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Table S2. Correlation coefficients between the levels of DNA epigenetic modifications in urine - **inflammatory bowel disease group (IBD)**. Statistically significant correlations are indicated in red.

	5-hmdU	5-mdC	5-hmCyt	5-fCyt	5-hmdC	8-oxodG	5-hmUra
5-hmdU	R=1.0000 N=38 p= ---	R=0.2532 N=21 p=0.268	R=0.6967 N=38 p<0.001	R=0.2508 N=35 p=0.146	R=0.5771 N=36 p<0.001	R=0.5006 N=38 p=0.001	R=0.4016 N=38 p=0.012
5-mdC	R=0.2532 N=21 p=0.268	R=1.0000 N=21 p= ---	R=0.1854 N=21 p=0.421	R=-0.0463 N=19 p=0.851	R=0.7745 N=21 p<0.001	R=0.1038 N=21 p=0.654	R=0.4011 N=21 p=0.072
5-hmCyt	R=0.6967 N=38 p<0.001	R=0.1854 N=21 p=0.421	R=1.0000 N=38 p= ---	R=0.3181 N=35 p=0.063	R=0.5124 N=36 p=0.001	R=0.4022 N=38 p=0.012	R=0.4596 N=38 p=0.004
5-fCyt	R=0.2508 N=35 p=0.146	R=-0.0463 N=19 p=0.851	R=0.3181 N=35 p=0.063	R=1.0000 N=35 p= ---	R=0.1442 N=34 p=0.416	R=0.0987 N=35 p=0.573	R=0.1337 N=35 p=0.444
5-hmdC	R=0.5771 N=36 p<0.001	R=0.7745 N=21 p<0.001	R=0.5124 N=36 p=0.001	R=0.1442 N=34 p=0.416	R=1.0000 N=36 p= ---	R=0.3146 N=36 p=0.062	R=0.5621 N=36 p<0.001
8-oxodG	R=0.5006 N=38 p=0.001	R=0.1038 N=21 p=0.654	R=0.4022 N=38 p=0.012	R=0.0987 N=35 p=0.573	R=0.3146 N=36 p=0.062	R=1.0000 N=38 p= ---	R=0.3713 N=38 p=0.022
5-hmUra	R=0.4016 N=38 p=0.012	R=0.4011 N=21 p=0.072	R=0.4596 N=38 p=0.004	R=0.1337 N=35 p=0.444	R=0.5621 N=36 p<0.001	R=0.3713 N=38 p=0.022	R=1.0000 N=38 p= ---

Table S3. Correlation coefficients between the levels of DNA epigenetic modifications in urine - **colorectal cancer patients**. Statistically significant correlations are indicated in red.

	5-hmdU	5-mdC	5-hmCyt	5-fCyt	5-hmdC	8-oxodG	5-hmUra
5-hmdU	R=1.0000 N=123 p= ---	R=0.3306 N=71 p=0.005	R=0.6651 N=119 p<0.001	R=0.1920 N=111 p=0.043	R=0.4375 N=114 p<0.001	R=0.1005 N=119 p=0.277	R=0.4055 N=118 p<0.001
5-mdC	R=0.3306 N=71 p=0.005	R=1.0000 N=72 p= ---	R=0.2763 N=68 p=0.023	R=0.1098 N=67 p=0.376	R=0.7105 N=68 p<0.001	R=-0.0005 N=68 p=0.996	R=0.3167 N=71 p=0.007
5-hmCyt	R=0.6651 N=119 p<0.001	R=0.2763 N=68 p=0.023	R=1.0000 N=119 p= ---	R=0.3846 N=107 p<0.001	R=0.3674 N=113 p<0.001	R=0.3657 N=118 p<0.001	R=0.4715 N=115 p<0.001
5-fCyt	R=0.1920 N=111 p=0.043	R=0.1098 N=67 p=0.376	R=0.3846 N=107 p=0.001	R=1.0000 N=112 p= ---	R=0.0195 N=102 p=0.845	R=0.2264 N=107 p=0.019	R=0.1676 N=108 p=0.083
5-hmdC	R=0.4375 N=114 p<0.001	R=0.7105 N=68 p<0.001	R=0.3674 N=113 p<0.001	R=0.0195 N=102 p=0.845	R=1.0000 N=114 p= ---	R=0.1042 N=113 p=0.272	R=0.3511 N=110 p<0.001
8-oxodG	R=0.1005 N=119 p=0.277	R=-0.0005 N=68 p=0.996	R=0.3657 N=118 p<0.001	R=0.2264 N=107 p=0.019	R=0.1042 N=113 p=0.272	R=1.0000 N=119 p= ---	R=0.2026 N=115 p=0.030
5-hmUra	R=0.4055 N=118 p<0.001	R=0.3167 N=71 p=0.007	R=0.4715 N=115 p<0.001	R=0.1676 N=108 p=0.083	R=0.3511 N=110 p<0.001	R=0.2026 N=115 p=0.030	R=1.0000 N=122 p= ---

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Table S4. Correlation coefficients between the levels of DNA epigenetic modifications in urine - **precancerous patients (adenoma)**. Statistically significant correlations are indicated in red.

