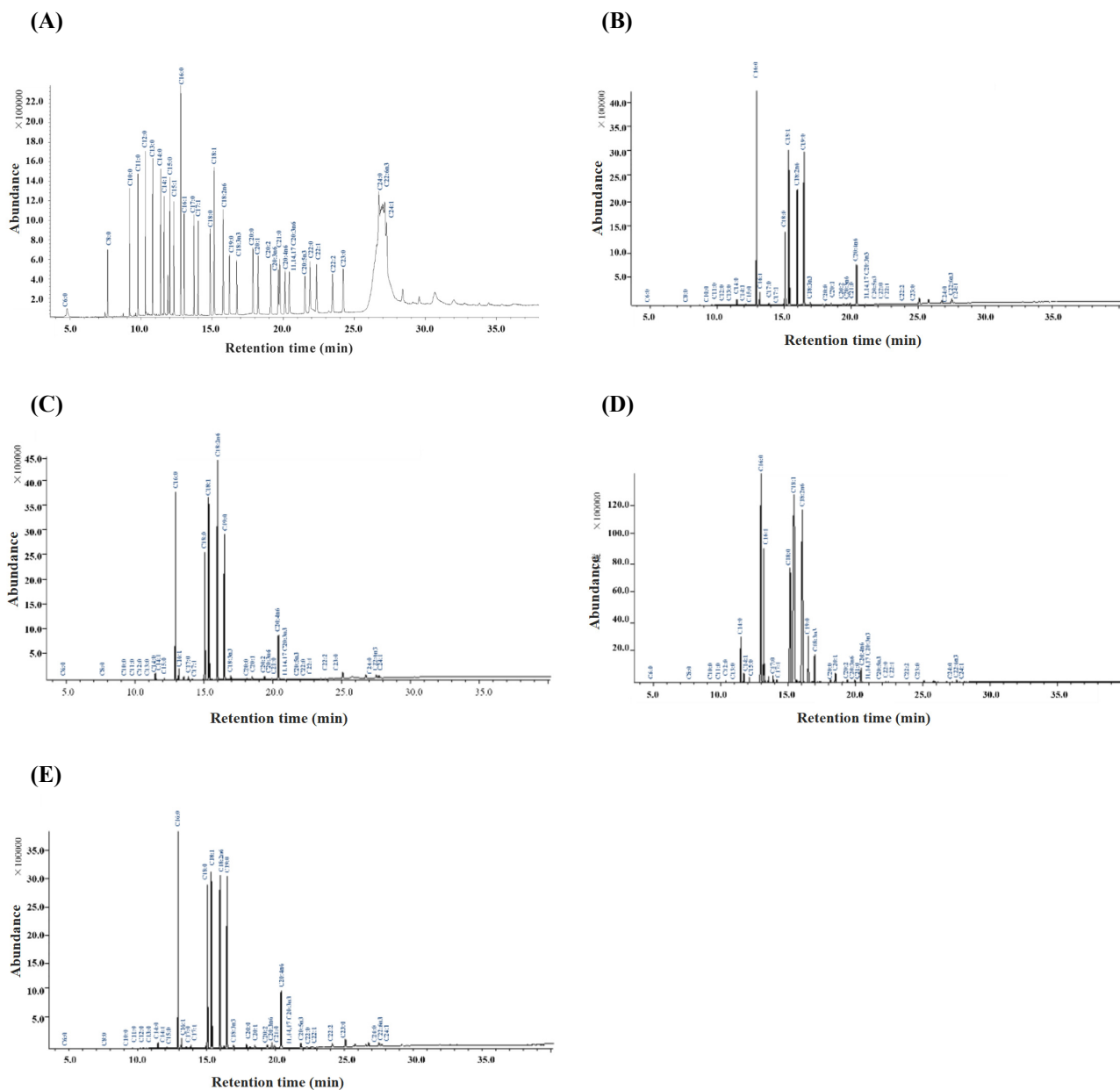
