

Table SI. General information of enrolled patients.

ID	MATH	Group	MATH group	Age group	Age	Restatus	Retime	His group	Sex	Sex group	Grade group	IDH	TP53	TTN	MUC16	EGFR	ATRX
TCGA-CS-6668	26.16353	1	2	2	57	0	244	1	FEMALE	2	2	0	0	0	0	0	0
TCGA-TM-A84G	27.51958	1	2	2	54	0	1,236	1	FEMALE	2	3	1	0	0	0	0	0
TCGA-E1-5318	46.39545	1	2	1	42	1	2,379	1	FEMALE	2	2	1	0	0	0	0	0
TCGA-TM-A84R	22.239	1	1	2	46	0	566	1	MALE	1	2	1	0	0	0	0	0
TCGA-74-6577	68.47249	2	3	2	51	1	132	4	MALE	1	4	0	0	0	0	0	0
TCGA-E1-A7YL	33.13054	1	2	2	46	1	91	3	MALE	1	3	0	1	1	0	0	0
TCGA-S9-A7R1	33.888	1	2	1	35	1	3,637	1	MALE	1	2	1	0	0	0	0	0
TCGA-14-1451	24.71	2	1	1	39	1	19	4	MALE	1	4	0	0	0	1	0	0
TCGA-FG-A4MX	18.5325	1	1	2	47	0	569	3	MALE	1	2	1	1	0	0	0	1
TCGA-HT-7473	30.84519	1	2	1	28	0	503	2	MALE	1	2	1	1	0	0	0	1
TCGA-19-1386	47.29441	2	2	2	51	1	237	4	MALE	1	4	0	0	0	0	0	0
TCGA-E1-A7Z4	34.73664	1	2	1	35	1	846	3	MALE	1	2	1	1	0	0	0	1
TCGA-41-3392	37.8967	2	2	3	88	0	30	4	MALE	1	4	0	0	1	0	0	0
TCGA-P5-A77X	33.69545	1	2	2	55	0	105	2	FEMALE	2	2	1	0	0	0	0	0
TCGA-14-0813	46.51369	2	2	3	78	0	41	4	MALE	1	4	0	1	1	0	0	0
TCGA-CS-6188	42.69513	1	2	2	48	1	725	3	MALE	1	3	0	0	0	0	0	0
TCGA-WY-A85B	38.01538	1	2	1	24	0	1,393	3	MALE	1	2	1	1	0	0	0	1
TCGA-DU-5852	37.065	1	2	2	61	1	24	2	FEMALE	2	3	0	0	0	0	1	1
TCGA-32-4719	31.50041	2	2	3	73	0	330	4	MALE	1	4	0	0	1	0	0	0
TCGA-06-0211	22.49666	2	1	2	47	1	53	4	MALE	1	4	0	0	0	1	0	0
TCGA-FG-7638	53.14255	1	3	1	31	1	686	1	FEMALE	2	3	1	0	0	0	0	1
TCGA-DU-6404	11.40462	1	1	1	24	1	1,154	1	FEMALE	2	3	0	0	0	0	0	0
TCGA-FG-7637	37.23766	1	2	2	49	0	1020	2	MALE	1	2	1	0	0	0	0	0
TCGA-CS-5396	38.53725	1	2	2	53	0	303	1	FEMALE	2	3	1	1	0	0	FEMALE	0
TCGA-TQ-A7RR	71.27885	1	3	1	38	0	787	2	MALE	1	2	1	1	1	0	0	1
TCGA-HT-7860	55.5975	1	3	2	60	0	15	3	FEMALE	2	3	0	0	1	1	0	0
TCGA-DU-8167	54.0174	1	3	3	69	0	471	2	FEMALE	2	2	1	1	0	0	0	1
TCGA-TM-A84Q	53.77917	1	3	1	31	1	772	3	MALE	1	2	1	1	1	0	0	1
TCGA-06-0881	10.59	2	1	2	50	1	141	4	MALE	1	4	0	0	0	0	1	0
TCGA-QH-A870	27.24636	1	2	1	38	1	395	2	FEMALE	2	3	1	1	0	0	0	1
TCGA-76-4931	30.32591	2	2	3	70	1	112	4	FEMALE	2	4	0	0	1	0	1	0
TCGA-E1-A7YY	27.31105	1	2	1	27	1	958	1	FEMALE	2	2	1	0	0	0	0	0
TCGA-06-0939	71.85891	2	3	3	79	1	329	4	FEMALE	2	4	0	0	1	0	0	0
TCGA-DU-A7TD	46.07697	1	2	2	52	1	188	2	MALE	1	3	0	0	0	1	1	0
TCGA-HW-7490	28.97034	1	2	1	41	0	585	3	MALE	1	2	1	1	0	0	0	1
TCGA-CS-6666	41.11412	1	2	1	22	0	258	3	MALE	1	3	1	0	0	0	0	1
TCGA-DU-6405	35.20713	1	2	2	51	1	486	3	FEMALE	2	3	0	0	0	0	0	0
TCGA-28-2514	43.62177	2	2	2	45	0	160	4	MALE	1	4	0	0	0	0	0	0
TCGA-12-0778	42.16252	2	2	2	53	1	232	4	MALE	1	4	0	0	0	0	0	0
TCGA-VV-A829	35.91391	1	2	1	44	0	1,127	2	MALE	1	3	1	0	0	0	0	0
TCGA-DB-5281	59.42123	1	3	2	61	0	2,381	2	MALE	1	3	1	1	0	1	0	1
TCGA-06-0130	63.13006	2	3	2	54	1	244	4	MALE	1	4	0	1	1	0	0	0
TCGA-DU-A6S7	67.90059	1	3	1	27	0	638	3	FEMALE	2	3	1	1	0	0	0	0
TCGA-32-1979	59.27051	2	3	3	69	1	265	4	FEMALE	2	4	0	0	0	0	1	0
TCGA-06-0649	72.68234	2	3	3	73	0	62	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-27-2527	33.92882	2	2	3	81	0	438	4	MALE	1	4	0	0	1	0	0	0
TCGA-E1-A7Z6	23.16563	1	1	1	41	1	294	3	FEMALE	2	2	1	1	0	0	0	0
TCGA-DU-6396	62.81282	1	3	1	31	1	106	2	FEMALE	2	3	1	1	0	0	0	1
TCGA-CS-4941	76.48567	1	4	3	67	1	9	3	MALE	1	3	0	0	1	0	0	0
TCGA-06-5411	63.75469	2	3	2	51	1	214	4	MALE	1	4	0	0	0	0	0	0
TCGA-E1-A7YN	40.06703	1	2	2	63	1	420	3	FEMALE	2	3	0	0	1	0	0	0
TCGA-19-5951	28.82833	2	2	3	76	0	244	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-QH-A6X5	47.20241	1	2	2	58	0	497	2	FEMALE	2	2	1	0	0	0	0	0
TCGA-HT-7686	29.33607	1	2	1	29	0	1,300	3	FEMALE	2	3	1	1	0	0	0	1
TCGA-DU-A6S2	45.12261	1	2	1	37	0	777	1	FEMALE	2	2	1	0	0	0	0	0
TCGA-06-0145	42.94978	2	2	2	53	0	71	4	FEMALE	2	4	0	0	1	0	0	0
TCGA-26-6173	52.96133	2	3	2	57	0	241	4	MALE	1	4	0	0	0	0	0	0
TCGA-TQ-A8XE	19.38248	1	1	1	42	1	455	1	FEMALE	2	2	1	1	0	0	0	0
TCGA-14-0736	52.73476	2	3	2	49	1	128	4	MALE	1	4	0	0	0	0	0	0
TCGA-32-5222	64.13894	2	3	3	66	1	118	4	MALE	1	4	0	0	0	0	0	0
TCGA-E1-A7YI	23.4392	1	1	1	33	1	56	3	FEMALE	2	3	1	1	0	0	0	1
TCGA-HT-7606	44.60976	1	2	1	30	0	526	3	FEMALE	2	2	1	1	0	0	0	0
TCGA-S9-A6U2	52.50875	1	3	2	48	0	719	1	FEMALE	2	2	1	0	0	0	0	0
TCGA-FG-A60K	77.59787	1	4	1	34	0	542	2	FEMALE	2	2	1	0	0	0	0	0
TCGA-FG-8182	34.88471	1	2	1	35	0	416	1	MALE	1	2	1	1	0	1	0	1
TCGA-76-4926	75.1765	2	4	3	68	1	34	4	MALE	1	4	0	0	1	0	1	0
TCGA-12-3652	39.08241	2	2	2	60	1	203	4	MALE	1	4	0	0	0	0	1	0
TCGA-HT-8564	54.31798	1	3	2	47	1	478	3	MALE	1	3	0	1	1	0	0	0
TCGA-DU-6401	37.50239	1	2	1	31	1	1,886	1	FEMALE	2	2	1	1	0	0	0	1
TCGA-TM-A7CF	36.006	1	2	1	41	1	1,688	3	FEMALE	2	2	1	1	0	0	0	0
TCGA-06-6388	53.68267	2	3	2	64	1	85	4	FEMALE	2	4	0	0	0	0	0	1
TCGA-14-0786	25.68638	2	2	2	50	1	127	4	FEMALE	2	4	0	0	0	0	1	0
TCGA-HT-A5R7	50.26841	1	3	1	33	0	615	3	FEMALE	2	3	1	0	0	0	0	1
TCGA-DH-5142	61.04824	1	3	1	29	0	922	3	MALE	1	3	1	1	0	0	0	1

Table SI. Continued.

