C5944T	p.R1982W	0	0
<i>PLOD1</i>	NM_000302	exon7	c.C710T	p.P237L	0	0
<i>PLOD3</i>	NM_001084	exon17	c.C1904T	p.T635I	0.00440917	0.0005
<i>PLOD3</i>	NM_001084	exon12	c.G1315A	p.A439T	0	0.0014
<i>PLOD3</i>	NM_001084	exon6	c.G670A	p.G224R	0	0
<i>TGFB3</i>	NM_003239	exon6	c.C1007T	p.P336L	0	0
<i>TGFBR1</i>	NM_001130916	exon4	c.C695T	p.T232M	0	0.0005
<i>TGFBR1</i>	NM_001130916	exon8	c.G1190A	p.C397Y	0	0
<i>TGFBR2</i>	NM_003242	exon7	c.G1564A	p.D522N	0	0
<i>TGFBR2</i>	NM_003242	exon4	c.871_873del	p.291_291del	0	0

Table S5 Clinical characteristics of subjects with top 3 frequent gene mutations

	<i>FBN1</i> N=10	<i>MYH11</i> N=9	<i>MYLK</i> N=7	P value
Onset Age, years	44.7±11.0	62.9±12.2	53.0±16.5	0.021
Male, n (%)	7 (70.0)	5 (55.6)	5 (71.4)	0.747
Height, cm	172.5±5.3	166.2±9.9	169.6±7.9	0.240
Weight, kg	68.5±15.1	69.1±14.3	69.4±11.1	0.991
BMI, kg/m ²	23.0±4.7	24.8±3.8	24.1±2.9	0.598
DeBakey type I, n (%)	8 (80.0)	7 (77.8)	6 (85.7)	0.917
Hypertension, n (%)	4 (40.0)	7 (77.8)	4 (57.1)	0.238
Diabetes mellitus, n (%)	0 (0.0)	0 (0.0)	0 (0.0)	1.000
Coronary artery disease, n (%)	1 (10.0)	0 (0.0)	0 (0.0)	0.372
Smoke, n (%)	6 (60.0)	2 (22.2)	2 (28.6)	0.194
Alcohol history, n (%)	3 (30.0)	3 (33.3)	0 (0.0)	0.110
SBP, mmHg	118.5±18.4	115.3±14.3	128±19.1	0.344
DBP, mmHg	66.3±12.5	60.6±12.6	73.7±16.2	0.181
Heart rate, bpm	86.9±7.6	85.1±8.9	76.7±9.3	0.061
Ascending aorta diameter, mm	50.0±16.1	49.6±13.1	48.5±9.0	0.972
Surgical intervention, n (%)	6 (60.0)	5 (55.6)	5 (71.4)	0.880

BMI: body mass index; SBP: systolic blood pressure; DBP: diastolic blood pressure

Table S6 Reasons account for in-hospital mortality in type A AAD

No.	Age, Gender	Cause of death	Treatment	No. of mutation	Mutation involved genes
1	49, male	aortic rupture	conservative	1	<i>COL5A2</i>
2	58, male	aortic rupture	conservative	0	
3	20, female	aortic rupture	conservative	3	<i>FBN1, COL1A2, TGFBR2</i>
4	32, male	cardiac death	conservative	0	
5	49, female	cardiac death	surgical	0	
6	67, male	aortic rupture	surgical	1	<i>MYH11</i>
7	66, male	aortic rupture	conservative	1	<i>COL5A1</i>
8	63, male	aortic rupture	conservative	1	<i>MYH11</i>
9	53, female	aortic rupture	conservative	1	<i>FLNA</i>
10	76, female	cardiac death	conservative	1	<i>ACTA2</i>
11	59, female	cardiac death	conservative	2	<i>FBN1, MYH11</i>
12	45, male	aortic rupture	conservative	1	<i>FBN1</i>