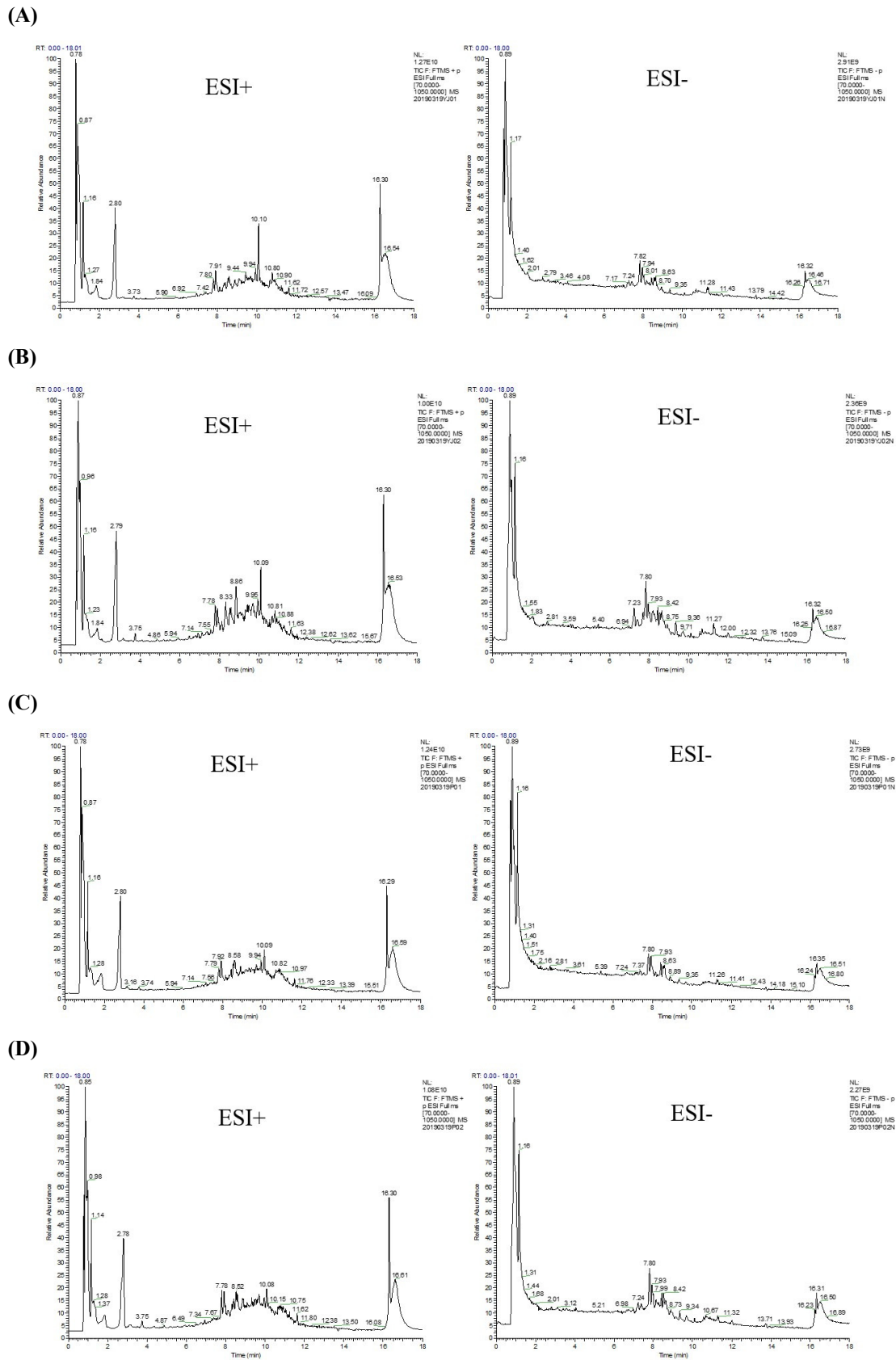


