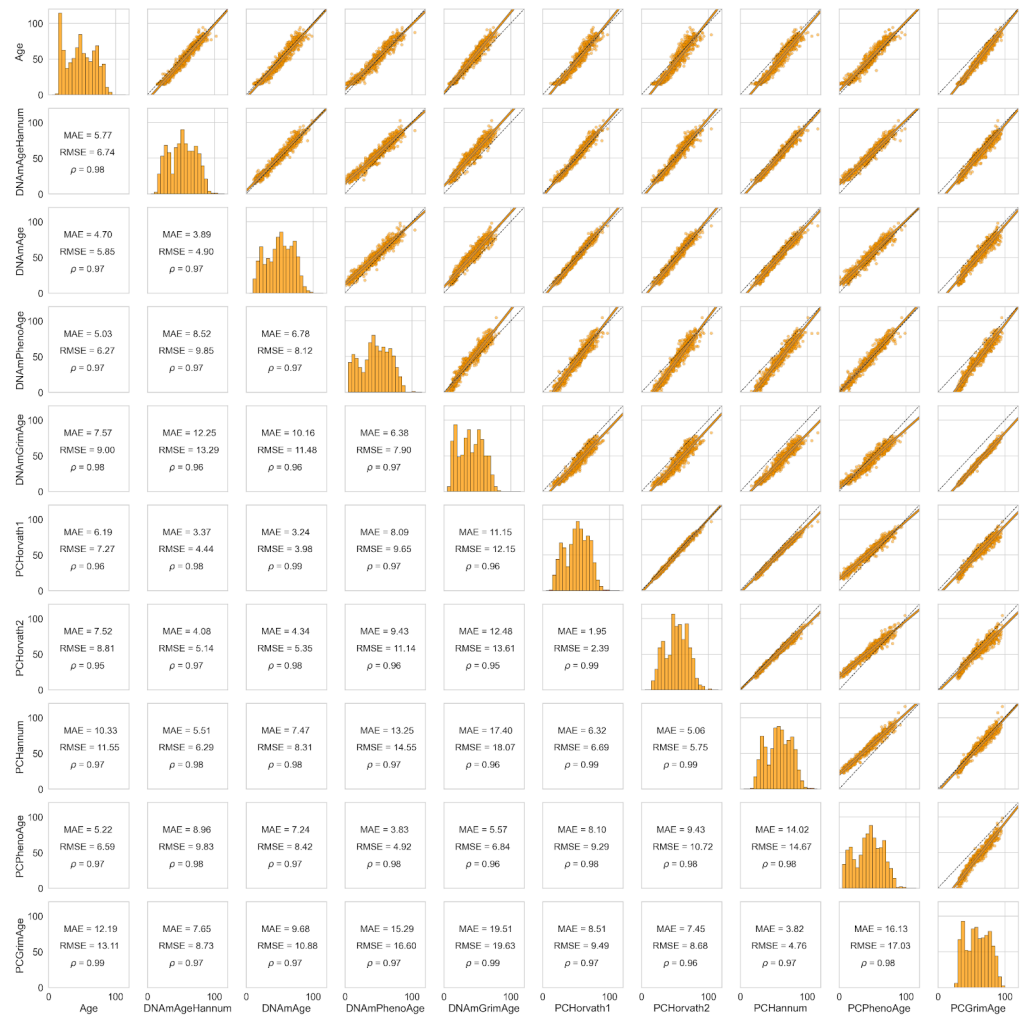