ID	MATH	Group	MATH group	Age group	Age	Restatus	Retime	His group	Sex	Sex group	Grade group	IDH	TP53	TTN	MUC16	EGFR	ATRX
TCGA-19-1790	59.07154	2	3	2	56	1	88	4	MALE	1	4	0	0	0	0	0	0
TCGA-E1-A7YM	83.21516	1	4	2	63	1	88	3	MALE	1	3	0	0	0	0	1	0
TCGA-HT-7470	75.28828	1	4	1	37	0	268	1	MALE	1	3	1	1	0	0	0	1
TCGA-FG-6689	36.47568	1	2	1	30	1	190	3	MALE	1	2	1	1	0	0	0	1
TCGA-TQ-A7RQ	14.35531	1	1	1	38	0	795	1	FEMALE	2	2	1	0	0	0	0	0
TCGA-E1-5319	68.84444	1	3	2	48	1	923	1	FEMALE	2	2	1	0	0	0	0	0
TCGA-DU-7300	50.77191	1	3	2	53	1	317	1	FEMALE	2	3	1	1	0	0	0	0
TCGA-DB-A75P	49.42	1	2	1	25	0	492	3	FEMALE	2	2	0	0	0	0	0	0
TCGA-12-5295	60.79247	2	3	2	60	1	399	4	FEMALE	2	4	0	0	1	1	0	0
TCGA-06-5856	50.79728	2	3	2	58	0	114	4	MALE	1	4	0	0	0	0	1	0
TCGA-12-1600	47.50078	2	2	3	86	1	404	4	MALE	1	4	0	1	0	0	1	0
TCGA-S9-A89Z	30.15887	1	2	1	40	0	364	3	MALE	1	3	1	0	0	1	0	1
TCGA-HT-7856	50.56725	1	3	1	35	0	1,189	1	MALE	1	3	1	0	1	0	0	0
TCGA-HW-8319	29.82746	1	2	1	34	0	262	3	FEMALE	2	3	1	1	0	0	0	1
TCGA-HT-8114	29.98517	1	2	1	36	0	118	2	MALE	1	3	1	1	1	0	0	1
TCGA-06-0129	50.72636	2	3	1	30	1	148	4	MALE	1	4	1	1	0	0	0	0
TCGA-TQ-A7RN	20.23446	1	1	1	32	0	1,026	1	MALE	1	2	1	1	0	0	0	0
TCGA-27-1836	42.36	2	2	1	33	1	172	4	FEMALE	2	4	0	1	0	0	0	0
TCGA-E1-A7YO	60.33409	1	3	2	45	1	1,977	1	MALE	1	3	1	0	1	0	0	0
TCGA-S9-A7J2	11.8081	1	1	1	25	0	62	1	MALE	1	3	1	0	0	0	0	0
TCGA-CS-5393	53.91273	1	3	1	39	0	1,222	3	MALE	1	3	1	1	0	0	0	0
TCGA-27-2521	31.00863	2	2	1	34	0	316	4	MALE	1	4	1	0	0	0	0	1
TCGA-TQ-A7RG	42.08422	1	2	1	36	0	599	2	MALE	1	2	1	0	0	0	0	0
TCGA-QH-A6CW	22.10377	1	1	1	43	0	414	2	MALE	1	3	1	1	0	0	0	0
TCGA-28-5219	64.83637	2	3	2	47	1	258	4	FEMALE	2	4	0	1	1	0	0	0
TCGA-06-1800	48.2503	2	2	2	61	1	750	4	MALE	1	4	0	1	0	1	0	0
TCGA-TQ-A7RP	42.24782	1	2	3	66	0	914	2	MALE	1	2	0	0	0	0	1	0
TCGA-S9-A6WP	54.70643	1	3	1	42	0	461	2	MALE	1	3	1	0	1	0	0	0
TCGA-DB-5274	42.36	1	2	1	37	0	2,289	2	FEMALE	2	3	1	0	1	0	0	0
TCGA-FG-A6J3	59.16943	1	3	2	52	1	677	3	FEMALE	2	3	1	1	1	0	0	0
TCGA-DU-A5TW	38.19591	1	2	1	33	0	760	3	FEMALE	2	3	1	1	0	1	0	0
TCGA-HW-8320	35.52063	1	2	1	36	0	272	3	MALE	1	3	1	1	0	0	0	1
TCGA-E1-A7Z3	35.31677	1	2	1	31	1	1,569	3	FEMALE	2	2	1	0	0	0	0	0
TCGA-06-0125	37.10195	2	2	2	63	1	797	4	FEMALE	2	4	0	0	0	1	1	0
TCGA-19-1388	46.33125	2	2	2	58	1	148	4	MALE	1	4	0	0	0	0	1	0
TCGA-DU-A6S6	63.34745	1	3	1	35	1	2,893	2	FEMALE	2	2	1	0	0	0	0	0
TCGA-HW-7486	45.89	1	2	1	37	0	609	1	MALE	1	2	1	0	1	0	0	0
TCGA-DU-5870	39.64729	1	2	1	34	1	5,546	1	FEMALE	2	2	1	0	0	0	0	0
TCGA-KT-A7W1	27.09941	1	2	2	45	1	438	3	FEMALE	2	3	0	0	1	0	1	0
TCGA-06-A7TL	33.59	2	2	1	30	1	188	4	FEMALE	2	4	1	0	0	0	0	1
TCGA-HT-7608	42.91617	1	2	2	61	0	671	2	MALE	1	2	1	0	0	0	0	0
TCGA-DU-6407	20.03514	1	1	1	35	1	2,397	1	FEMALE	2	2	1	1	0	0	0	1
TCGA-32-4208	47.655	2	2	1	25	0	400	4	MALE	1	4	1	1	0	0	0	1
TCGA-12-0819	49.04561	2	2	2	49	1	428	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-19-5952	42.97223	2	2	2	62	0	567	4	MALE	1	4	0	0	1	0	0	0
TCGA-16-0850	67.54849	2	3	2	52	1	83	4	FEMALE	2	4	0	1	0	0	0	0
TCGA-02-2483	47.22356	2	2	1	43	0	466	4	MALE	1	4	1	1	0	0	0	0
TCGA-S9-A6WN	39.80548	1	2	1	38	1	484	3	FEMALE	2	3	1	0	1	0	1	0
TCGA-19-5953	81.57139	2	4	2	58	1	119	4	MALE	1	4	0	0	0	0	0	0
TCGA-FG-8189	16.98251	1	1	1	33	0	685	1	FEMALE	2	2	1	0	0	0	0	0
TCGA-06-A5U0	30.46069	2	2	1	21	1	100	4	FEMALE	2	4	0	1	0	0	0	0
TCGA-HT-7620	52.04724	1	3	1	40	1	434	1	MALE	1	3	1	0	0	0	0	0
TCGA-S9-A7J0	29.25661	1	2	1	30	1	609	1	FEMALE	2	3	1	1	0	0	0	1
TCGA-TM-A84F	32.94667	1	2	2	48	0	1,796	3	MALE	1	3	1	1	1	0	0	0
TCGA-HT-A5RA	30.8875	1	2	2	65	0	832	3	FEMALE	2	3	0	0	0	0	0	0
TCGA-S9-A6TV	35.94182	1	2	2	50	0	571	2	MALE	1	3	1	1	0	0	0	1
TCGA-DH-A66D	66.1875	1	3	1	43	0	846	3	FEMALE	2	3	1	1	0	0	0	1
TCGA-HT-7695	37.5592	1	2	1	29	0	442	1	FEMALE	2	2	1	0	0	0	0	0
TCGA-E1-5303	64.48626	1	3	1	38	1	156	3	MALE	1	3	1	1	1	0	0	1
TCGA-QH-A6CY	47.62291	1	2	1	38	0	408	2	MALE	1	3	1	0	0	0	0	0
TCGA-DU-5849	55.7746	1	3	2	48	0	443	1	MALE	1	2	1	0	0	0	0	0
TCGA-19-1389	37.44218	2	2	2	51	1	81	4	MALE	1	4	0	0	0	0	0	0
TCGA-28-5220	18.95053	2	1	3	67	1	262	4	MALE	1	4	0	0	0	0	0	0
TCGA-32-1982	74.08805	2	3	3	76	0	142	4	FEMALE	2	4	0	0	1	1	1	0
TCGA-26-1799	26.23289	2	2	3	68	1	213	4	MALE	1	4	0	0	0	0	0	0
TCGA-HW-8322	49.66991	1	2	1	39	0	542	1	MALE	1	2	1	0	0	0	0	0
TCGA-DU-7299	34.22518	1	2	1	33	1	675	3	MALE	1	3	1	1	0	0	0	0
TCGA-E1-A7YV	36.61482	1	2	1	26	1	97	2	FEMALE	2	3	1	0	1	0	0	1
TCGA-DB-A4XC	64.86375	1	3	1	26	0	1,421	2	MALE	1	2	1	1	0	0	0	1
TCGA-QH-A6XA	21.41533	1	1	1	23	0	502	2	FEMALE	2	2	1	1	0	0	0	0
TCGA-QH-A6CU	60.40818	1	3	2	52	0	451	1	FEMALE	2	3	1	0	0	0	0	0
TCGA-19-2629	59.00176	2	3	2	60	1	145	4	MALE	1	4	1	0	0	0	0	0
TCGA-E1-A7Z2	54.08501	1	3	2	58	1	213	1	FEMALE	2	2	0	0	0	0	1	0
TCGA-12-3648	18.16842	2	1	2	61	1	86	4	FEMALE	2	4	0	0	0	0	0	0

Table SI. Continued.

ID	MATH	Group	MATH group	Age group	Age	Restatus	Retime	His group	Sex	Sex group	Grade group	IDH	TP53	TTN	MUC16	EGFR	ATRX
TCGA-DU-5847	58.66819	1	3	1	34	0	548	3	FEMALE	2	3	0	0	0	0	0	0
TCGA-26-6174	84.24656	2	4	2	65	0	71	4	FEMALE	2	4	0	0	1	0	0	0
TCGA-HT-7481	57.98636	1	3	1	39	1	1,800	1	MALE	1	2	1	0	0	0	0	0
TCGA-06-0168	57.71885	2	3	2	59	1	461	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-41-5651	35.93076	2	2	2	59	1	210	4	FEMALE	2	4	0	1	0	1	0	0
TCGA-26-1439	68.22625	2	3	2	63	1	284	4	MALE	1	4	0	0	0	0	1	0
TCGA-TM-A7C3	53.92203	1	3	1	43	1	1,504	3	FEMALE	2	3	0	0	0	0	1	0
TCGA-FG-7636	54.09108	1	3	2	48	0	544	3	MALE	1	3	1	1	0	1	0	1
TCGA-HT-8013	24.84357	1	1	1	37	1	1,306	2	FEMALE	2	2	1	1	1	0	0	1
TCGA-DH-A7UR	48.11635	1	2	2	59	0	1,650	1	FEMALE	2	3	1	0	0	0	0	0
TCGA-DU-5872	26.0982	1	2	1	43	1	532	2	FEMALE	2	2	1	1	0	0	0	1
TCGA-CS-4943	35.38716	1	2	1	37	0	552	3	MALE	1	3	1	1	0	0	0	1
TCGA-DU-A6S3	90.60333	1	4	2	60	0	656	1	MALE	1	2	1	0	0	0	0	0
TCGA-HT-7884	30.6404	1	2	1	44	0	343	3	FEMALE	2	2	1	0	0	0	0	1
TCGA-QH-A6X9	41.16788	1	2	3	73	0	58	1	FEMALE	2	2	1	1	1	0	0	1
TCGA-DU-A7T8	31.93292	1	2	1	35	1	3,028	2	MALE	1	3	1	1	0	0	0	1
TCGA-P5-A5EX	20.42178	1	1	1	41	0	243	1	FEMALE	2	3	1	0	1	0	0	0
TCGA-06-5408	18.91593	2	1	2	54	1	158	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-06-0184	60.36619	2	3	2	63	1	1,276	4	MALE	1	4	0	1	0	0	0	0
TCGA-76-6657	58.53879	2	3	3	74	1	135	4	MALE	1	4	0	0	0	0	0	0
TCGA-06-6390	52.02828	2	3	2	58	0	164	4	MALE	1	4	0	0	1	0	0	0
TCGA-06-0237	30.8875	2	2	3	75	0	315	4	FEMALE	2	4	0	1	0	0	1	0
TCGA-HT-7680	27.45556	1	2	1	32	0	23	3	FEMALE	2	2	0	0	0	0	0	0
TCGA-14-1037	26.86122	2	2	3	66	1	326	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-DB-A64P	48.71371	1	2	1	40	0	916	1	MALE	1	3	1	0	0	1	0	0
TCGA-HT-7611	36.83091	1	2	1	36	0	1,752	2	MALE	1	2	1	1	1	0	0	1
TCGA-S9-A6TX	41.69934	1	2	2	46	1	1,049	1	MALE	1	3	1	0	0	0	0	0
TCGA-HT-7689	43.0265	1	2	2	58	0	455	1	FEMALE	2	2	1	1	0	1	0	1
TCGA-26-5139	47.10932	2	2	2	65	0	48	4	FEMALE	2	4	0	0	0	0	1	0
TCGA-DH-A7UT	68.04075	1	3	1	30	1	407	3	MALE	1	3	1	1	0	0	0	0
TCGA-12-0821	27.54237	2	2	2	62	1	259	4	MALE	1	4	0	0	0	0	0	0
TCGA-CS-4938	23.16563	1	1	1	31	0	143	3	FEMALE	2	2	1	1	0	0	0	1
TCGA-DB-A64S	38.7439	1	2	1	20	0	835	2	MALE	1	2	1	1	0	0	0	1
TCGA-HT-7475	38.43671	1	2	3	67	0	530	2	MALE	1	3	1	1	0	0	0	1
TCGA-HT-8104	65.6926	1	3	2	51	0	372	3	FEMALE	2	3	0	0	0	0	1	0
TCGA-27-1834	60.14577	2	3	2	56	1	335	4	MALE	1	4	0	0	1	0	0	0
TCGA-TQ-A7RW	73.89733	1	3	1	32	1	511	1	MALE	1	2	1	1	0	0	0	0
TCGA-06-1802	42.53899	2	2	2	61	1	81	4	MALE	1	4	0	0	0	0	0	0
TCGA-HT-8106	37.065	1	2	2	53	0	3	3	MALE	1	3	1	1	0	1	0	1
TCGA-DH-A66G	77.82419	1	4	2	49	0	523	1	FEMALE	2	3	1	1	0	0	0	1
TCGA-32-1976	33.20977	2	2	2	65	0	15	4	MALE	1	4	0	0	0	0	0	0
TCGA-14-0817	49.42714	2	2	3	69	0	164	4	FEMALE	2	4	0	0	1	0	0	0
TCGA-28-5207	61.37878	2	3	3	71	0	275	4	MALE	1	4	0	1	0	0	1	0
TCGA-06-0174	41.68575	2	2	2	54	1	47	4	MALE	1	4	0	0	0	0	0	0
TCGA-76-6656	38.0471	2	2	3	66	0	147	4	MALE	1	4	0	0	0	1	1	0
TCGA-S9-A7R7	39.28623	1	2	1	27	1	3,000	3	MALE	1	2	1	1	0	0	0	1
TCGA-FG-A4MW	65.59721	1	3	2	63	1	226	2	MALE	1	3	0	0	0	0	1	0
TCGA-FN-7833	20.23867	1	1	1	25	0	837	2	MALE	1	3	1	1	0	0	0	1
TCGA-DU-7298	52.39263	1	3	1	38	1	200	3	FEMALE	2	3	1	1	0	0	0	1
TCGA-06-2567	24.04216	2	1	2	65	0	133	4	MALE	1	4	0	1	0	0	0	0
TCGA-DB-A75M	24.71	1	1	2	47	0	544	3	MALE	1	2	1	1	0	0	0	1
TCGA-14-3476	60.77195	2	3	3	74	1	9	4	MALE	1	4	0	0	1	1	0	0
TCGA-76-4932	24.94573	2	1	2	50	0	1,458	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-DB-A64L	45.30167	1	2	3	67	1	736	1	FEMALE	2	2	1	0	0	0	0	0
TCGA-DU-5851	57.02308	1	3	1	40	0	531	2	FEMALE	2	3	1	0	0	0	0	1
TCGA-12-0615	38.82299	2	2	3	78	1	160	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-12-0822	50.13279	2	3	2	46	1	91	4	MALE	1	4	0	0	0	0	0	0
TCGA-QH-A86X	63.54	1	3	1	33	0	337	1	MALE	1	2	1	0	0	0	0	0
TCGA-06-0877	59.07829	2	3	3	78	0	204	4	MALE	1	4	0	0	1	0	0	0
TCGA-E1-A7YJ	41.89957	1	2	2	55	1	516	3	MALE	1	3	0	0	1	0	1	0
TCGA-VM-A8CB	35.04327	1	2	1	33	0	3	1	MALE	1	3	1	0	0	0	0	0
TCGA-12-0688	35.32076	2	2	3	74	1	228	4	MALE	1	4	0	0	0	0	0	0
TCGA-DU-7010	60.68885	1	3	2	58	1	193	3	FEMALE	2	3	1	1	0	0	0	1
TCGA-06-0128	46.88564	2	2	3	66	1	190	4	MALE	1	4	1	0	1	0	0	0
TCGA-HT-7877	55.42366	1	3	1	20	0	4	1	FEMALE	2	2	1	0	0	0	0	0
TCGA-28-1750	50.98534	2	3	1	40	1	116	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-27-1833	41.92416	2	2	3	67	1	469	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-DB-A4XH	24.4292	1	1	2	53	0	962	2	FEMALE	2	2	1	0	0	0	0	0
TCGA-19-5959	31.24134	2	2	3	77	1	119	4	FEMALE	2	4	0	0	1	0	0	0
TCGA-02-2470	74.22492	2	3	2	57	1	183	4	MALE	1	4	0	0	0	0	0	0
TCGA-HT-7474	35.24887	1	2	2	52	0	114	2	MALE	1	2	1	1	1	0	0	1
TCGA-06-0241	18.42284	2	1	2	65	1	196	4	FEMALE	2	4	0	1	0	0	0	1
TCGA-12-0828	63.26427	2	3	2	57	1	13	4	MALE	1	4	0	0	0	0	0	0
TCGA-DU-A7TC	42.09852	1	2	1	32	1	1,137	3	MALE	1	2	1	1	1	0	0	0