	5-hmdU	5-mdC	5-hmCyt	5-fCyt	5-hmdC	8-oxodG	5-hmUra
5-hmdU	R=1.0000 N=44 p= ---	R=0.3000 N=31 p=0.101	<b>R=0.6702</b> <b>N=44</b> <b>p&lt;0.001</b>	R=0.2160 N=41 p=0.175	<b>R=0.4703</b> <b>N=41</b> <b>p=0.002</b>	R=0.2699 N=44 p=0.076	<b>R=0.3790</b> <b>N=44</b> <b>p=0.011</b>
5-mdC	R=0.3000 N=31 p=0.101	R=1.0000 N=31 p= ---	R=0.0368 N=31 p=0.844	R=0.1185 N=29 p=0.540	<b>R=0.8273</b> <b>N=31</b> <b>p&lt;0.001</b>	R=0.1121 N=31 p=0.548	<b>R=0.3614</b> <b>N=31</b> <b>p=0.046</b>
5-hmCyt	R=0.6702 N=44 p<0.001	R=0.0368 N=31 p=0.844	R=1.0000 N=44 p= ---	<b>R=0.3514</b> <b>N=41</b> <b>p=0.024</b>	<b>R=0.4026</b> <b>N=41</b> <b>p=0.009</b>	<b>R=0.4082</b> <b>N=44</b> <b>p=0.006</b>	<b>R=0.4632</b> <b>N=44</b> <b>p=0.002</b>
5-fCyt	R=0.2160 N=41 p=0.175	R=0.1185 N=29 p=0.540	<b>R=0.3514</b> <b>N=41</b> <b>p=0.024</b>	R=1.0000 N=41 p= ---	R=0.1747 N=38 p=0.294	R=0.2329 N=41 p=0.143	<b>R=0.3513</b> <b>N=41</b> <b>p=0.024</b>
5-hmdC	<b>R=0.4703</b> <b>N=41</b> <b>p=0.002</b>	<b>R=0.8273</b> <b>N=31</b> <b>p&lt;0.001</b>	<b>R=0.4026</b> <b>N=41</b> <b>p=0.009</b>	R=0.1747 N=38 p=0.294	R=1.0000 N=41 p= ---	R=0.2986 N=41 p=0.058	<b>R=0.3595</b> <b>N=41</b> <b>p=0.021</b>
8-oxodG	R=0.2699 N=44 p=0.076	R=0.1121 N=31 p=0.548	<b>R=0.4082</b> <b>N=44</b> <b>p=0.006</b>	R=0.2329 N=41 p=0.143	R=0.2986 N=41 p=0.058	R=1.0000 N=44 p= ---	<b>R=0.3835</b> <b>N=44</b> <b>p=0.010</b>
5-hmUra	<b>R=0.3790</b> <b>N=44</b> <b>p=0.011</b>	<b>R=0.3614</b> <b>N=31</b> <b>p=0.046</b>	<b>R=0.4632</b> <b>N=44</b> <b>p=0.002</b>	<b>R=0.3513</b> <b>N=41</b> <b>p=0.024</b>	<b>R=0.3595</b> <b>N=41</b> <b>p=0.021</b>	<b>R=0.3835</b> <b>N=44</b> <b>p=0.010</b>	R=1.0000 N=44 p= ---

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Table S5. Correlation coefficients between the levels of DNA epigenetic modifications in urine for all analyzed cases. Statistically significant correlations are indicated in red.

	5-hmdU	5-mdC	5-hmCyt	5-fCyt	5-hmdC	8-oxodG	5-hmUra
5-hmdU	R=1.0000 N=248 p= ---	R =0.2568 N=156 p=0.001	R=0.6616 N=243 p<0.001	R=0.2044 N=230 p=0.002	R=0.4254 N=234 p<0.001	R=0.2232 N=244 p<0.001	R=0.3612 N=243 p<0.001
5-mdC	R=0.2568 N=156 p=0.001	R =1.0000 N=157 p= ---	R=0.1502 N=152 p=0.065	R=0.0191 N=148 p=0.818	R=0.7331 N=153 p<0.001	R=0.0596 N=153 p=0.464	R=0.2881 N=156 p<0.001
5-hmCyt	R=0.6616 N=243 p<0.001	R=0.1502 N=152 p=0.065	R=1.0000 N=243 p= ---	R=0.3299 N=225 p<0.001	R=0.3713 N=232 p<0.001	R=0.3834 N=242 p<0.001	R=0.4180 N=239 p<0.001
5-fCyt	R=0.2044 N=230 p=0.002	R=0.0191 N=148 p=0.818	R=0.3299 N=225 p<0.001	R=1.0000 N=231 p= ---	R=0.0517 N=217 p=0.449	R=0.1871 N=226 p=0.005	R=0.1925 N=227 p=0.004
5-hmdC	R=0.4254 N=234 p<0.001	R=0.7331 N=153 p<0.001	R=0.3713 N=232 p<0.001	R=0.0517 N=217 p=0.449	R=1.0000 N=234 p= ---	R=0.1605 N=233 p=0.014	R=0.3280 N=230 p<0.001
8-oxodG	R=0.2232 N=244 p<0.001	R=0.0596 N=153 p=0.464	R=0.3834 N=242 p<0.001	R=0.1871 N=226 p=0.005	R=0.1605 N=233 p=0.014	R=1.0000 N=244 p= ---	R=0.2748 N=240 p<0.001
5-hmUra	R=0.3612 N=243 p<0.001	R=0.2881 N=156 p<0.001	R=0.4180 N=239 p<0.001	R=0.1925 N=227 p=0.004	R=0.3280 N=230 p<0.001	R=0.2748 N=240 p<0.001	R=1.0000 N=247 p= ---