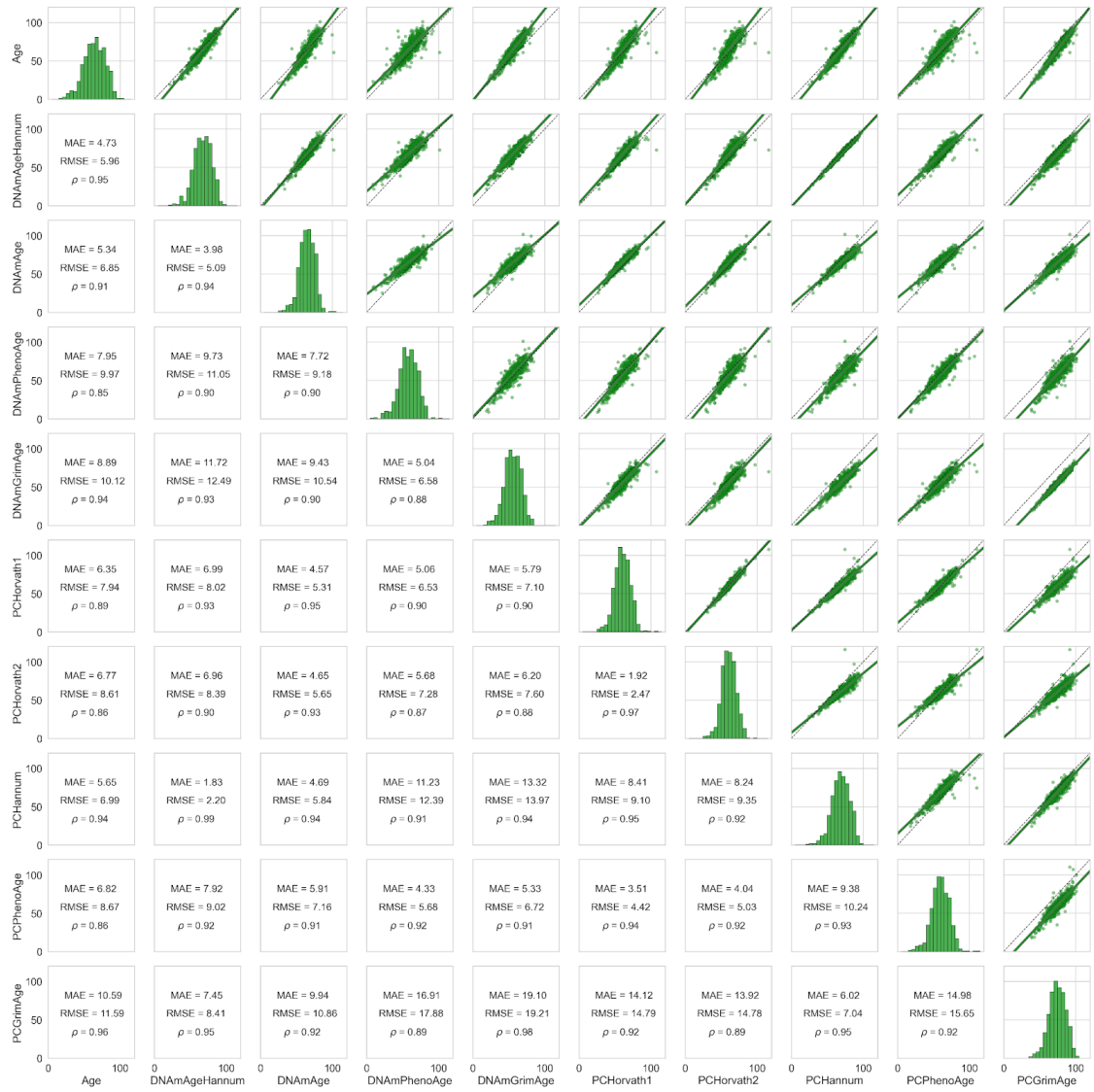