Table SI. Continued.

ID	MATH	Group	MATH group	Age group	Age	Restatus	Retime	His group	Sex	Sex group	Grade group	IDH	TP53	TTN	MUC16	EGFR	ATRX
TCGA-06-0238	58.45888	2	3	2	46	1	311	4	MALE	1	4	0	0	0	0	0	0
TCGA-27-2523	19.80488	2	1	2	63	1	402	4	MALE	1	4	0	0	1	1	0	0
TCGA-DU-A5TY	52.55561	1	3	2	46	1	526	3	FEMALE	2	3	0	0	0	0	0	0
TCGA-28-1760	54.35229	2	3	2	48	1	105	4	MALE	1	4	0	0	0	0	0	0
TCGA-CS-5395	39.79121	1	2	1	43	1	287	1	MALE	1	2	0	0	0	0	0	0
TCGA-12-3653	44.82279	2	2	1	34	1	224	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-S9-A7R3	55.91813	1	3	1	28	1	3,013	3	FEMALE	2	2	1	1	0	0	0	0
TCGA-4W-AA9T	80.72957	2	4	2	54	1	749	4	FEMALE	2	4	0	0	1	0	1	1
TCGA-28-2502	70.01167	2	3	2	65	0	20	4	MALE	1	4	0	0	0	0	0	0
TCGA-14-1458	33.37996	2	2	2	54	1	81	4	MALE	1	4	1	1	1	0	0	0
TCGA-HT-7472	21.57344	1	1	1	38	0	1	1	MALE	1	2	0	1	0	0	0	1
TCGA-FG-8187	42.13705	1	2	1	31	0	611	2	MALE	1	2	1	0	0	0	0	0
TCGA-DU-5874	18.83441	1	1	2	62	0	461	1	FEMALE	2	2	1	0	0	0	0	0
TCGA-CS-6670	46.596	1	2	1	43	0	201	1	MALE	1	3	1	0	1	0	0	0
TCGA-FG-7641	43.52874	1	2	1	31	0	313	1	MALE	1	2	1	0	0	0	0	0
TCGA-FG-A4MT	22.3326	1	1	1	27	1	1164	1	FEMALE	2	2	1	0	1	1	0	1
TCGA-28-5209	54.46286	2	3	3	66	0	442	4	FEMALE	2	4	0	0	1	0	1	0
TCGA-28-1745	43.92889	2	2	3	76	1	317	4	MALE	1	4	0	0	0	0	1	0
TCGA-06-0155	59.72963	2	3	2	61	1	256	4	MALE	1	4	0	0	1	0	1	0
TCGA-DH-A7US	64.61947	1	3	2	50	0	399	1	MALE	1	2	1	0	0	0	0	0
TCGA-HT-7693	41.17126	1	2	2	51	0	533	1	FEMALE	2	2	1	1	0	0	0	1
TCGA-74-6575	66.9826	2	3	3	73	1	460	4	FEMALE	2	4	0	0	1	0	0	1
TCGA-14-0789	62.43804	2	3	2	54	1	105	4	MALE	1	4	0	0	0	0	1	0
TCGA-DU-6410	21.06925	1	1	2	56	0	242	1	MALE	1	3	1	0	0	0	0	0
TCGA-DU-A7TB	56.18811	1	3	2	56	1	1,567	1	MALE	1	2	0	0	1	0	0	0
TCGA-S9-A6U6	33.535	1	2	1	28	0	489	3	MALE	1	3	1	1	1	0	0	0
TCGA-06-5858	35.69505	2	2	2	45	1	97	4	FEMALE	2	4	0	1	1	1	0	1
TCGA-14-0787	36.49422	2	2	3	69	0	68	4	MALE	1	4	0	0	0	0	0	0
TCGA-06-5412	25.73958	2	2	3	78	1	88	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-S9-A6U0	46.33125	1	2	2	46	1	698	3	MALE	1	3	0	0	0	0	0	0
TCGA-FG-5965	64.48157	1	3	1	39	1	979	2	FEMALE	2	2	1	1	0	0	0	1
TCGA-19-4068	40.21628	2	2	3	68	0	137	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-HT-7684	57.1529	1	3	2	58	0	184	2	MALE	1	3	1	0	0	0	0	0
TCGA-DB-5273	41.22472	1	2	1	33	0	2,493	3	MALE	1	3	1	1	0	0	0	1
TCGA-DU-7018	44.80314	1	2	2	57	1	338	1	FEMALE	2	3	1	0	0	0	0	0
TCGA-19-2625	75.76536	2	4	3	76	0	124	4	FEMALE	2	4	0	1	0	1	0	0
TCGA-HW-7487	54.47294	1	3	1	39	0	409	1	MALE	1	2	1	0	1	0	0	0
TCGA-06-0743	61.98214	2	3	3	69	1	176	4	MALE	1	4	0	1	1	0	1	0
TCGA-DU-8162	33.92589	1	2	2	61	1	402	2	FEMALE	2	3	0	0	0	0	1	0
TCGA-27-1832	64.08658	2	3	2	59	1	176	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-14-0740	46.1341	2	2	3	70	0	364	4	MALE	1	4	0	1	0	1	0	0
TCGA-HT-7857	50.26623	1	3	1	24	0	7	3	FEMALE	2	3	0	0	0	0	0	0
TCGA-P5-A780	46.78427	1	2	1	44	0	72	3	FEMALE	2	3	1	1	0	0	0	0
TCGA-19-1387	53.02354	2	3	3	81	1	79	4	MALE	1	4	0	0	0	0	0	0
TCGA-S9-A7QX	36.20302	1	2	1	36	0	399	3	FEMALE	2	3	1	1	0	1	0	1
TCGA-DU-7294	42.36	1	2	2	53	0	2,869	1	FEMALE	2	2	1	0	0	0	0	0
TCGA-S9-A6WI	23.73899	1	1	2	56	0	2,585	2	FEMALE	2	2	1	0	0	0	0	1
TCGA-DU-6542	18.5325	1	1	1	25	0	73	2	MALE	1	3	1	1	1	0	0	0
TCGA-S9-A6WQ	62.92958	1	3	2	57	0	428	2	FEMALE	2	2	1	1	0	0	0	1
TCGA-DB-A4XB	67.57429	1	3	1	38	0	919	3	MALE	1	3	1	1	0	0	0	0
TCGA-06-0132	28.7469	2	2	2	49	1	482	4	MALE	1	4	0	0	0	0	0	0
TCGA-28-1751	40.595	2	2	2	61	1	219	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-12-0692	39.01579	2	2	3	75	1	35	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-HT-7480	42.42177	1	2	1	33	1	2,287	1	MALE	1	2	1	0	0	0	0	0
TCGA-TQ-A7RF	47.96675	1	2	1	27	0	650	1	FEMALE	2	3	1	1	0	0	0	0
TCGA-HT-7694	63.69537	1	3	2	60	0	210	1	MALE	1	3	1	0	0	0	0	0
TCGA-12-3650	27.58326	2	2	2	46	1	239	4	MALE	1	4	0	0	0	1	0	0
TCGA-02-2466	52.89708	2	3	2	61	1	128	4	MALE	1	4	0	0	0	1	1	0
TCGA-12-1088	43.27505	2	2	2	53	0	3,881	4	FEMALE	2	4	0	1	1	0	0	0
TCGA-DU-6395	58.10369	1	3	1	31	1	1,197	2	MALE	1	2	1	1	0	0	0	1
TCGA-06-0879	63.84053	2	3	2	52	1	699	4	MALE	1	4	0	0	1	0	0	0
TCGA-27-1838	60.68017	2	3	2	59	1	119	4	FEMALE	2	4	0	1	0	0	1	0
TCGA-FG-6691	26.97925	1	2	1	23	0	103	3	FEMALE	2	2	1	1	0	0	0	1
TCGA-S9-A7J1	51.31107	1	3	1	43	0	249	1	MALE	1	2	1	0	0	0	0	0
TCGA-27-2526	69.50013	2	3	3	79	0	87	4	FEMALE	2	4	0	0	0	1	0	0
TCGA-12-0773	45.02749	2	2	1	24	1	725	4	MALE	1	4	0	1	0	0	0	0
TCGA-15-1446	38.34695	2	2	2	55	1	443	4	MALE	1	4	0	0	0	0	0	0
TCGA-DU-7013	18.54616	1	1	2	59	1	187	3	MALE	1	3	0	1	0	0	0	0
TCGA-26-5133	38.16135	2	2	2	59	1	370	4	MALE	1	4	0	1	0	0	0	0
TCGA-E1-5305	49.6938	1	2	1	34	1	1,604	3	MALE	1	3	1	1	0	0	0	1
TCGA-19-2619	35.68292	2	2	2	55	1	146	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-28-5216	39.18829	2	2	2	52	0	415	4	MALE	1	4	0	1	1	0	0	0
TCGA-TQ-A7RK	36.70995	1	2	1	29	1	1,341	2	MALE	1	2	1	1	1	0	0	1
TCGA-WY-A85C	61.04824	1	3	1	36	1	1,426	3	MALE	1	2	1	1	0	0	0	0

Table SI. Continued.