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Table S6. Transition patterns and specific detector settings for all compounds analyzed by 2D UPLC–MS/MS in urine.

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compound name		ionization mode	nominal molecular mass (Da)	pseudo-molecular ion formulation	nominal parent ion (Da)	nominal daughter ion	capillary (kV)	cone (V)	collision (eV)
5-hydroxymethylcytosine	quantifier	UniSpray+	141	[M+H] <sup>+</sup>	142	81	1.3	40	18
	qualifier	UniSpray+	141	[M+H] <sup>+</sup>	142	124	1.3	40	12
[D <sub>3</sub> ]-5-hydroxymethylcytosine	quantifier	UniSpray+	144	[(M+3)+H] <sup>+</sup>	145	84	1.3	40	18
	qualifier	UniSpray+	144	[(M+3)+H] <sup>+</sup>	145	127	1.3	40	12
5-hydroxymethyl-2'-deoxycytidine	quantifier	UniSpray+	257	[M+H] <sup>+</sup>	258	124	1.3	35	22
	qualifier	UniSpray+	257	[M+H] <sup>+</sup>	258	142	1.3	35	10
[D <sub>3</sub> ]-5-hydroxymethyl-2'-deoxycytidine	quantifier	UniSpray+	260	[(M+3)+H] <sup>+</sup>	261	127	1.3	35	22
	qualifier	UniSpray+	260	[(M+3)+H] <sup>+</sup>	261	145	1.3	35	10
5-carboxylcytosine	quantifier	UniSpray-	155	[M-H] <sup>-</sup>	154	67	1.3	60	12
	qualifier	UniSpray-	155	[M-H] <sup>-</sup>	154	110	1.3	60	12
[ <sup>13</sup> C <sub>10</sub> , <sup>15</sup> N <sub>2</sub> ]-5-carboxylcytosine	quantifier	UniSpray-	162	[(M+7)-H] <sup>-</sup>	161	71	1.3	60	12
	qualifier	UniSpray-	162	[(M+7)-H] <sup>-</sup>	161	116	1.3	60	12
8-oxo-2'-deoxyguanosine	quantifier	UniSpray+	283	[M+H] <sup>+</sup>	284	168	1.3	30	18
	qualifier	UniSpray+	283	[M+H] <sup>+</sup>	284	140	1.3	30	18
[ <sup>15</sup> N <sub>5</sub> ]-8-oxo-2'-deoxyguanosine	quantifier	UniSpray+	288	(M+5)+H <sup>+</sup>	289	173	1.3	20	15
	qualifier	UniSpray+	288	(M+5)+H <sup>+</sup>	289	145	1.3	20	15
5-formylcytosine	quantifier	UniSpray+	139	[M-H] <sup>-</sup>	140	97	1.3	40	15
	qualifier	UniSpray+	139	[M-H] <sup>-</sup>	140	70	1.3	40	15
[ <sup>13</sup> C <sub>10</sub> , <sup>15</sup> N <sub>2</sub> ]-5-formylcytosine	quantifier	UniSpray+	146	[(M+7)-H] <sup>-</sup>	147	102	1.3	40	15
	qualifier	UniSpray+	146	[(M+7)-H] <sup>-</sup>	147	73	1.3	40	15
5-methyl-2'-deoxycytidine	quantifier	UniSpray+	241	[M-H] <sup>-</sup>	242	126	1.3	30	12
	qualifier	UniSpray+	241	[M-H] <sup>-</sup>	242	224	1.3	30	12
[ <sup>13</sup> C <sub>10</sub> , <sup>15</sup> N <sub>2</sub> ]-5-methyl-2'-deoxycytidine	quantifier	UniSpray+	253	[(M+12)-H] <sup>-</sup>	254	133	1.3	30	12
	qualifier	UniSpray+	241	[(M+12)-H] <sup>-</sup>	254	236	1.3	30	12

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