GSE87571



GSE40279



GSE55763



GSE152026

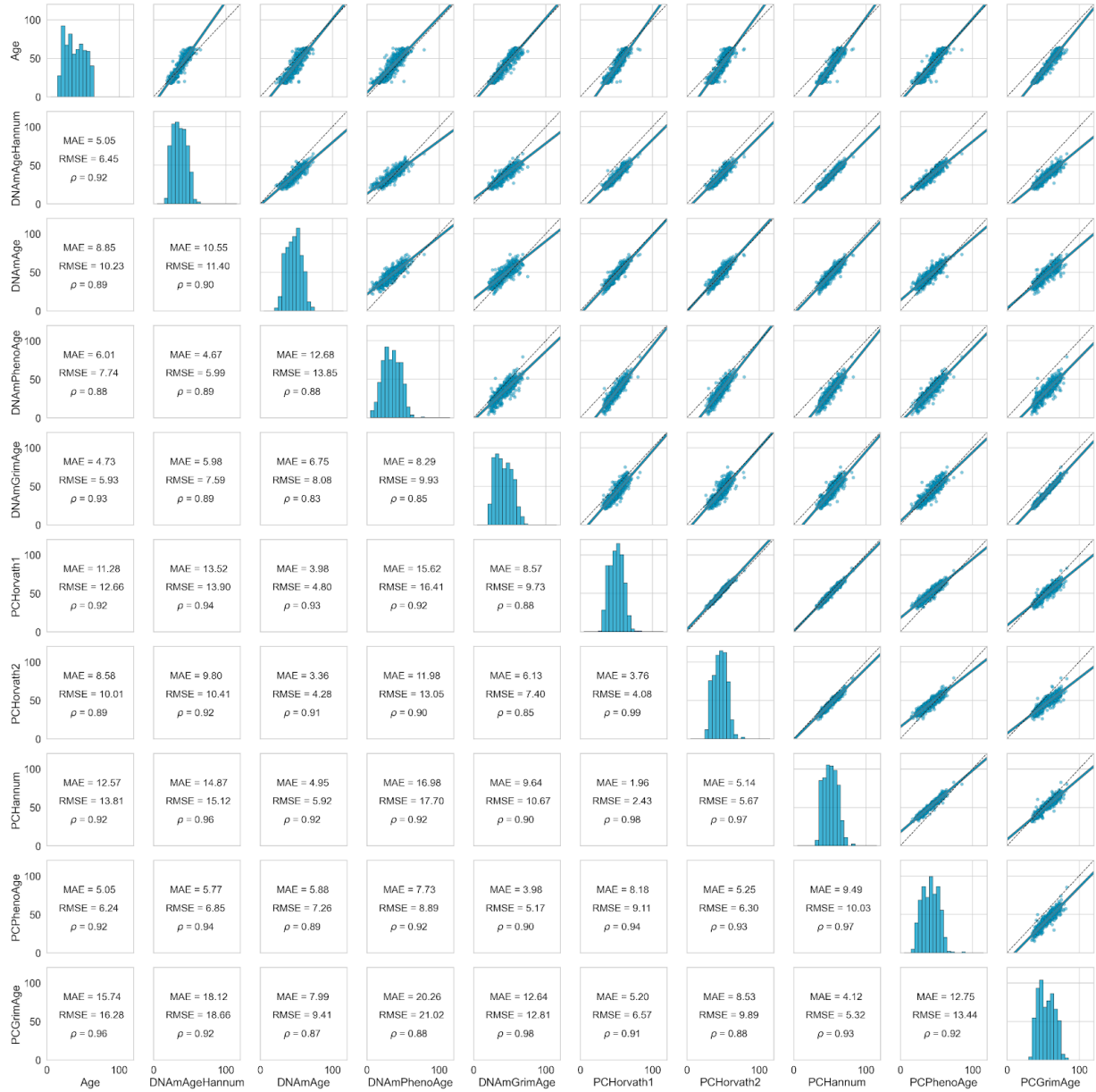


Figure S1. Work efficiency of different epigenetic clocks on considered datasets (GSE87571, GSE40279, GSE55763, and GSE152026). The left side of these figures indicates four types of epigenetic clock from Horvath's calculator—DNAmAgeHannum, DNAmAge, DNAmPhenoAge, and DNAmGrimAge—and its five PC variations. The first column shows error values relative to chronological age (MAE), root-mean-squared error (RMSE), and correlation between different epigenetic clock models.

Table S1. MassArray design details.