ID	MATH	Group	MATH group	Age group	Age	Restatus	Retime	His group	Sex	Sex group	Grade group	IDH	TP53	TTN	MUC16	EGFR	ATRX
TCGA-VM-A8C8	52.88807	1	3	2	50	1	1,309	1	FEMALE	2	2	1	1	0	0	0	1
TCGA-HT-7681	32.23814	1	2	1	29	0	1,359	2	FEMALE	2	2	1	0	0	0	0	0
TCGA-TQ-A7RH	66.56571	1	3	1	39	0	486	2	MALE	1	2	1	1	0	1	0	1
TCGA-CS-6665	59.32088	1	3	2	51	0	378	3	FEMALE	2	3	1	1	0	0	0	0
TCGA-HT-8109	40.32672	1	2	2	64	0	169	1	MALE	1	3	1	0	0	0	0	0
TCGA-06-0154	64.24169	2	3	2	54	1	208	4	MALE	1	4	0	0	0	0	0	0
TCGA-TQ-A7RV	74.09297	1	3	1	27	1	1,868	3	MALE	1	2	1	1	0	0	0	0
TCGA-14-1395	19.16946	2	1	2	52	0	42	4	MALE	1	4	0	0	0	0	1	0
TCGA-19-A60I	45.63383	2	2	1	39	0	541	4	MALE	1	4	0	0	0	0	0	0
TCGA-E1-A7YQ	53.01418	1	3	2	58	1	580	1	FEMALE	2	3	0	0	0	0	1	0
TCGA-DH-A66B	61.99964	1	3	2	52	0	1,279	3	MALE	1	3	1	1	0	0	0	1
TCGA-19-2631	57.64074	2	3	3	74	0	213	4	FEMALE	2	4	0	0	0	1	0	0
TCGA-06-0214	73.10923	2	3	3	66	1	48	4	MALE	1	4	0	0	0	0	0	0
TCGA-S9-A6UB	39.39338	1	2	2	52	0	3,236	1	MALE	1	2	1	0	0	0	0	0
TCGA-12-3646	20.73486	2	1	2	59	1	1,315	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-HT-7478	78.91258	1	4	1	36	0	194	3	MALE	1	2	1	1	0	0	0	1
TCGA-76-6286	28.98027	2	2	2	60	1	180	4	MALE	1	4	0	1	0	0	0	0
TCGA-DU-7292	47.00122	1	2	3	69	1	91	3	MALE	1	3	0	0	0	0	1	0
TCGA-12-3651	71.68049	2	3	3	77	1	358	4	MALE	1	4	0	0	1	0	0	0
TCGA-02-2486	55.15803	2	3	2	64	0	493	4	MALE	1	4	0	0	0	0	0	0
TCGA-QH-A65V	61.61455	1	3	1	43	0	384	1	FEMALE	2	2	1	0	0	0	0	0
TCGA-06-0157	25.17167	2	2	2	63	0	97	4	FEMALE	2	4	0	0	0	1	1	0
TCGA-DU-A76L	54.96613	1	3	2	54	1	410	1	MALE	1	3	0	0	0	0	0	0
TCGA-FG-A713	39.61769	1	2	3	74	0	622	2	FEMALE	2	2	1	0	0	0	0	1
TCGA-HW-7495	21.18	1	1	2	45	0	131	1	FEMALE	2	2	1	0	0	0	0	0
TCGA-06-0209	45.08065	2	2	3	76	0	119	4	MALE	1	4	0	0	1	1	0	0
TCGA-06-0190	58.50145	2	3	2	62	1	88	4	MALE	1	4	0	1	1	0	0	0
TCGA-P5-A735	25.04104	1	2	1	38	0	292	3	FEMALE	2	2	1	1	0	0	0	1
TCGA-EZ-7264	42.72771	1	2	2	47	0	436	1	FEMALE	2	2	1	0	0	0	0	0
TCGA-S9-A7QZ	60.56388	1	3	1	41	0	396	1	MALE	1	2	1	0	0	0	0	0
TCGA-12-3644	47.14459	2	2	2	47	1	1,142	4	FEMALE	2	4	0	1	1	0	0	0
TCGA-28-1753	62.74988	2	3	2	53	0	37	4	MALE	1	4	0	1	1	0	0	0
TCGA-HT-7879	38.57786	1	2	1	31	0	112	2	MALE	1	3	1	1	0	0	0	1
TCGA-14-1034	72.08032	2	3	2	60	1	282	4	FEMALE	2	4	0	1	1	1	1	0
TCGA-12-0826	56.5554	2	3	1	38	0	845	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-CS-6667	49.19536	1	2	1	39	0	230	3	FEMALE	2	2	1	1	0	0	0	0
TCGA-DU-6399	55.5975	1	3	2	54	1	1,629	1	MALE	1	2	0	1	0	1	0	1
TCGA-32-2491	75.22083	2	4	2	63	1	70	4	MALE	1	4	0	1	1	1	0	0
TCGA-S9-A6TY	44.70312	1	2	2	50	0	953	1	MALE	1	2	1	0	0	0	0	0
TCGA-E1-5304	42.68698	1	2	1	42	1	903	3	MALE	1	3	1	1	0	0	0	1
TCGA-06-5410	12.355	2	1	3	72	0	108	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-S9-A6WO	43.60588	1	2	1	29	1	566	3	MALE	1	2	1	1	0	0	0	1
TCGA-12-0829	50.04505	2	3	3	75	1	473	4	MALE	1	4	0	0	1	1	1	0
TCGA-41-2573	46.88564	2	2	2	59	1	167	4	MALE	1	4	0	0	0	0	0	0
TCGA-DU-6392	26.33328	1	2	1	35	1	6,423	3	FEMALE	2	3	0	1	1	1	1	1
TCGA-DH-5143	44.61004	1	2	1	30	0	438	2	MALE	1	3	1	1	0	0	0	0
TCGA-DB-5275	37.65333	1	2	1	36	0	1,458	2	MALE	1	3	1	1	0	1	0	1
TCGA-TM-A84I	37.75565	1	2	1	30	0	854	3	MALE	1	3	1	1	0	0	0	1
TCGA-06-1084	51.93542	2	3	2	54	1	208	4	MALE	1	4	0	0	1	1	0	0
TCGA-CS-4942	56.81793	1	3	1	44	1	1,184	3	FEMALE	2	3	1	1	0	0	0	0
TCGA-26-5134	20.42591	2	1	3	74	0	167	4	MALE	1	4	0	0	0	0	0	0
TCGA-S9-A6TZ	34.33963	1	2	1	39	1	873	3	FEMALE	2	2	1	1	0	0	0	0
TCGA-DU-7015	31.89836	1	2	1	41	1	2,761	1	FEMALE	2	2	1	1	0	0	0	1
TCGA-06-2563	51.15404	2	3	3	72	1	554	4	FEMALE	2	4	0	1	0	0	1	0
TCGA-12-5301	39.40985	2	2	2	59	0	62	4	MALE	1	4	0	0	0	1	0	0
TCGA-S9-A7QW	33.99016	1	2	2	54	1	458	3	FEMALE	2	3	1	1	1	0	0	1
TCGA-06-0749	70.22842	2	3	2	50	0	66	4	MALE	1	4	0	0	0	0	1	0
TCGA-76-6662	50.19983	2	3	2	58	1	205	4	MALE	1	4	0	1	1	0	0	0
TCGA-W9-A837	19.95808	1	1	2	47	0	1,553	1	MALE	1	2	1	0	0	0	0	0
TCGA-HT-8012	34.65707	1	2	1	30	1	286	1	FEMALE	2	2	1	0	0	0	0	0
TCGA-41-3915	57.14188	2	3	2	48	1	288	4	MALE	1	4	0	0	0	0	0	0
TCGA-S9-A6U9	64.60761	1	3	1	36	0	2,918	3	MALE	1	3	1	1	0	0	0	1
TCGA-DU-6397	56.87688	1	3	2	45	1	837	1	MALE	1	3	1	0	0	0	0	0
TCGA-DU-6402	78.28298	1	4	2	52	1	103	3	MALE	1	3	0	0	0	0	0	0
TCGA-FG-5962	23.40947	1	1	2	54	0	787	1	MALE	1	3	1	0	0	0	0	0
TCGA-WY-A85D	33.56043	1	2	2	60	1	887	2	MALE	1	2	1	1	0	0	0	1
TCGA-76-6191	16.52985	2	1	2	57	1	323	4	MALE	1	4	0	0	0	0	1	0
TCGA-06-6697	89.1498	2	4	2	65	1	306	4	MALE	1	4	0	0	1	0	0	0
TCGA-41-6646	49.48552	2	2	3	73	1	200	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-DB-5270	75.30667	1	4	1	38	0	3,733	2	FEMALE	2	3	1	1	0	0	0	1
TCGA-DH-5141	50.44958	1	3	1	32	0	968	1	MALE	1	3	1	0	0	0	0	0
TCGA-HT-7602	31.44909	1	2	1	21	0	908	1	MALE	1	2	1	1	0	0	0	0
TCGA-DB-A4XD	33.01735	1	2	1	32	0	1,210	3	MALE	1	3	1	1	0	0	0	1
TCGA-06-2559	51.60267	2	3	3	83	0	150	4	MALE	1	4	0	1	0	0	0	0

Table SI. Continued.

