

Supplementary Materials

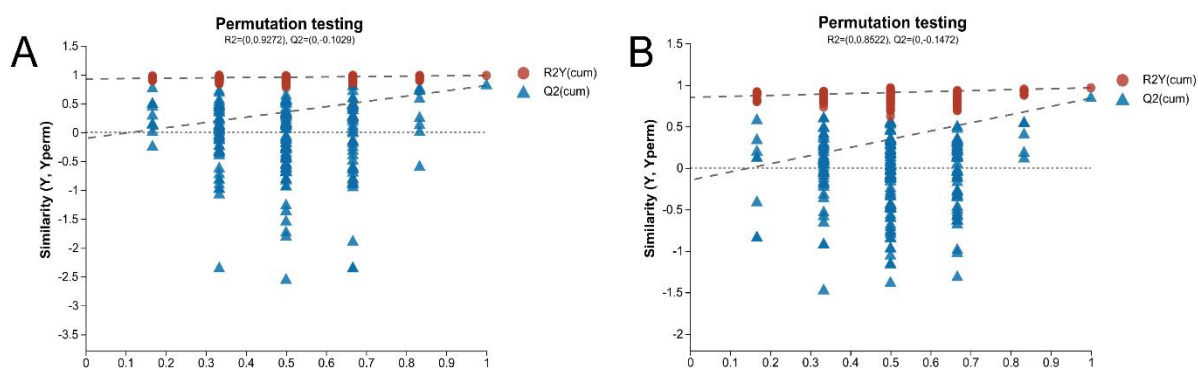


Fig.S1 Permutation test results in positive and negative ion modes. Permutation test in positive (A) and negative (B) ion modes of the NC vs. MC groups.

Table S1. 104 differential metabolites between the MC group and the NC group.

Ion modes	Metabolite	ID	Formula	MC/NC
Negative	Neohesperidin dihydrochalcone	HMDB0030542	C ₂₈ H ₃₆ O ₁₅	↑*
	Phenyllactic acid	C01479	C ₉ H ₁₀ O ₃	↑**
	Malic acid	C00149	C ₄ H ₆ O ₅	↑*
	Asticolorin A	HMDB0030133	C ₃₃ H ₃₀ O ₇	↑*
	Diazinon	C14324	C ₁₂ H ₂₁ N ₂ O ₃ PS	↑*
	(2R)-1-O-beta-D-Galactopyranosylglycerol	HMDB0038664	C ₉ H ₁₈ O ₈	↑*
	Hesperetin 7-(2,6-dirhamnosylglucoside)	HMDB0040372	C ₃₄ H ₄₄ O ₁₉	↑*
	L-Tyrosine	C00082	C ₉ H ₁₁ NO ₃	↓*
	Aminofurantoin	HMDB0060589	C ₈ H ₈ N ₄ O ₃	↑**
	6-(2-Hydroxyethoxy)-6-oxohexanoic acid	HMDB0061681	C ₈ H ₁₄ O ₅	↑*
	N-acetyl-L-2-aminoadipate(2-)	HMDB0062715	C ₈ H ₁₃ NO ₅	↑*
	Erinapyrone A	HMDB0041426	C ₇ H ₁₀ O ₃	↑**
	1H-Indole-3-carboxaldehyde	C08493	C ₉ H ₇ NO	↑***
	Mupirocin	C11758	C ₂₆ H ₄₄ O ₉	↓**
	Phaseolic acid	C10483	C ₁₂ H ₂₂ O ₆	↑***
	Talaromycin A	HMDB0030143	C ₁₂ H ₂₂ O ₄	↑*
	5-Hydroxyvalproic acid	C16650	C ₈ H ₁₆ O ₃	↑***
	(±)-3-Hydroxynonanoic acid	HMDB0031513	C ₉ H ₁₈ O ₃	↑*
	Jasmonic acid	C08491	C ₁₂ H ₁₈ O ₃	↑*
	2-Hydroxy-2,6,6-trimethylcyclohexanone	HMDB0037023	C ₉ H ₁₆ O ₂	↑*
	Dihydrophaseic acid	C15971	C ₁₅ H ₂₂ O ₅	↑*
	Riesling acetal	HMDB0037562	C ₁₃ H ₂₂ O ₃	↓*
	MG(20:5(5Z,8Z,11Z,14Z,17Z)/0:0/0:0)	HMDB0011580	C ₂₃ H ₃₆ O ₄	↑*
	6-Hydroxypentadecanedioic acid	HMDB0031885	C ₁₅ H ₂₈ O ₅	↓***
	13(S)-HpODE	C04717	C ₁₈ H ₃₂ O ₄	↑**
	5-Tetradecenoic acid	HMDB0000499	C ₁₄ H ₂₆ O ₂	↑**
	Cyclomammecin	HMDB0030711	C ₂₂ H ₂₈ O ₆	↓*
	MG(0:0/20:3(11Z,14Z,17Z)/0:0)	HMDB0011545	C ₂₃ H ₄₀ O ₄	↑*
	Coprocholic acid	HMDB0000601	C ₂₇ H ₄₆ O ₅	↑*
	3-Hydroxy-1-phenyl-1-octadecanone	HMDB0035680	C ₂₄ H ₄₀ O ₂	↑*
	9'-Carboxy-gamma-chromanol	HMDB0012868	C ₂₃ H ₃₆ O ₄	↑**
	13-Hydroxy-9-methoxy-10-oxo-11-octadecenoic acid	HMDB0040901	C ₁₉ H ₃₄ O ₅	↑*
	LysoPC(22:1(13Z))	C04230	C ₃₀ H ₆₀ NO ₇ P	↑*
	Sorbitan laurate	HMDB0029885	C ₁₈ H ₃₄ O ₆	↑*
	Oryzalexin E	C21561	C ₂₀ H ₃₂ O ₂	↑***