## Supplementary Materials



**Fig. S1.** Total ion chromatograms of 37 fatty acid standards (A) and fatty acids in YBC and PC (B, C, D, and E) determined by GC-MS. (B) Breast meat of YBC, (C) Leg meat of YBC, (D) Breast meat of PC, (E) Leg meat of PC. C19:0 was internal standard. YBC, Yanjin blackbone chickens; PC, Piao chickens; GC-MS, gas chromatography-mass spectrometry.



**Fig. S2.** Total ion current chromatograms of small molecular metabolites in chicken samples determined by LC-MS in positive ion mode (ESI+) and negative ion mode (ESI-). (A) Breast meat of YBC, (B) Leg meat of YBC, (C) Breast meat of PC, (D) Leg meat of PC. ESI, electrospray ionization; LC-MS, liquid chromatography-mass spectrometry; YBC, Yanjin blackbone chickens; PC, Piao chickens.

**Table S1. Tentative identification of small molecular metabolites of chicken samples in positive ion mode**

NO.	Compound name	NO.	Compound name	NO.	Compound name
1	L-Tryptophan	37	Linoleyl carnitine	73	Inosinemonphosphate
2	1-Methylhistidine	38	Oleamide	74	Uracil
3	DL-2-Aminooctanoic acid	39	Oleic acid	75	Deoxycytidine
4	DL-Pipecolic acid	40	Glycerophosphocholine	76	Malic acid
5	L-2-Aminoethyl seryl phosphate	41	L-Octanoylcarnitine	77	Urocanic acid
6	L-Arginine	42	L-Palmitoylcarnitine	78	Creatine
7	L-Glutamate	43	LysoPC (15:0/0:0)	79	Phenylacetic acid
8	L-Glutamine	44	all-trans-Retinoic acid	80	Uric acid
9	L-Histidine	45	Sphingosine 1-phosphate	81	Benzoic acid
10	L-Isoleucine	46	Tauroursodeoxycholic acid	82	Taurine
11	L-Phenylalanine	47	Tetracosahexaenoic acid	83	Homovanillic acid
12	L-Tyrosine	48	Tetradecanoylcarnitine	84	Niacinamide
13	Methionine sulfoxide	49	Taurocholic acid	85	Acetylcholine
14	N6-Acetyl-L-lysine	50	S-Acetyldihydroipoamide	86	Alpha-CEHC
15	N-Acetyl-L-histidine	51	Butyrylcarnitine	87	Phosphocholine
16	gamma-Glutamylcysteine	52	Stearoylcarnitine	88	D-erythro-C18-Dihydro-D-sphingosine
17	Creatinine	53	Linoleic acid	89	Sphingosine
18	Betaine	54	LysoPC (14:0/0:0)	90	Stearamide
19	L-Proline	55	LysoPC (16:0/0:0)	91	Stearoylethanolamide
20	L-Serine	56	LysoPE (0:0/16:0)	92	2-Phenylacetamide
21	L-Threonine	57	Nutriacholic acid	93	Hypoxanthine
22	Pyroglutamic acid	58	$\alpha$ -Linolenic acid	94	L-Carnitine
23	gamma-Aminobutyric acid	59	Decanoylcarnitine	95	Nicotinic acid
24	$\beta$ -Alanine	60	Arachidonic acid	96	Pantothenic acid
25	Glutathione	61	Vitamin A	97	Phenylpyruvic acid
26	N-(4-amino-1-oxobutyl)-L-Histidine	62	alpha-Tocopherol	98	Phytosphingosine
27	L-Alanyl-L-proline	63	9-OxoODE	99	Proline betaine
28	N-Glycyl-L-leucine	64	L-Acetylcarnitine	100	Pyridoxamine
29	L-Isoleucyl-L-proline	65	Deoxyadenosine	101	Xanthine
30	Anserine	66	Inosine	102	1-Phenylethylamine
31	L-Prolyl-L-phenylalanine	67	5'-Methylthioadenosine	103	Histamine
32	L-Glutaminyl-L-tryptophan	68	Adenine	104	Hydrouracil
33	Palmitic amide	69	Adenosine	105	Choline
34	13Z-Docosenamide	70	Adenosinemonophosphate	106	Phosphohydroxypyruvic acid
35	Docosanamide	71	Guanine		
36	Linoleamide	72	Guanosine		

**Table S2. Tentative identification of small molecular metabolites of chicken samples in negative ion mode**

NO.	Compound name	NO.	Compound name	NO.	Compound name
1	N-Acetylhistidine	24	Tauroursodeoxycholic acid	47	Arachidonic acid
2	$\gamma$ -Glutamylglutamic acid	25	Thromboxane B3	48	2'-deoxy-5'-Uridylic acid
3	Phenylbutyrylglutamine	26	cis-9-Palmitoleic acid	49	5'-Adenosine monophosphate
4	O-Phospho-4-hydroxy-L-threonine	27	Taurocholic acid	50	Inosine
5	L-2-Aminoethyl seryl phosphate	28	Oleic acid	51	Guanosine
6	(2S)-2-amino-5-oxo-5-phosphonooxypentanoic acid	29	Undecanedioic acid	52	5'-Inosinemonphosphate
7	L-Tryptophan	30	Cortisol	53	Uridine
8	L-Glutaminy-L-tryptophan	31	LPA (0:0/16:0)	54	Deoxycytidine
9	N-L-alpha-Glutamyl-L-phenylalanine	32	LPA (P-16:0e/0:0)	55	Octadecanedioic acid
10	Glutathione	33	LysoPE (0:0/14:0)	56	Uric acid
11	L-Prolyl-L-phenylalanine	34	LysoPE (0:0/16:0)	57	Creatine
12	Anserine	35	Deoxycholic acid	58	3-Indolebutyric acid
13	L-Isoleucyl-L-proline	36	Linoleic acid	59	Indole-3-propionic acid
14	L-Prolyl-L-hydroxyproline	37	LysoPC (14:0/0:0)	60	Phenylglyoxylic acid
15	L-alpha-Glutamyl-L-alanine	38	LysoPC (15:0/0:0)	61	Ethanethioic acid
16	Tetrahydrocortisol	39	Palmitic acid	62	Threonic acid
17	Prostaglandin E3	40	Dodecanedioic acid	63	Biotin
18	Tetrahydrocorticosterone	41	Myristoleic acid	64	D-Glucose 6-phosphate
19	Cholic acid	42	Stearic acid	65	Pantothenic acid
20	11Z-Eicosenoic acid	43	8R-HpODE	66	Sedoheptulose
21	Prostaglandin E1	44	9-OxoODE	67	Indolelactic acid
22	Prostaglandin E2	45	9-HETE		
23	Sphingosine 1-phosphate	46	Adrenic acid		