

Supplementary information

Table S1 Differential metabolites in the renal medulla of SS rats between NSD and HSD group, based on GC-MS

data

Differential metabolites	Pvalue	VIP	Fold change	Regulation (HSD/NSD)
Lactic acid	7.84196E-05	1.78166	2.675804687	Up
L-alanine	0.002393016	1.50119	1.600411262	Up
Pantothenic acid	0.003529512	1.45973	1.630491864	Up
Palmitic acid	0.008087408	1.40411	0.153124423	Down
O-phosphocolamine	0.008165094	1.36013	0.500236864	Down
β -glycerolphosphate	0.009604531	1.34193	0.39882166	Down
Creatinine	0.01156596	1.32204	1.479052411	Up
D-mannitol	0.012734466	1.47027	3.296369503	Up
L-mimosine	0.013807795	1.32104	0.13311718	Down
Pyruvic acid	0.022865062	1.21203	1.35777101	Up
Stearic acid	0.023610512	1.29781	0.108995992	Down
L-threonine	0.033617862	1.14777	1.426720766	Up
Fumaric acid	0.039809284	1.11628	1.632593174	Up
Tagatose	0.040443863	1.11282	1.431984179	Up
Inosine	0.041050096	1.11248	1.372051435	Up
Malic acid	0.03742213	1.1382	0.68756735	Down
Aspartic acid	0.043669903	1.17445	0.685381572	Down
N-acetyl-D-mannosamine	0.049350877	1.2676	0.38663045	Down
Pyrophosphate	0.049706139	1.18908	0.102566586	Down

Table S2 Differential metabolites in the renal medulla of SS rats between HSDAO and HSD group, based on GC-

MS data

Differential metabolites	Pvalue	VIP	Fold change	Regulation (HSDAO/HSD)
L-lysine	6.18E-07	1.99605	7.60975094	Up
L-cysteine	3.73E-05	1.8646	1.87129539	Up
N-methylalanine	0.000113	1.86123	2.62661394	Up
Lactic acid	0.000218	1.74205	0.2532885	Down
Glycine	0.000229	1.71285	2.03587833	Up
Xylitol	0.002352	1.5094	1.57270727	Up
Phosphoenolpyruvic acid	0.004799	1.77675	3.03092453	Up
Gluconic acid	0.004951	1.47703	1.60986358	Up
β -alanine	0.008392	1.41965	2.79003913	Up
Xanthine	0.017522	1.28565	1.70433501	Up
O-phosphocolamine	0.019223	1.34735	3.06116468	Up
L-threonine	0.020985	1.29424	0.78336557	Down
Guanosine	0.02626	1.19166	1.39048428	Up
D-glucose	0.027755	1.18285	1.76285486	Up
Methyl-beta-D-galactopyranoside	0.035964	1.29032	1.49760561	Up
Hypotaurine	0.03698	1.24312	1.63904857	Up
Dehydroascorbic acid	0.039033	1.22736	1.45253559	Up
Ribitol	0.039052	1.11535	1.49333617	Up
β -glycerolphosphate	0.044209	1.14411	1.46221186	Up

Table S3 Differential metabolites in the renal cortex of SS rats between NSD and HSD group, based on GC-MS data

Differential metabolites	Pvalue	VIP	Fold change	Regulation (HSD/NSD)
O-phosphocolamine	5.12E-05	1.86034	0.621914966	Down
Glyceric acid	9.21E-05	1.82619	0.608212141	Down
Ribose	0.000143	1.81246	2.111589065	Up
Xylitol	0.001313	1.63113	0.558200939	Down
Lactic acid	0.001995	1.8536	1.734437013	Up
Tartronic acid	0.007049	1.52645	0.414373222	Down
D-glucose-6-phosphate	0.007731	1.46734	1.687970149	Up
2-hydroxypyridine	0.009343	1.42266	0.704925466	Down
L-alanine	0.009705	1.39765	2.042742282	Up
Trans-4-hydroxy-L-proline	0.012254	1.37328	0.794105833	Down
Glycine	0.017031	1.32045	0.830400859	Down
Malonic acid	0.018197	1.33412	0.716487311	Down
Creatinine	0.02035	1.28457	1.529034203	Up
N-methylalanine	0.022619	1.30021	6.516020556	Up
Citric acid	0.02688	1.29268	0.647322167	Down
β -alanine	0.030479	1.21725	0.679260082	Down
D-malic acid	0.035718	1.27135	0.692231918	Down
D-mannitol	0.036694	1.17985	1.30710166	Up
Phosphoenolpyruvic acid	0.041745	1.16125	0.595219406	Down
3-phosphoglyceric acid	0.046328	1.17897	0.671242687	Down
Hypotaurine	0.04678	1.1472	0.845168066	Down

Table S4 Differential metabolites in renal cortex of SS rats between HSAOC and HSD group, based on GC-MS data

Differential metabolites	Pvalue	VIP	Fold change	Regulation (HSDAO/HSD)
Hypotaurine	0.001108	1.8246	0.65753523	Down
Citric acid	0.003404	1.64901	0.58653707	Down
L-leucine	0.012916	1.49765	1.23875483	Up
β -glycerolphosphate	0.016181	1.49322	0.82602353	Down
Glyceric acid	0.017606	1.52979	0.74524163	Down
Palatinose	0.024878	1.351	0.62047656	Down
Tagatose	0.029556	1.36716	0.55303673	Down
2-hydroxypyridine	0.030657	1.4998	1.30965891	Up
Uracil	0.034004	1.31577	1.26614788	Up
Inosine	0.037462	1.26787	0.84367928	Down
β -alanine	0.037887	1.42176	0.71277273	Down
Adenosine-5-monophosphate	0.038936	1.42829	0.51777747	Down
Trans-4-hydroxy-L-proline	0.040231	1.36657	0.78269179	Down
Phosphoenolpyruvic acid	0.040495	1.27297	1.39915291	Up
DL-isoleucine	0.041704	1.38099	1.24644228	Up
L-serine	0.043095	1.34601	1.22327249	Up
Phenylalanine	0.04557	1.34047	1.44686009	Up
Glycerol 1-phosphate	0.048496	1.30244	0.87784986	Down