	3-[2-(3,7-dimethylocta-2,6-dien-1-yl)-3,4-dihydroxyphenyl]propanoic acid	HMDB0134951	C ₁₉ H ₂₆ O ₄	↑*
	Dihydrojasmonic acid	HMDB0033601	C ₁₂ H ₂₀ O ₃	↑***
	Jasmolone	HMDB0030039	C ₁₁ H ₁₆ O ₂	↑**
	(5alpha,8beta,9beta)-5,9-Epoxy-3,6-megastigma dien-8-ol	HMDB0034672	C ₁₃ H ₂₀ O ₂	↓*
	Yangonin	C09980	C ₁₅ H ₁₄ O ₄	↑*
	Asparaginy-Tyrosine	HMDB0028743	C ₁₃ H ₁₇ N ₃ O ₅	↑***
	Nookatone	HMDB0013687	C ₁₅ H ₂₂ O	↑*
	15d PGD2	HMDB0060046	C ₂₀ H ₃₀ O ₄	↑**
	Eremopetasidione	HMDB0040778	C ₁₄ H ₂₀ O ₃	↑*
	(2E,4E)-2,7-Dimethyl-2,4-octadienedioic acid	HMDB0034099	C ₁₀ H ₁₄ O ₄	↑*
	(E)-10-Hydroxy-8-decenoic acid	HMDB0039533	C ₁₀ H ₁₈ O ₃	↑***
	5-(2-Furanyl)-1,2,3,4,5,6-hexahydro-7H-cyclopenta[b]pyridin-7-one	HMDB0039656	C ₁₂ H ₁₃ NO ₂	↑**
	1-(4-hydroxyphenyl)ethane-1,2-diol	HMDB0135785	C ₈ H ₁₀ O ₃	↑***
	Hexyl glucoside	HMDB0031688	C ₁₂ H ₂₄ O ₆	↑**
	Beta-Thujaplicin	C09904	C ₁₀ H ₁₂ O ₂	↑*
	5-Hydroxyindoleacetic acid	C05635	C ₁₀ H ₉ NO ₃	↑*
	(1R,2R,3S,1'R)-Nepetalinic acid	HMDB0034971	C ₁₀ H ₁₆ O ₄	↑*
	3-Hydroxysebacic acid	HMDB0000350	C ₁₀ H ₁₈ O ₅	↑***
	(R)-2,7-Dihydroxy-2H-1,4-benzoxazin-3(4H)-one	HMDB0038054	C ₈ H ₇ NO ₄	↑***
	Cis-4-Hydroxycyclohexylacetic acid	HMDB0000451	C ₈ H ₁₄ O ₃	↑***
	3-(3,5-dimethoxyphenyl)propanoic acid	HMDB0127493	C ₁₁ H ₁₄ O ₄	↑**
	Cis- and trans-2-Isopropyl-4-methyl-1,3-dioxolane	HMDB0032204	C ₇ H ₁₄ O ₂	↑**
	Nonate	HMDB0011717	C ₉ H ₁₆ O ₄	↑***
	4-Hydroxycyclohexylcarboxylic acid	HMDB0001988	C ₇ H ₁₂ O ₃	↑**
	Methylsuccinic acid	C08645	C ₅ H ₈ O ₄	↑*
	Valyl-Hydroxyproline	HMDB0029128	C ₁₀ H ₁₈ N ₂ O ₄	↑*
	Artocarbene	HMDB0031744	C ₁₉ H ₁₈ O ₄	↑*
	[(3-phenyloxiran-2-yl)methoxy]sulfonic acid	HMDB0135311	C ₉ H ₁₀ O ₅ S	↓*
	Eujambolin	HMDB0037970	C ₂₄ H ₂₄ O ₁₃	↑*
	N-acetylaspartate	C01042	C ₆ H ₉ NO ₅	↑*
	23-Hydroxyphysalolactone	HMDB0031388	C ₂₈ H ₃₉ ClO ₉	↑*
	Maltotetraose	C02052	C ₂₄ H ₄₂ O ₂₁	↑*
	Adenosine monophosphate	C01367	C ₁₀ H ₁₄ N ₅ O ₇ P	↑*
	Temocapril	HMDB0061720	C ₂₃ H ₂₈ N ₂ O ₅ S ₂	↑*
	Succinic acid	C00042	C ₄ H ₆ O ₄	↑**
Positive	Sphingosine	C00319	C ₁₈ H ₃₇ NO ₂	↓*