ID	MATH	Group	MATH group	Age group	Age	Restatus	Retime	His group	Sex	Sex group	Grade group	IDH	TP53	TTN	MUC16	EGFR	ATRX
TCGA-TM-A7C5	59.304	1	3	1	30	0	1,500	2	MALE	1	2	1	0	0	0	0	0
TCGA-HT-7874	57.48341	1	3	1	41	0	1,130	1	FEMALE	2	3	1	0	0	0	0	0
TCGA-32-4213	61.27665	2	3	2	47	1	353	4	FEMALE	2	4	0	0	1	0	0	0
TCGA-DB-A75L	35.87806	1	2	1	36	0	342	3	FEMALE	2	3	1	0	0	0	0	0
TCGA-DU-8161	70.29569	1	3	2	63	1	111	2	FEMALE	2	3	0	0	0	0	0	0
TCGA-RY-A840	25.27935	1	2	2	47	0	854	1	MALE	1	3	1	0	0	0	0	0
TCGA-76-6282	66.63026	2	3	2	63	1	458	4	MALE	1	4	0	0	0	1	1	0
TCGA-TM-A7C4	51.32077	1	3	1	39	0	1,470	3	FEMALE	2	2	1	1	1	0	0	1
TCGA-19-A6J5	16.64653	2	1	1	40	1	784	4	MALE	1	4	1	1	0	0	0	0
TCGA-16-0849	23.19511	2	1	2	54	0	793	4	MALE	1	4	0	1	0	0	1	1
TCGA-4W-AA9S	42.36	2	2	3	69	0	44	4	MALE	1	4	0	0	0	0	0	0
TCGA-FG-A70Z	41.96691	1	2	2	53	0	328	2	FEMALE	2	3	0	0	1	0	1	0
TCGA-FG-A60L	53.0138	1	3	1	34	0	499	3	FEMALE	2	2	1	1	0	0	0	0
TCGA-QH-A6CX	40.43455	1	2	3	66	1	273	3	MALE	1	2	0	0	0	1	1	0
TCGA-VM-A8C9	55.5975	1	3	1	37	0	915	3	FEMALE	2	2	0	0	0	0	0	0
TCGA-DU-A5TR	36.90926	1	2	2	51	1	908	2	MALE	1	2	1	1	1	0	0	1
TCGA-12-0662	49.42	2	2	2	51	1	600	4	MALE	1	4	0	1	0	0	0	0
TCGA-E1-5311	54.12667	1	3	1	31	1	2,602	1	MALE	1	3	1	0	0	0	0	0
TCGA-HT-7467	39.97218	1	2	2	54	0	3	1	MALE	1	2	1	0	0	0	0	0
TCGA-19-5947	78.91258	2	4	2	47	1	43	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-14-1450	61.775	2	3	2	57	1	826	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-HT-7690	29.82598	1	2	1	29	0	3	2	MALE	1	3	1	1	0	0	0	1
TCGA-FG-8188	66.24962	1	3	1	41	1	455	2	MALE	1	2	1	1	1	0	0	1
TCGA-HT-8110	42.64934	1	2	2	57	0	419	3	MALE	1	3	0	0	1	0	1	0
TCGA-12-0691	36.29281	2	2	2	63	1	98	4	MALE	1	4	0	1	0	0	1	0
TCGA-28-6450	37.02114	2	2	2	60	0	165	4	MALE	1	4	0	0	0	0	0	0
TCGA-FG-A87N	16.8734	1	1	1	37	0	413	3	FEMALE	2	3	1	0	0	0	0	1
TCGA-HW-7491	31.85945	1	2	1	35	0	1,222	1	MALE	1	2	1	0	0	0	0	0
TCGA-HT-7603	44.58605	1	2	1	29	0	705	1	MALE	1	2	1	1	0	0	0	1
TCGA-FG-8185	38.83	1	2	1	37	0	433	3	MALE	1	3	1	0	0	0	0	1
TCGA-74-6584	51.29767	2	3	2	55	1	91	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-DU-6408	23.40947	1	1	1	23	1	2,097	1	FEMALE	2	3	1	1	0	0	0	0
TCGA-S9-A6TS	34.79571	1	2	2	48	1	1,324	3	FEMALE	2	3	1	1	1	0	0	1
TCGA-41-2572	28.82833	2	2	3	67	1	122	4	MALE	1	4	0	0	1	0	0	0
TCGA-HT-7881	5.814118	1	1	1	38	0	89	1	MALE	1	2	1	0	0	0	0	0
TCGA-06-0210	26.47687	2	2	3	72	1	67	4	FEMALE	2	4	0	1	0	0	0	0
TCGA-HT-A619	36.80008	1	2	2	51	0	587	1	FEMALE	2	3	1	0	0	1	0	0
TCGA-HW-7489	48.03883	1	2	1	38	0	253	2	MALE	1	2	1	1	0	0	0	1
TCGA-DU-7306	37.61411	1	2	3	67	1	1,277	2	MALE	1	2	1	1	1	0	0	0
TCGA-DU-A6S8	41.6014	1	2	3	74	1	678	1	FEMALE	2	3	1	0	0	0	0	0
TCGA-06-0747	23.65402	2	1	2	53	0	82	4	MALE	1	4	0	0	1	0	1	0
TCGA-14-3477	51.87058	2	3	1	38	0	115	4	FEMALE	2	4	0	1	0	0	0	0
TCGA-06-0158	53.53314	2	3	3	73	1	90	4	MALE	1	4	0	0	0	0	1	0
TCGA-RY-A845	27.534	1	2	1	40	0	596	2	FEMALE	2	2	1	1	0	1	0	0
TCGA-06-6389	43.04323	2	2	2	49	0	237	4	FEMALE	2	4	1	1	0	0	0	0
TCGA-VM-A8CF	59.93489	1	3	1	44	0	609	3	FEMALE	2	3	1	1	0	0	0	1
TCGA-32-4211	66.2729	2	3	2	56	0	383	4	MALE	1	4	0	0	0	0	0	0
TCGA-06-5859	42.51183	2	2	2	63	0	139	4	MALE	1	4	0	0	0	0	0	0
TCGA-19-5954	36.9185	2	2	3	72	0	242	4	FEMALE	2	4	0	0	0	1	0	0
TCGA-S9-A6U1	47.55118	1	2	1	22	0	536	3	FEMALE	2	3	1	0	0	0	0	1
TCGA-TQ-A7RO	57.02308	1	3	1	29	0	949	2	MALE	1	2	1	0	0	0	0	0
TCGA-76-4929	51.20053	2	3	3	76	0	111	4	FEMALE	2	4	0	1	0	0	0	0
TCGA-4W-AA9R	53.25696	2	3	2	61	0	124	4	MALE	1	4	0	1	0	1	0	0
TCGA-76-6664	65.82846	2	3	2	49	0	237	4	FEMALE	2	4	0	1	0	1	0	0
TCGA-12-1092	56.78308	2	3	2	58	1	637	4	MALE	1	4	0	1	0	0	0	0
TCGA-QH-A65R	20.98902	1	1	1	38	0	461	1	FEMALE	2	3	1	1	0	0	0	0
TCGA-S9-A7QY	44.66319	1	2	1	35	0	863	2	FEMALE	2	2	1	0	0	0	0	0
TCGA-QH-A6X3	40.43455	1	2	1	27	0	313	2	MALE	1	2	1	1	0	0	0	0
TCGA-DU-7304	45.61846	1	2	1	43	1	309	2	MALE	1	3	1	1	1	0	0	1
TCGA-12-1602	34.75971	2	2	2	58	1	140	4	MALE	1	4	0	0	0	0	0	0
TCGA-14-2554	67.37948	2	3	2	52	0	532	4	FEMALE	2	4	0	0	1	0	1	0
TCGA-DB-A4XE	37.90105	1	2	1	27	0	1,139	2	FEMALE	2	3	1	1	0	0	0	1
TCGA-TQ-A7RU	34.12333	1	2	2	51	0	1,032	1	MALE	1	2	1	0	0	0	0	0
TCGA-FG-A6J1	32.78827	1	2	1	44	0	500	1	FEMALE	2	2	1	0	0	0	0	0
TCGA-12-0656	36.55957	2	2	2	48	1	1,467	4	FEMALE	2	4	0	0	1	0	1	0
TCGA-HT-7692	28.69255	1	2	1	43	0	90	2	MALE	1	2	1	0	0	0	0	0
TCGA-06-0646	49.7008	2	2	2	60	1	90	4	MALE	1	4	0	0	0	1	0	0
TCGA-27-1837	61.422	2	3	1	36	1	136	4	MALE	1	4	0	0	0	0	0	0
TCGA-DB-A4XA	16.47333	1	1	1	30	0	573	2	MALE	1	2	1	0	0	1	0	0
TCGA-HT-A4DV	51.23026	1	3	2	51	0	792	1	FEMALE	2	3	1	0	0	0	0	0
TCGA-06-0192	71.25987	2	3	2	58	1	648	4	MALE	1	4	0	0	0	0	0	0
TCGA-19-1390	54.17746	2	3	2	63	0	772	4	FEMALE	2	4	0	1	1	1	0	0
TCGA-74-6581	30.38091	2	2	3	77	0	250	4	MALE	1	4	0	0	0	0	0	0
TCGA-HT-7485	44.97775	1	2	1	42	0	122	3	MALE	1	2	1	1	0	0	0	1

Table SI. Continued.