Extension Primers (5'-3')	Tm, °C	Amplicon Length (bp)	Forward and Reverse Primers (5'-3')	CpG_ID
TGG GGT GTT TAA GGT	58.7	189	ACG TTG GAT GGT TGT AGT TTG GAG TTT AG	cg07547549
GTT GGA ATG	63		ACG TTG GAT GAT CTT CTA TCC CCT TCC CAC	
GTG GTT TTT GTT TTT	61.6	131	ACG TTG GAT GGG TAT TGA GTG AGG TAT AGG	cg08262002
TTA GAA	60.4		ACG TTG GAT GCC ATT CAC CAT TCA TAC ATT C	
GAT GAA GAG AGG AAT	63	136	ACG TTG GAT GGT TAG GGG TTT GTA GTG TGG	cg01620164
TAT AAG ATT	60.3		ACG TTG GAT GTC ACC AAA ATC CAA CCA AAC	
GTT AGG TTT GTA GTG	60.3	118	ACG TTG GAT GGT TTA GTA ATG AGA TGA GGG	cg11649376
GA	60.3		ACG TTG GAT GAC TCT AAC CAA TTC CAT TCC	
CCC CCG TGT ATA TGT	61.6	124	ACG TTG GAT GTG AGT GTG GAG GAA TGA ATG	cg16008966
GTG TAT GTG	60.4		ACG TTG GAT GCT TTC ATT CTT ACT CTA CCT C	
GTT TTG GGA GTA TAG	56.2	153	ACG TTG GAT GGT TTG TTA GGG TTT TTT TTT	cg06639320
TAG TTA T	61.5		ACG TTG GAT GTA AAC AAA CCC CTA CCA CC	
GTA GTA GTT TTA GIG	56.2	158	ACG TTG GAT GTA TTA GGT TTT ATA TGA AGG	cg14556683
ATA GG	61.7		ACG TTG GAT GCT ACT ACA AAT ACC CCT AAC C	
TTT CGG IGT GGG TTT T	56.2	153	ACG TTG GAT GGT TTG TTA GGG TTT TTT TTT	cg22454769
	61.5		ACG TTG GAT GTA AAC AAA CCC CTA CCA CC	

Table S2. Description of datasets.

Number of Probes After Preprocessing	Number of Subjects	Methylation Data Details	Dataset	Illumina
411,974	729	Raw .idat files, functional normalization	GSE87571	
412,039	656	No raw .idat files, no normalization, adjusting for internal controls by the Illumina's Genome Studio software.	GSE40279	450K
412,340	2639	No raw .idat files, quantile normalization	GSE55763	
739,168	131	Raw .idat files, functional normalization	UNN	EPIC
743,182	519 (Controls)	No raw .idat files, normalization: dasen from wateRmelon	GSE152026	

Table S3. Localization of the studied CpGs.

Relation_to_UCSC_CpG_Island	UCSC_RefGene_Group	UCSC_RefGene_Accession	UCSC_RefGene_Name	Position	CpG_ID
Island	Body (intron); Body (intron)	NM_020708; NM_001134771	SLC12A5; SLC12A5	chr20:44658226	cg07547549
Open_sea	Body (intron); Body (intron)	NM_001290; NM_001130834	LDB2; LDB2	chr4:16575323	cg08262002
N_Shelf	Body (intron)	NM_018086	FIGN	chr2:164590273	cg01620164
S_Shore	Body (intron)	NM_024560	ACSS3	chr12:81473234	cg11649376
Open_sea	-	-	-	chr1:114761794	cg16008966
Island	TSS200; TSS200; 5'UTR; TSS200	NM_001039492; NM_001450; NM_201557; NM_201555	FHL2; FHL2; FHL2; FHL2	chr2:106015740	cg06639320
Island	1stExon; Body (exon)	NM_024794; NM_001142886	EPHX3; EPHX3	chr19:15342983	cg14556683
Island	TSS200; TSS200; 5'UTR; TSS200	NM_001039492; NM_001450; NM_201557; NM_201555	FHL2; FHL2; FHL2; FHL2	chr2:106015768	cg22454769

Table S4. Methylation level (%) of studied CpGs in UNN MassARRAY dataset.

cg22454769	cg14556683	cg06639320	cg16008966	cg11649376	cg01620164	cg08262002	cg07547549	Age	Sex	Sample
24.69	9.12	30.15	57.88	53.36	23.08	44.22	31.19	24.72	m	I21
35.36	5.49	28.72	70.40	61.32	25.49	59.74	40.77	24.73	m	I42
47.57	5.52	45.43	55.34	62.27	24.01	52.15	28.98	24.99	f	I31

