

Table S1 Summary of 5hmC sequencing results.

sample ID	type	total reads sequenced	unique nonduplicate mapped reads	unique nonduplicate mapped rate
10	healthy cfDNA	20081973	15192613	0.76
11	healthy cfDNA	19142986	14762956	0.77
27	healthy cfDNA	21862078	16645192	0.76
35-1 *	healthy cfDNA	29132339	16742468	0.57
35-2 *	healthy cfDNA	28694218	17346511	0.60
36-1 *	healthy cfDNA	32202519	20996955	0.65
36-2 *	healthy cfDNA	31089686	20993595	0.68
38o	healthy cfDNA	20124203	15295376	0.76
38	healthy cfDNA	20419287	15679281	0.77
39o	healthy cfDNA	22320662	17833176	0.80
input §	cfDNA input	38574253	25910419	0.67
35-blood	whole blood gDNA	44077590	31654982	0.72
36-blood	whole blood gDNA	40843066	29266169	0.72
blood-input †	whole blood gDNA input	39138506	26455609	0.68
lung293	lung cancer	14172402	11470840	0.81
lung323	lung cancer	12269885	8916594	0.73
lung324	lung cancer	13313728	10058078	0.76
lung395	lung cancer	13589263	10092883	0.74
lung417	lung cancer	13212811	10109574	0.77
lung418	lung cancer	13103903	10420656	0.80
lung419	lung cancer	11949356	9704240	0.81
lung492	lung cancer	12563742	8885504	0.71
lung493	lung cancer	12930120	10479700	0.81
lung496	lung cancer	12267496	9657956	0.79
lung512	lung cancer	12934833	10483836	0.81
lung513	lung cancer	11310088	8304508	0.73
lung514	lung cancer	12895079	10264145	0.80
lung515	lung cancer	12132995	9406700	0.78
lung517	lung cancer	11766082	8857054	0.75
HCC150	HCC	15215190	11298385	0.74
HCC237	HCC	13439935	10109197	0.75
HCC241	HCC	16201676	12017320	0.74
HCC256	HCC	14579945	10728759	0.74
HCC260	HCC	13791503	10021911	0.73
HCC285	HCC	11522024	7662330	0.67
HCC290	HCC	13162465	9271065	0.70
HCC320	HCC	13462633	9696240	0.72
HCC341	HCC	11199473	6497400	0.58
HCC628	HCC	15365745	11759122	0.77
HCC324	HCC	12525818	9598812	0.77

HCC46	HCC	13121530	9237102	0.70
HCC73	HCC	13816686	10745247	0.78
HCC398	HCC	13791599	10430016	0.76
HCC489	HCC	11446887	5575387	0.49
HCC195	HCC	11538777	7701351	0.67
HCC234	HCC	11960087	8468478	0.71
HCC626	HCC	13552712	11087605	0.82
HCC647	HCC	12491614	8590321	0.69
pancreatic27	pancreatic cancer	9717087	8019436	0.83
pancreatic68	pancreatic cancer	10457109	8374219	0.80
pancreatic69	pancreatic cancer	10838005	8940883	0.82
pancreatic75	pancreatic cancer	10197772	8452749	0.83
pancreatic9	pancreatic cancer	14601356	11245279	0.77
pancreatic15	pancreatic cancer	15240467	11923009	0.78
pancreatic22	pancreatic cancer	13439343	10356395	0.77
GBM57	GBM	8799132	6455359	0.73
GBM58	GBM	8874810	7253089	0.82
GBM66	GBM	9795211	8073651	0.82
GBM76	GBM	8103209	6165341	0.76
stomach1	gastric cancer	14282633	10365849	0.73
stomach2	gastric cancer	17825012	12938872	0.73
stomach3	gastric cancer	16979690	12894400	0.76
stomach4	gastric cancer	21192604	15675499	0.74
stomach8	gastric cancer	14070772	8321549	0.59
colon13	colorectal cancer	17352371	12517451	0.72
colon16	colorectal cancer	15470656	11210513	0.72
colon17	colorectal cancer	15101557	10590748	0.70
colon19	colorectal cancer	18441208	12503926	0.68
BR5-1 *	breast cancer	17826666	13542700	0.76
BR5-2 *	breast cancer	17746176	13004851	0.73
BR7-1 *	breast cancer	16963664	13160842	0.78
BR7-2 *	breast cancer	15495003	12100951	0.78
BR13	breast cancer	21382473	16015986	0.75
BR14	breast cancer	18668112	14613260	0.78
HBV268	HBV	8730571	5106519	0.58
HBV334	HBV	11838111	7848078	0.66
HBV374	HBV	14896634	11099981	0.75
HBV397	HBV	12127855	8416798	0.69
HBV455	HBV	12796382	9001735	0.70
HBV640	HBV	10040349	6062886	0.60
HBV646	HBV	9665264	5002160	0.52

* Technical duplicate.

§ Unenriched input cfDNA, mixed from samples 35 and 36.

† Unenriched input whole blood gDNA, mixed from samples 35-blood and 36-blood.