ID	MATH	Group	MATH group	Age group	Age	Restatus	Retime	His group	Sex	Sex group	Grade group	IDH	TP53	TTN	MUC16	EGFR	ATRX
TCGA-12-1089	51.65134	2	3	2	64	0	177	4	MALE	1	4	0	0	0	0	0	0
TCGA-14-0871	46.75892	2	2	3	74	0	880	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-FG-8191	55.29896	1	3	1	30	0	472	1	MALE	1	3	1	1	0	0	0	1
TCGA-FG-A711	48.87692	1	2	1	33	1	1,329	1	FEMALE	2	2	1	1	0	0	0	1
TCGA-06-0882	61.04824	2	3	1	30	1	213	4	MALE	1	4	0	0	1	0	0	0
TCGA-02-2485	34.08276	2	2	2	53	1	186	4	MALE	1	4	0	1	0	1	1	0
TCGA-06-0875	45.20122	2	2	2	61	1	279	4	FEMALE	2	4	0	1	0	1	0	0
TCGA-DH-A66F	43.396	1	2	2	49	0	523	1	MALE	1	2	1	0	0	0	0	0
TCGA-S9-A7IX	43.42713	1	2	2	57	1	679	3	MALE	1	3	0	0	1	0	1	0
TCGA-81-5911	55.10198	2	3	1	33	1	277	4	MALE	1	4	0	0	0	0	1	0
TCGA-S9-A7J3	36.56402	1	2	2	52	0	518	1	FEMALE	2	3	1	0	1	0	0	0
TCGA-14-1453	27.79875	2	2	3	69	0	35	4	MALE	1	4	0	0	1	0	0	1
TCGA-VV-A86M	21.54205	1	1	1	36	0	487	3	FEMALE	2	3	1	1	0	0	0	1
TCGA-FG-6692	28.58346	1	2	2	63	0	413	1	MALE	1	3	0	0	1	0	0	0
TCGA-28-1755	42.14464	2	2	2	52	0	47	4	FEMALE	2	4	0	0	1	0	0	0
TCGA-S9-A6WG	42.66171	1	2	1	31	0	2,437	3	MALE	1	3	1	1	0	0	0	1
TCGA-DH-A669	40.67703	1	2	3	70	1	260	1	MALE	1	3	1	0	0	0	0	0
TCGA-28-5215	33.01711	2	2	2	62	1	164	4	FEMALE	2	4	0	1	0	0	0	0
TCGA-14-1827	37.065	2	2	2	51	0	179	4	MALE	1	4	0	0	0	0	1	0
TCGA-DB-A4XF	31.38604	1	2	1	41	1	1,021	3	FEMALE	2	3	1	1	0	0	0	0
TCGA-S9-A6WE	47.37424	1	2	1	34	0	2,208	1	MALE	1	2	0	0	0	0	0	0
TCGA-19-4065	61.3487	2	3	1	36	1	70	4	MALE	1	4	0	1	0	0	0	0
TCGA-CS-6186	30.59333	1	2	2	58	1	188	2	MALE	1	3	0	0	0	0	0	0
TCGA-16-1045	69.75734	2	3	2	49	1	654	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-02-0033	32.58462	2	2	2	54	1	32	4	MALE	1	4	0	1	0	0	0	0
TCGA-14-0862	41.02055	2	2	2	60	0	88	4	MALE	1	4	0	0	0	1	0	0
TCGA-P5-A5EW	31.77	1	2	1	20	0	204	3	FEMALE	2	2	1	1	0	0	0	0
TCGA-28-1747	44.95626	2	2	1	44	0	77	4	MALE	1	4	0	0	0	1	1	0
TCGA-DH-A7UU	53.11989	1	3	1	43	0	105	3	MALE	1	3	1	1	0	0	0	0
TCGA-HT-8113	57.6106	1	3	2	49	0	900	1	FEMALE	2	2	1	0	0	0	0	0
TCGA-FG-6690	61.67303	1	3	3	70	0	143	1	MALE	1	2	1	1	0	1	0	1
TCGA-32-4210	57.50526	2	3	3	73	0	113	4	MALE	1	4	0	1	1	0	0	0
TCGA-HT-7880	58.245	1	3	1	30	0	162	2	MALE	1	2	1	1	0	0	0	1
TCGA-S9-A6U5	44.35128	1	2	1	33	0	992	3	MALE	1	2	1	0	0	0	0	0
TCGA-S9-A7R8	44.59821	1	2	1	44	1	698	3	FEMALE	2	3	1	1	0	0	0	0
TCGA-HT-8563	76.54073	1	4	1	30	0	860	3	FEMALE	2	3	1	1	1	0	0	1
TCGA-16-1460	46.00421	2	2	1	36	0	195	4	FEMALE	2	4	1	1	1	0	0	0
TCGA-S9-A6TU	32.06065	1	2	1	38	1	2,650	3	MALE	1	2	1	1	1	0	0	0
TCGA-P5-A781	43.79676	1	2	1	34	0	134	3	FEMALE	2	3	1	0	0	0	0	0
TCGA-14-0867	26.24323	2	2	3	67	0	62	4	MALE	1	4	0	0	0	0	0	0
TCGA-12-0619	47.39721	2	2	2	60	1	203	4	MALE	1	4	0	1	0	0	1	0
TCGA-76-6285	59.3494	2	3	2	64	0	254	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-06-2562	66.95613	2	3	3	81	1	151	4	MALE	1	4	0	0	1	0	0	0
TCGA-DB-A4X9	20.21727	1	1	1	33	1	1,412	2	FEMALE	2	2	1	0	0	0	0	0
TCGA-HT-8105	43.21749	1	2	2	54	0	190	1	MALE	1	3	1	1	0	0	0	0
TCGA-76-6280	50.64783	2	3	2	57	1	108	4	MALE	1	4	0	0	0	0	0	0
TCGA-HT-A74L	15.83974	1	1	1	22	0	336	2	FEMALE	2	2	1	0	0	1	0	0
TCGA-S9-A7IY	40.88855	1	2	1	39	0	715	2	MALE	1	3	1	0	0	0	0	0
TCGA-06-1805	37.77181	2	2	1	28	0	128	4	FEMALE	2	4	1	1	0	0	0	0
TCGA-06-0750	58.62982	2	3	1	43	0	28	4	MALE	1	4	0	0	0	0	1	0
TCGA-E1-A7YW	30.11531	1	2	1	28	1	409	2	MALE	1	2	1	1	0	0	0	1
TCGA-06-1801	48.698	2	2	2	56	1	232	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-06-2558	52.00085	2	3	3	75	0	23	4	FEMALE	2	4	0	1	0	0	0	0
TCGA-HT-8011	32.35642	1	2	2	55	1	494	3	MALE	1	3	0	0	1	1	0	0
TCGA-87-5896	34.53133	2	2	2	50	0	800	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-HT-7858	29.51397	1	2	1	28	0	1,540	3	MALE	1	2	1	1	0	0	0	1
TCGA-76-6192	81.89219	2	4	3	74	1	76	4	MALE	1	4	0	0	0	0	0	0
TCGA-HT-8111	57.91369	1	3	1	32	0	7	2	MALE	1	3	1	1	0	0	0	0
TCGA-HT-7688	61.96252	1	3	2	59	0	964	1	MALE	1	3	1	1	1	0	0	0
TCGA-DH-5144	34.21385	1	2	2	56	0	244	1	FEMALE	2	3	1	0	0	0	0	1
TCGA-DU-A5TP	42.17421	1	2	1	33	1	1,012	3	MALE	1	3	1	1	0	0	0	1
TCGA-FG-8186	30.02076	1	2	1	42	0	487	2	FEMALE	2	3	1	0	0	0	0	0
TCGA-32-1991	44.28545	2	2	2	60	1	345	4	MALE	1	4	0	0	0	0	0	0
TCGA-HT-7469	43.88531	1	2	1	30	1	92	1	MALE	1	3	0	1	0	0	0	1
TCGA-TM-A84L	32.94667	1	2	1	31	1	987	2	MALE	1	2	1	0	0	0	0	1
TCGA-06-2570	24.4292	2	1	1	21	0	285	4	FEMALE	2	4	1	1	0	0	0	0
TCGA-HT-7601	45.71076	1	2	1	30	0	153	3	FEMALE	2	3	1	1	0	0	0	0
TCGA-19-2620	55.67622	2	3	3	70	0	148	4	MALE	1	4	0	0	0	0	1	0
TCGA-DB-A64Q	26.01053	1	2	1	31	0	182	2	FEMALE	2	2	1	0	0	0	0	0
TCGA-19-5955	61.96805	2	3	3	83	0	54	4	MALE	1	4	0	0	1	1	0	0
TCGA-06-0188	67.26439	2	3	3	71	1	310	4	MALE	1	4	0	1	1	0	0	0
TCGA-06-0876	69.04033	2	3	3	72	1	424	4	FEMALE	2	4	0	1	0	0	1	0
TCGA-HT-7691	37.31714	1	2	1	31	0	3	3	FEMALE	2	2	0	0	0	0	0	0
TCGA-06-6695	29.79934	2	2	2	64	1	133	4	MALE	1	4	0	0	0	0	0	0

Table SI. Continued.

ID	MATH	Group	MATH group	Age group	Age	Restatus	Retime	His group	Sex	Sex group	Grade group	IDH	TP53	TTN	MUC16	EGFR	ATRX
TCGA-DU-5855	56.25424	1	3	2	49	0	207	2	FEMALE	2	3	1	1	1	0	0	1
TCGA-27-2518	56.32979	2	3	2	52	1	539	4	MALE	1	4	0	0	0	0	0	0
TCGA-06-0744	35.32917	2	2	3	66	1	1,277	4	MALE	1	4	0	1	1	0	0	0
TCGA-28-2509	54.26056	2	3	3	77	0	145	4	FEMALE	2	4	0	1	0	1	0	0
TCGA-32-2615	35.54772	2	2	2	62	1	131	4	MALE	1	4	0	0	0	0	0	0
TCGA-08-0386	11.9968	2	1	3	74	1	427	4	MALE	1	4	0	0	0	0	0	0
TCGA-KT-A74X	30.73025	1	2	1	26	0	438	2	MALE	1	3	1	0	0	0	0	0
TCGA-06-0141	10.11507	2	1	2	62	1	145	4	MALE	1	4	0	0	0	0	0	0
TCGA-27-2519	64.69038	2	3	2	48	1	256	4	MALE	1	4	0	0	0	0	0	0
TCGA-06-1087	41.2888	2	2	3	75	1	109	4	MALE	1	4	0	1	0	0	0	0
TCGA-QH-A6X8	36.83975	1	2	2	56	0	509	1	FEMALE	2	3	1	0	0	1	0	0
TCGA-28-2506	61.4956	2	3	2	63	1	84	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-06-0648	35.75477	2	2	3	77	1	202	4	MALE	1	4	0	0	1	0	0	0
TCGA-15-0742	34.98835	2	2	2	65	1	232	4	MALE	1	4	0	0	0	1	1	0
TCGA-DU-5854	71.92209	1	3	2	57	1	257	3	FEMALE	2	3	0	0	0	1	0	0
TCGA-06-0171	66.47756	2	3	2	65	1	117	4	MALE	1	4	0	0	0	0	0	0
TCGA-HT-8010	30.44089	1	2	2	64	0	50	1	FEMALE	2	2	1	0	0	0	0	0
TCGA-DU-7009	17.10692	1	1	1	32	1	4,206	1	FEMALE	2	2	1	0	0	0	0	0
TCGA-06-6699	39.91615	2	2	2	58	0	47	4	FEMALE	2	4	0	0	0	1	0	0
TCGA-S9-A6UA	54.58186	1	3	3	66	1	161	3	MALE	1	3	0	0	0	0	0	1
TCGA-14-0865	43.11106	2	2	3	67	1	215	4	MALE	1	4	0	0	0	0	0	0
TCGA-DU-8168	28.7034	1	2	2	55	0	431	1	FEMALE	2	3	1	0	0	1	0	0
TCGA-32-1980	24.71	2	1	3	72	0	36	4	MALE	1	4	0	0	0	0	0	0
TCGA-14-1825	30.41231	2	2	3	70	1	82	4	MALE	1	4	0	1	1	0	0	0
TCGA-19-1788	37.31714	2	2	1	39	0	112	4	MALE	1	4	1	0	0	0	0	0
TCGA-E1-5322	31.9844	1	2	1	38	1	1,085	2	FEMALE	2	2	1	1	0	0	0	1
TCGA-S9-A7IQ	37.065	1	2	2	45	0	1,099	2	FEMALE	2	2	1	0	0	0	0	0
TCGA-19-1786	58.72903	2	3	2	64	0	218	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-FG-A4MU	48.31213	1	2	2	58	0	326	2	MALE	1	3	0	0	0	0	1	0
TCGA-DB-A64R	32.32737	1	2	1	24	0	955	1	FEMALE	2	2	1	0	0	0	0	0
TCGA-14-1456	49.36787	2	2	1	23	1	98	4	MALE	1	4	1	1	0	0	1	1
TCGA-HT-7610	39.65989	1	2	1	25	1	1,706	2	FEMALE	2	2	1	1	0	0	0	1
TCGA-06-0644	62.1246	2	3	3	71	1	85	4	MALE	1	4	0	1	0	0	0	0
TCGA-76-4934	51.45113	2	3	3	66	0	77	4	FEMALE	2	4	0	1	0	0	0	0
TCGA-32-2634	47.32562	2	2	3	82	0	270	4	MALE	1	4	0	1	0	0	0	0
TCGA-14-1823	62.77611	2	3	2	58	1	140	4	FEMALE	2	4	0	0	1	0	0	0
TCGA-HT-7875	30.97668	1	2	2	56	0	10	1	MALE	1	2	1	0	0	0	0	0
TCGA-19-5956	46.07238	2	2	2	53	1	647	4	FEMALE	2	4	0	1	1	1	1	1
TCGA-32-1970	26.73735	2	2	2	59	1	408	4	MALE	1	4	0	1	0	0	1	0
TCGA-HT-7609	13.06899	1	1	1	34	0	1,399	2	MALE	1	3	1	1	0	0	0	0
TCGA-19-5950	49.80609	2	2	2	52	1	294	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-DU-A5TS	25.64145	1	2	1	42	1	964	1	MALE	1	2	1	0	0	0	0	1
TCGA-19-0957	44.40807	2	2	2	48	1	50	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-TM-A84M	19.95808	1	1	1	40	0	754	1	MALE	1	3	1	1	0	1	0	0
TCGA-06-0187	23.49238	2	1	3	69	1	531	4	MALE	1	4	0	0	0	0	0	0
TCGA-TQ-A7RM	45.72997	1	2	1	41	0	1,116	2	FEMALE	2	3	1	1	1	0	0	0
TCGA-HT-A614	45.0338	1	2	2	47	0	82	2	MALE	1	2	1	1	0	0	0	1
TCGA-TM-A7CA	62.87813	1	3	1	44	0	1,058	3	MALE	1	2	1	1	0	0	0	0
TCGA-14-0781	69.11888	2	3	2	49	0	29	4	MALE	1	4	0	0	0	1	0	0
TCGA-06-0645	63.43672	2	3	2	55	0	98	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-FG-A6IZ	38.50909	1	2	2	60	0	457	1	MALE	1	2	1	0	0	0	0	0
TCGA-27-1831	67.91934	2	3	3	66	1	144	4	MALE	1	4	0	0	0	1	1	0
TCGA-HT-7476	44.59463	1	2	1	26	0	199	3	MALE	1	2	1	1	0	0	0	1
TCGA-HT-7855	38.90511	1	2	1	39	0	585	3	MALE	1	3	1	1	0	0	0	0
TCGA-14-0812	62.65181	2	3	2	65	0	99	4	MALE	1	4	0	0	0	0	0	0
TCGA-WY-A85E	59.6199	1	3	2	48	1	633	2	FEMALE	2	2	1	1	0	1	0	1
TCGA-S9-A6WM	34.63265	1	2	2	59	1	604	3	FEMALE	2	3	0	0	1	0	0	0
TCGA-06-0137	25.36089	2	2	2	63	1	487	4	FEMALE	2	4	0	0	1	0	0	0
TCGA-12-1093	46.79218	2	2	3	66	1	322	4	FEMALE	2	4	0	0	1	0	0	0
TCGA-06-6701	43.26275	2	2	2	60	0	151	4	MALE	1	4	1	1	0	0	0	0
TCGA-QH-A6CV	51.07284	1	3	2	51	0	442	2	MALE	1	3	0	1	0	0	0	0
TCGA-VM-A8CA	43.55214	1	2	2	54	0	411	1	MALE	1	2	1	0	0	0	0	0
TCGA-06-0185	31.90288	2	2	2	54	1	711	4	MALE	1	4	0	0	1	0	0	0
TCGA-14-1794	45.52029	2	2	2	59	0	30	4	MALE	1	4	0	1	0	0	0	0
TCGA-06-6693	29.652	2	2	2	64	0	15	4	FEMALE	2	4	0	0	0	0	1	0
TCGA-HT-7854	47.85111	1	2	2	62	0	292	3	MALE	1	2	0	0	0	0	0	0
TCGA-28-5211	73.22357	2	3	1	42	1	225	4	MALE	1	4	0	0	0	0	0	0
TCGA-06-0166	52.95	2	3	2	51	1	66	4	MALE	1	4	0	0	0	0	0	0
TCGA-HW-A5KM	64.0538	1	3	1	35	0	630	3	MALE	1	2	1	1	0	0	0	1
TCGA-HT-7677	27.36299	1	2	2	53	0	494	1	MALE	1	3	1	0	0	0	0	0
TCGA-12-0616	33.24238	2	2	1	36	1	398	4	FEMALE	2	4	0	0	0	0	1	0
TCGA-41-2571	60.30915	2	3	3	89	1	26	4	MALE	1	4	0	0	0	0	0	0
TCGA-28-5208	37.98371	2	2	2	52	1	148	4	MALE	1	4	0	0	0	0	0	0
TCGA-19-5958	53.94852	2	3	2	56	1	356	4	MALE	1	4	0	0	1	0	0	0