33.17	2.09	33.69	64.54	55.21	25.83	51.43	28.36	25.35	f	I55
45.76	6.35	41.98	60.86	64.00	25.13	62.45	35.31	26.01	m	I33
39.41	4.17	35.96	53.42	43.30	24.73	46.66	41.32	29.25	m	I11
39.78	8.88	34.87	58.43	59.47	25.68	57.98	26.45	30.9	f	I28
35.66	1.97	38.82	58.67	54.24	22.98	46.76	57.30	32.24	m	I34
36.80	0	39.47	55.77	51.03	28.90	41.22	33.69	32.78	f	I2
32.38	10.57	41.99	56.85	51.61	23.37	47.02	47.49	32.85	m	I14
42.29	1.11	16.23	64.42	64.10	39.85	72.12	19.93	33.99	f	I27
44.86	5.32	31.95	67.61	59.84	47.70	63.68	30.77	36.84	f	I19
26.74	0	40.29	56.72	54.81	22.74	44.31	48.97	38.54	f	I45
40.57	3.80	25.05	65.29	68.96	15.88	81.16	24.06	38.87	m	I1
41.05	2.01	41.09	61.64	50.76	24.01	46.74	49.51	41.54	f	I29
39.69	1.31	48.02	61.66	60.12	24.94	48.89	42.82	41.79	m	I4
41.33	1.34	39.20	60.03	59.19	47.29	59.65	23.64	42.07	m	I7
50.70	10.44	30.29	57.05	56.84	6.16	65.32	25.31	42.45	m	I32
42.04	5.88	39.87	63.96	54.78	25.79	49.68	30.08	42.89	m	I62
52.66	1.31	50.94	61.94	57.65	26.53	54.80	35.43	47.6	f	I20
42.20	6.86	48.37	55.83	55.74	25.30	44.96	36.42	48.3	f	I48
39.92	3.12	32.20	61.30	52.08	25.85	57.58	9.13	49.74	m	I47
49.83	0	41.63	69.47	56.82	25.95	80.11	32.12	50.18	f	I63
47.80	0	39.67	62.92	50.56	20.87	45.34	42.09	50.26	f	I54
37.46	4.96	64.28	59.23	54.69	31.97	45.02	57.14	53.53	f	I5
57.52	0	17.35	14.68	49.23	11.87	72.70	40.44	53.83	m	I6
30.12	2.59	54.96	58.03	52.09	27.02	55.08	45.98	55.49	m	I38
56.36	6.50	56.10	51.57	43.99	18.90	37.16	30.28	55.52	f	I16
34.54	30.54	55.11	55.73	61.79	34.86	34.44	53.12	55.58	f	I39
46.51	6.06	49.53	64.71	54.10	26.90	51.90	44.83	55.68	f	I44
49.97	7.75	47.98	55.79	49.17	25.41	43.25	59.70	58.9	m	I17
52.78	15.41	31.51	63.24	50.70	26.69	59.41	21.02	60.51	f	I61
51.49	8.64	48.65	53.75	52.56	24.21	51.50	47.18	61.64	f	I53
50.91	10.46	31.99	68.50	55.27	35.95	71.39	30.10	64.03	f	I56
55.08	0	49.47	69.11	59.54	33.99	62.83	33.01	64.49	f	I51
53.76	6.02	53.98	56.10	53.50	26.60	53.02	37.13	66.85	m	I69
51.69	10.62	57.70	62.89	59.54	26.74	52.18	39.07	67.12	f	I52
57.81	0	51.81	86.97	52.29	13.65	67.67	38.19	68.09	m	I67
47.80	4.96	51.39	58.22	48.04	26.16	46.38	35.80	69.52	f	I73
55.55	6.51	43.15	51.66	47.37	31.44	60.02	27.25	69.99	f	I59
41.42	0.49	36.04	34.32	35.20	23.98	35.28	43.04	70.68	m	I25
39.13	7.78	41.02	55.81	53.45	45.46	50.66	31.54	72.26	f	I71
57.95	3.13	67.38	60.24	53.28	24.48	44.56	40.98	74.35	f	I100
59.45	5.02	55.20	41.77	54.21	24.21	40.05	61.24	77.11	m	I76
42.41	0	41.32	35.14	32.67	22.21	36.59	29.01	78.08	f	I43
71.60	10.16	69.08	41.83	56.75	17.05	43.54	40.66	79.71	m	I94
47.39	11.27	58.30	46.95	46.61	27.72	35.18	32.38	82.15	f	I96
49.57	10.79	57.13	57.25	53.13	24.46	43.96	42.13	82.87	m	I92
54.91	31.05	62.44	50.13	46.45	38.56	30.80	42.64	83.53	f	I93
48.05	12.55	60.07	47.03	47.43	29.48	32.69	40.31	83.64	f	I95