Galactosylglycerol	C05401	C ₉ H ₁₈ O ₈	↑*
2,3-dihydrobenzofuran	HMDB0013815	C ₈ H ₈ O	↑***
6-Dimethylaminopurine	HMDB0000473	C ₇ H ₉ N ₅	↑*
OXYQUINOLINE	C19434	C ₉ H ₇ NO	↑*
Palmitoyl Ethanolamide	C16512	C ₁₈ H ₃₇ NO ₂	↓*
Glycylproline	HMDB0000721	C ₇ H ₁₂ N ₂ O ₃	↑*
Tyrosyl-Threonine	HMDB0029115	C ₁₃ H ₁₈ N ₂ O ₅	↑**
N-Succinyl-L,L-2,6-diaminopimelate	C04421	C ₁₁ H ₁₈ N ₂ O ₇	↑*
L-alpha-Amino-1H-pyrrole-1-hexanoic acid	HMDB0040551	C ₁₀ H ₁₆ N ₂ O ₂	↑*
2-hydroxyphenylpropionylglycine	HMDB0094723	C ₁₁ H ₁₃ NO ₄	↑**
Cucurbit acid	C08482	C ₁₂ H ₂₀ O ₃	↑*
Glucosylsphingosine	C03108	C ₂₄ H ₄₇ NO ₇	↓**
Gamma-Tocotrienol	C14155	C ₂₈ H ₄₂ O ₂	↓*
4-Hydroxy-3-(16-methylheptadecyl)-2H-pyran-2-one	HMDB0032093	C ₂₃ H ₄₀ O ₃	↓*
8-Dotriacontenoic acid	HMDB0029801	C ₃₂ H ₆₂ O ₂	↑*
3beta-20(29)-Lupene-3,27-diol	HMDB0035033	C ₃₀ H ₅₀ O ₂	↓*
Methyl 2-(10-heptadecenyl)-6-hydroxybenzoate	HMDB0038523	C ₂₅ H ₄₀ O ₃	↑*
3-ketosphingosine	C06121	C ₁₈ H ₃₅ NO ₂	↓*
5a-Cholestane-3a,7a,12a,25-tetrol	HMDB0000520	C ₂₇ H ₄₈ O ₄	↑*
13-HDoHE	HMDB0060043	C ₂₂ H ₃₄ O	↓*
TetraHCA	HMDB0062534	C ₂₇ H ₄₆ O ₆	↓*
3-Hydroxy-p-mentha-1,8-dien-7-al	HMDB0041584	C ₁₀ H ₁₄ O ₂	↑**
Cibaric acid	HMDB0038580	C ₁₈ H ₂₈ O ₅	↑*
Tetrahydrocortisone	C05470	C ₂₁ H ₃₂ O ₅	↑*
Lumichrome	C01727	C ₁₂ H ₁₀ N ₄ O ₂	↑***
D-Biotin	C00120	C ₁₀ H ₁₆ N ₂ O ₃ S	↑*
Lotaustralin	C08334	C ₁₁ H ₁₉ NO ₆	↑*
1-Carbapen-2-em-3-carboxylic acid	C06669	C ₇ H ₇ NO ₃	↑*
N-(1-Deoxy-1-fructosyl)valine	HMDB0037844	C ₁₁ H ₂₁ NO ₇	↑***
Suberylglycine	HMDB0000953	C ₁₀ H ₁₇ NO ₅	↑*
Arginyl-Histidine	HMDB0028711	C ₁₂ H ₂₁ N ₇ O ₃	↑*
(E)-10-Hydroxy-2-decene-4,6-diyonic acid	HMDB0038965	C ₁₀ H ₁₀ O ₃	↑*
Cytidine monophosphate N-acetylneuraminic acid	C00128	C ₂₀ H ₃₁ N ₄ O ₁₆ P	↑*