Table SI. Continued.

ID	MATH	Group	MATH group	Age group	Age	Restatus	Retime	His group	Sex	Sex group	Grade group	IDH	TP53	TTN	MUC16	EGFR	ATRX
TCGA-HT-A61B	42.22884	1	2	1	22	0	533	3	MALE	1	3	1	1	0	0	0	0
TCGA-TQ-A7RJ	62.488	1	3	1	25	0	1,229	2	FEMALE	2	2	1	1	0	1	0	1
TCGA-TM-A84H	47.82047	1	2	1	44	0	926	2	FEMALE	2	3	1	1	0	1	0	0
TCGA-HT-A61C	37.28154	1	2	3	66	1	476	1	MALE	1	3	0	0	1	1	1	0
TCGA-32-2495	35.14311	2	2	2	59	1	252	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-06-0169	58.67825	2	3	3	68	1	92	4	MALE	1	4	0	0	0	0	0	0
TCGA-12-1597	41.03625	2	2	2	62	1	180	4	FEMALE	2	4	0	0	1	0	0	0
TCGA-06-0221	30.11306	2	2	1	31	1	260	4	MALE	1	4	1	0	1	0	0	1
TCGA-CS-5394	19.70819	1	1	1	40	0	3	3	MALE	1	3	1	0	0	0	0	0
TCGA-TM-A84T	20.14402	1	1	1	19	0	724	2	MALE	1	2	1	1	0	0	0	1
TCGA-06-5414	68.46558	2	3	2	61	1	167	4	MALE	1	4	0	0	0	0	0	0
TCGA-HT-A618	39.6581	1	2	1	37	0	512	3	FEMALE	2	3	0	1	0	0	0	1
TCGA-S9-A6WL	75.41364	1	4	2	52	1	946	3	MALE	1	3	1	0	0	0	0	0
TCGA-HT-A615	37.46788	1	2	1	38	0	515	1	FEMALE	2	2	1	0	0	0	0	0
TCGA-32-2616	28.34869	2	2	2	48	1	182	4	FEMALE	2	4	0	1	1	0	0	0
TCGA-DU-5853	34.00946	1	2	1	29	0	407	2	MALE	1	2	1	1	0	1	0	1
TCGA-06-0686	42.31996	2	2	2	53	1	160	4	MALE	1	4	0	0	1	1	0	0
TCGA-CS-4944	47.17364	1	2	2	50	0	323	3	MALE	1	2	1	0	0	0	0	0
TCGA-12-0775	46.62844	2	2	3	75	1	94	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-16-0848	43.10996	2	2	2	57	1	129	4	MALE	1	4	0	1	1	0	0	0
TCGA-12-0820	55.6806	2	3	1	40	1	272	4	MALE	1	4	0	0	0	0	0	0
TCGA-S9-A7IZ	41.78236	1	2	2	48	0	217	3	FEMALE	2	3	1	1	0	0	0	1
TCGA-19-1385	34.594	2	2	3	69	1	177	4	MALE	1	4	0	0	0	0	0	0
TCGA-FG-A4MY	49.42	1	2	1	44	0	721	2	FEMALE	2	2	1	1	1	0	0	1
TCGA-28-1749	26.799	2	2	3	73	1	280	4	MALE	1	4	0	0	0	0	1	0
TCGA-14-1821	34.13232	2	2	1	31	1	331	4	MALE	1	4	1	1	0	0	0	0
TCGA-27-2524	53.23882	2	3	2	56	0	231	4	MALE	1	4	0	0	0	1	0	0
TCGA-19-2623	51.19467	2	3	2	65	0	229	4	MALE	1	4	0	1	0	0	0	0
TCGA-DU-8164	22.63331	1	1	2	51	0	651	1	MALE	1	2	1	0	1	0	0	0
TCGA-FG-7643	74.13	1	3	2	49	1	293	2	FEMALE	2	2	0	0	0	0	0	0
TCGA-HT-7605	36.01096	1	2	1	38	0	139	1	MALE	1	2	1	0	0	0	0	0
TCGA-76-6663	57.98691	2	3	1	44	0	235	4	FEMALE	2	4	0	0	1	0	0	0
TCGA-E1-5302	36.9563	1	2	1	41	1	1,242	3	MALE	1	3	1	1	0	0	0	1
TCGA-S9-A7R4	40.242	1	2	2	46	0	914	3	MALE	1	3	1	1	0	0	0	0
TCGA-06-5413	50.52268	2	3	3	67	1	195	4	MALE	1	4	0	0	1	0	0	0
TCGA-HT-7902	70.70862	1	3	1	30	0	956	2	FEMALE	2	2	1	1	0	1	0	1
TCGA-16-0846	54.48917	2	3	3	85	0	119	4	MALE	1	4	0	1	0	0	0	0
TCGA-FG-5964	49.64986	1	2	2	62	0	378	1	MALE	1	2	1	0	0	0	0	0
TCGA-06-0189	24.12366	2	1	2	55	0	454	4	MALE	1	4	0	0	0	0	0	0
TCGA-06-5415	30.95538	2	2	2	60	0	260	4	MALE	1	4	0	0	1	0	0	0
TCGA-DU-7008	37.93712	1	2	1	41	1	4,752	1	FEMALE	2	2	1	1	0	0	0	1
TCGA-12-3649	38.24619	2	2	3	76	1	351	4	MALE	1	4	0	0	1	0	0	0
TCGA-FG-A710	30.27128	1	2	2	50	0	1115	1	FEMALE	2	2	1	0	0	0	0	0
TCGA-32-2494	66.85178	2	3	2	58	1	488	4	FEMALE	2	4	0	0	1	0	0	0
TCGA-DU-6394	30.1816	1	2	2	53	1	353	1	MALE	1	3	1	0	0	0	0	0
TCGA-DB-5280	25.62097	1	2	1	43	0	1,112	2	MALE	1	2	1	1	0	0	0	1
TCGA-QH-A6CZ	25.83318	1	2	1	38	0	279	2	MALE	1	2	1	1	0	0	0	0
TCGA-41-2575	36.64015	2	2	3	75	1	131	4	MALE	1	4	0	1	1	0	0	0
TCGA-14-1396	55.33104	2	3	3	78	0	34	4	FEMALE	2	4	0	1	1	1	0	1
TCGA-E1-A7YD	53.49181	1	3	2	57	1	284	3	MALE	1	3	0	1	0	0	1	0
TCGA-S9-A89V	70.41246	1	3	3	70	1	569	3	MALE	1	3	0	0	0	0	0	1
TCGA-26-1442	35.77964	2	2	1	43	0	953	4	MALE	1	4	1	1	0	0	0	0
TCGA-E1-A7YH	24.71	1	1	2	47	1	689	3	FEMALE	2	3	1	1	0	0	0	1
TCGA-32-2638	50.55089	2	3	3	67	0	224	4	MALE	1	4	0	0	0	1	0	0
TCGA-06-2569	67.54067	2	3	1	24	0	13	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-S9-A6U8	55.42902	1	3	1	24	1	367	3	MALE	1	2	1	1	0	1	0	1
TCGA-14-1455	30.78707	2	2	2	61	0	28	4	MALE	1	4	0	0	0	0	1	0
TCGA-32-4209	29.35182	2	2	1	40	1	94	4	MALE	1	4	0	0	0	0	0	0
TCGA-32-1986	52.86273	2	3	3	68	1	233	4	MALE	1	4	0	0	0	0	0	0
TCGA-E1-A7YE	38.05076	1	2	1	32	1	188	3	FEMALE	2	3	1	0	0	1	0	1
TCGA-E1-5307	45.86085	1	2	2	62	1	1,452	3	FEMALE	2	3	1	1	0	0	0	1
TCGA-06-0219	58.64965	2	3	3	67	0	11	4	MALE	1	4	0	0	0	0	0	0
TCGA-27-1830	59.82421	2	3	2	57	1	124	4	MALE	1	4	0	1	1	0	0	0
TCGA-QH-A6CS	35.18704	1	2	1	41	1	588	3	MALE	1	3	0	0	1	0	0	0
TCGA-DU-A76R	45.8673	1	2	2	51	1	338	1	MALE	1	3	1	0	0	0	0	0
TCGA-06-0216	30.50735	2	2	2	61	1	175	4	FEMALE	2	4	0	0	1	1	0	0
TCGA-76-4928	36.4493	2	2	3	85	0	94	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-DU-8166	30.45808	1	2	1	29	1	516	2	FEMALE	2	2	1	1	0	0	0	1
TCGA-HT-8108	32.77282	1	2	1	26	0	76	1	FEMALE	2	2	1	1	1	0	0	1
TCGA-14-0866	44.22044	2	2	2	55	1	97	4	MALE	1	4	0	0	0	0	1	0
TCGA-P5-A736	39.19097	1	2	1	44	0	230	3	FEMALE	2	3	1	1	0	0	0	1
TCGA-S9-A6TW	50.72053	1	3	1	40	1	1,151	1	MALE	1	3	1	0	0	0	0	0
TCGA-FG-5963	53.3736	1	3	1	23	1	547	3	MALE	1	3	0	1	0	0	0	1
TCGA-HT-7873	35.15584	1	2	1	29	0	298	2	MALE	1	2	1	1	0	0	0	1

Table SI. Continued.

ID	MATH	Group	MATH group	Age group	Age	Restatus	Retime	His group	Sex	Sex group	Grade group	IDH	TP53	TTN	MUC16	EGFR	ATRX
TCGA-14-1043	51.5687	2	3	2	61	0	24	4	MALE	1	4	0	0	0	1	0	0
TCGA-26-A7UX	17.82634	2	1	2	47	1	407	4	MALE	1	4	0	0	0	0	0	0
TCGA-DU-A76K	64.06296	1	3	3	87	1	203	1	MALE	1	2	0	0	0	0	0	0
TCGA-HT-7479	65.10889	1	3	1	44	0	216	3	MALE	1	3	1	1	0	0	0	0
TCGA-06-2566	45.81905	2	2	1	23	0	182	4	FEMALE	2	4	0	0	0	1	0	0
TCGA-DU-5871	48.69004	1	2	1	37	0	576	2	FEMALE	2	2	1	1	0	0	0	0
TCGA-06-6698	34.44424	2	2	2	53	0	145	4	FEMALE	2	4	0	1	0	0	0	0
TCGA-02-0047	59.8634	2	3	3	78	1	57	4	MALE	1	4	0	0	0	0	0	0
TCGA-19-1787	37.06599	2	2	2	48	1	308	4	MALE	1	4	1	1	1	0	0	1
TCGA-26-5132	33.58209	2	2	3	74	0	286	4	MALE	1	4	0	0	0	0	0	0
TCGA-14-1829	54.89211	2	3	2	57	0	218	4	MALE	1	4	0	0	0	1	0	0
TCGA-41-3393	72.07897	2	3	3	81	0	135	4	FEMALE	2	4	0	0	0	1	0	0
TCGA-19-2621	44.48429	2	2	3	83	0	33	4	MALE	1	4	0	0	0	0	1	1
TCGA-06-2564	78.32604	2	4	2	50	0	181	4	MALE	1	4	0	0	1	0	0	0
TCGA-P5-A5EZ	52.56577	1	3	1	39	0	70	3	MALE	1	3	1	1	0	1	0	0
TCGA-14-1795	60.72163	2	3	3	66	0	60	4	MALE	1	4	0	1	1	0	0	0
TCGA-FG-A60J	36.33824	1	2	2	47	0	449	2	FEMALE	2	2	1	1	0	0	0	0
TCGA-S9-A6WH	62.53241	1	3	3	73	0	987	2	FEMALE	2	2	1	0	1	0	0	0
TCGA-DU-7301	36.22261	1	2	2	53	1	366	1	MALE	1	2	1	1	0	0	0	1
TCGA-28-1752	41.60049	2	2	1	42	0	258	4	FEMALE	2	4	0	0	0	0	1	0
TCGA-06-6694	57.91672	2	3	3	76	0	224	4	FEMALE	2	4	0	1	0	0	0	0
TCGA-DB-A64V	39.24529	1	2	2	54	0	889	1	MALE	1	2	1	0	0	0	0	0
TCGA-QH-A6XC	31.89216	1	2	2	48	1	508	3	MALE	1	3	0	0	0	0	1	0
TCGA-DU-7309	60.28987	1	3	1	41	0	84	1	FEMALE	2	3	1	1	0	0	0	1
TCGA-06-5416	63.8605	2	3	1	23	0	204	4	FEMALE	2	4	1	1	1	1	1	1
TCGA-06-2557	47.99865	2	2	3	76	0	33	4	MALE	1	4	0	0	0	0	0	0
TCGA-CS-6290	22.239	1	1	1	31	0	546	3	MALE	1	3	1	1	0	0	0	0
TCGA-IK-7675	31.16333	1	2	1	43	1	123	1	MALE	1	2	1	1	0	0	0	0
TCGA-DU-A5TT	64.40684	1	3	3	70	1	743	1	MALE	1	3	0	1	0	0	1	0
TCGA-06-0745	44.59295	2	2	2	59	1	92	4	MALE	1	4	0	0	0	1	0	0
TCGA-06-5418	57.6096	2	3	3	75	0	83	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-WH-A86K	25.55634	1	2	2	65	0	405	3	MALE	1	2	1	1	0	0	0	0
TCGA-12-1598	37.20544	2	2	3	75	0	287	4	FEMALE	2	4	0	1	0	0	0	0
TCGA-QH-A65X	17.27406	1	1	1	28	0	482	2	FEMALE	2	3	1	0	0	0	0	0
TCGA-FG-A70Y	40.00667	1	2	1	20	1	868	1	FEMALE	2	2	1	1	0	0	0	1
TCGA-06-5417	23.04476	2	1	2	45	0	155	4	FEMALE	2	4	1	1	0	0	0	1
TCGA-06-0152	63.99325	2	3	3	68	1	299	4	MALE	1	4	0	0	0	1	0	0
TCGA-12-0670	25.69006	2	2	2	60	1	379	4	MALE	1	4	0	0	0	1	0	0
TCGA-DU-8163	30.49652	1	2	1	29	1	629	2	MALE	1	3	1	1	0	0	0	1
TCGA-12-1599	59.87679	2	3	2	47	1	89	4	FEMALE	2	4	0	0	1	0	0	0
TCGA-DB-A64X	34.28297	1	2	2	56	0	563	3	FEMALE	2	3	1	1	1	0	0	0
TCGA-06-0122	41.81692	2	2	3	84	0	8	4	FEMALE	2	4	0	0	1	0	0	0
TCGA-76-4925	28.40837	2	2	3	76	1	88	4	MALE	1	4	0	1	0	0	0	0
TCGA-QH-A65S	52.50875	1	3	1	32	0	77	2	FEMALE	2	2	1	1	0	0	0	1
TCGA-DB-A4XG	18.26932	1	1	1	34	0	2,219	1	MALE	1	3	1	0	0	0	0	0
TCGA-DB-5277	38.55963	1	2	1	34	1	1,156	3	MALE	1	3	1	1	0	0	0	0
TCGA-HW-A5KJ	44.56111	1	2	3	68	1	619	1	MALE	1	3	1	0	0	0	0	0
TCGA-28-5214	59.87791	2	3	2	53	1	247	4	MALE	1	4	0	0	0	0	0	0
TCGA-19-5960	31.66836	2	2	2	56	1	382	4	MALE	1	4	0	0	1	0	0	0
TCGA-06-2561	64.66881	2	3	2	53	1	78	4	FEMALE	2	4	0	0	1	0	0	0
TCGA-06-A7TK	35.83074	2	2	2	64	1	342	4	MALE	1	4	0	0	0	1	0	0
TCGA-12-5299	20.79048	2	1	2	56	0	98	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-06-0650	23.97919	2	1	1	39	1	351	4	FEMALE	2	4	0	0	0	0	0	0
TCGA-19-1789	50.96438	2	3	3	69	0	99	4	FEMALE	2	4	0	0	0	0	1	0
TCGA-14-4157	13.89231	2	1	1	40	1	96	4	MALE	1	4	1	1	0	0	0	0
TCGA-DB-5279	67.26611	1	3	2	59	1	1,354	1	MALE	1	2	1	0	0	0	0	0
TCGA-HT-7604	38.78861	1	2	2	50	0	3,725	3	MALE	1	2	1	1	0	1	0	1
TCGA-HT-7676	17.50292	1	1	1	26	0	5	1	MALE	1	2	1	1	0	0	0	1
TCGA-76-6193	81.93218	2	4	3	78	1	64	4	MALE	1	4	0	1	0	1	0	0
TCGA-06-6700	88.02938	2	4	3	76	0	145	4	MALE	1	4	0	0	0	0	0	0
TCGA-QH-A65Z	51.98727	1	3	2	54	0	427	1	MALE	1	2	1	0	0	0	0	0
TCGA-74-6578	39.52531	2	2	2	58	1	222	4	MALE	1	4	0	0	0	1	0	0
TCGA-06-2565	35.50362	2	2	2	59	1	178	4	MALE	1	4	0	0	0	0	1	0
TCGA-06-0124	75.88909	2	4	3	67	0	123	4	MALE	1	4	0	0	0	0	0	0
TCGA-TQ-A7RI	36.74821	1	2	1	37	0	62	1	FEMALE	2	2	1	0	1	0	0	0
TCGA-TM-A84J	52.22827	1	3	2	63	1	735	1	MALE	1	3	0	1	0	0	0	0
TCGA-DB-A75K	28.91885	1	2	2	55	0	368	2	FEMALE	2	3	1	0	1	0	0	0
TCGA-QH-A6X4	40.99207	1	2	2	47	0	442	2	MALE	1	3	1	0	0	0	0	0
TCGA-12-0618	17.18565	2	1	2	49	0	50	4	MALE	1	4	0	1	0	0	0	0
TCGA-02-0003	44.70399	2	2	2	50	1	40	4	MALE	1	4	0	1	0	0	1	0
TCGA-FG-6688	30.65715	1	2	2	59	0	221	3	FEMALE	2	3	0	0	1	0	0	0
TCGA-06-1804	22.46364	2	1	3	81	0	414	4	FEMALE	2	4	0	0	0	0	1	0
TCGA-HT-7468	26.95636	1	2	1	30	0	203	1	MALE	1	3	1	0	1	0	0	0
TCGA-DB-5276	71.81344	1	3	1	32	0	2,218	2	MALE	1	3	1	1	0	0	0	0

Table SI. Continued.

ID	MATH	Group	MATH group	Age group	Age	Restatus	Retime	His group	Sex	Sex group	Grade group	IDH	TP53	TTN	MUC16	EGFR	ATRX
TCGA-IK-8125	36.46855	1	2	2	62	0	1,120	2	MALE	1	3	1	0	1	0	0	0
TCGA-27-1835	20.93029	2	1	2	53	1	157	4	FEMALE	2	4	0	1	0	0	0	0
TCGA-DU-A7TA	54.08744	1	3	1	32	0	2,565	1	MALE	1	2	1	1	0	1	0	1
TCGA-DU-A5TU	69.03506	1	3	2	62	1	796	3	FEMALE	2	2	1	1	1	0	0	1
TCGA-76-4927	71.42093	2	3	2	58	1	416	4	MALE	1	4	0	0	0	0	0	0
TCGA-DU-8165	62.94414	1	3	2	60	0	582	1	FEMALE	2	3	0	1	0	0	0	0
TCGA-06-0878	47.99372	2	2	3	74	1	66	4	MALE	1	4	0	0	0	0	1	0
TCGA-HT-7477	43.72886	1	2	2	62	0	738	3	MALE	1	3	1	1	1	0	0	1
TCGA-DU-7302	37.47231	1	2	2	48	1	1,834	1	FEMALE	2	3	1	0	0	0	0	0
TCGA-06-0195	49.66816	2	2	2	63	1	147	4	MALE	1	4	0	1	1	0	0	0
TCGA-28-2513	20.40982	2	1	3	69	1	75	4	FEMALE	2	4	0	0	1	0	0	0
TCGA-HT-7687	28.00467	1	2	3	74	0	3	1	MALE	1	3	1	0	0	0	0	0
TCGA-14-0790	31.95145	2	2	2	64	0	419	4	FEMALE	2	4	0	0	0	0	1	0
TCGA-12-0827	37.02756	2	2	1	38	0	1,179	4	FEMALE	2	4	1	0	0	0	0	0
TCGA-27-2528	56.42432	2	3	2	62	1	72	4	MALE	1	4	0	0	0	0	0	0
TCGA-TM-A84S	28.77476	1	2	1	36	0	454	1	MALE	1	3	1	0	0	0	0	0
TCGA-FG-7634	51.98727	1	3	1	28	0	467	1	MALE	1	2	1	0	0	0	0	0

TTN, titin; MUC16, mucin 16; TP53, tumor protein p53; ATRX, ATRX chromatin remodeler; EGFR, epidermal growth factor receptor; IDH, isocitrate dehydrogenase (NADP⁺); MATH, mutant-allele tumor heterogeneity; TCGA, The Cancer Genome Atlas.