The ↑ and ↓ in this table indicate up-regulation and down-regulation of metabolites. * p < 0.05, ** p < 0.01, *** p < 0.001, * represents significant difference between NC and MC groups;

Table S2. Metabolites altered by LIP, LIPA, and HIPA groups among the 104 differential metabolites between MC and NC groups

Ion modes	Metabolite	ID	Formula	superclass	MC/NC	LIP/MC	LIPA/MC	HIPA/MC
Negative	Neohesperidin dihydrochalcone	HMDB030542	C ₂₈ H ₃₆ O ₁₅	Phenylpropanoids and polyketides	↑*	↑+++	↑###	↑^^^
	Asticolorin A	HMDB030133	C ₃₃ H ₃₀ O ₇	Organoheterocyclic compounds	↑*	↑	↑###	↑^^
	Diazinon	C14324	C ₁₂ H ₂₁ N ₂ O ₃ PS	Organic acids and derivatives	↑*	↓++	↓###	↓^^^
	(2R)-1-O-beta-D-Galactopyranosylglycerol	HMDB038664	C ₉ H ₁₈ O ₈	Lipids and lipid-like molecules	↑*	↑	↑###	↑^^^
	Hesperetin 7-(2,6-dirhamnosylglucoside)	HMDB040372	C ₃₄ H ₄₄ O ₁₉	Phenylpropanoids and polyketides	↑*	↑+++	↑###	↑^^^
	Aminofurantoin	HMDB060589	C ₈ H ₈ N ₄ O ₃	Organoheterocyclic compounds	↑**	↓+++	↓	↓
	6-(2-Hydroxyethoxy)-6-oxohexanoic acid	HMDB061681	C ₈ H ₁₄ O ₅	Lipids and lipid-like molecules	↑*	↓+++	↓	↓
	N-acetyl-L-2-aminoadipate(2-)	HMDB062715	C ₈ H ₁₃ NO ₅	Organic acids and derivatives	↑*	↓+++	↓###	↓^^^
	Erinapyrone A	HMDB041426	C ₇ H ₁₀ O ₃	Organoheterocyclic compounds	↑**	↓+++	↓#	↓^
	1H-Indole-3-carboxaldehyde	C08493	C ₉ H ₇ NO	Organoheterocyclic compounds	↑***	↓++	↓###	↓^^^
	Mupirocin	C11758	C ₂₆ H ₄₄ O ₉	Lipids and lipid-like molecules	↓**	↑++	↑	↑
	Phaseolic acid	C10483	C ₁₂ H ₂₂ O ₆	Organic acids and derivatives	↑***	↓+++	↓###	↓^^^
	5-Hydroxyvalproic acid	C16650	C ₈ H ₁₆ O ₃	Lipids and lipid-like molecules	↑***	↓+++	↓##	↓^^
	(±)-3-Hydroxynonanoic acid	HMDB031513	C ₉ H ₁₈ O ₃	Organic acids and derivatives	↑*	↓+++	↓#	↓^^
	Jasmonic acid	C08491	C ₁₂ H ₁₈ O ₃	Lipids and lipid-like molecules	↑*	↓	↓###	↓^^
	2-Hydroxy-2,6,6-trimethylcyclohexanone	HMDB037023	C ₉ H ₁₆ O ₂	Organic oxygen compounds	↑*	↓+++	↓###	↓^^^
	Dihydrophaseic acid	C15971	C ₁₅ H ₂₂ O ₅	Lipids and lipid-like molecules	↑*	↓+++	↓###	↓^^^
	13(S)-HpODE	C04717	C ₁₈ H ₃₂ O ₄	\	↑**	↓+++	↓###	↓^^^
	Cyclomammecin	HMDB030711	C ₂₂ H ₂₈ O ₆	Phenylpropanoids and polyketides	↓*	↑+++	↑###	↑^^^

MG(0:0/20:3(11Z,14Z,17Z)/0:0)	HMDB011545	C ₂₃ H ₄₀ O ₄	Lipids and lipid-like molecules	↑*	↓	↓ [#]	↓ [^]
Coprocholic acid	HMDB000601	C ₂₇ H ₄₆ O ₅	Lipids and lipid-like molecules	↑*	↓ ⁺⁺⁺	↓ ^{###}	↓ ^{^^^}
3-Hydroxy-1-phenyl-1-octadecanone	HMDB0035680	C ₂₄ H ₄₀ O ₂	Lipids and lipid-like molecules	↑*	↓ ⁺⁺⁺	↓ ^{###}	↓ ^{^^^}
9'-Carboxy-gamma-chromanol	HMDB0012868	C ₂₃ H ₃₆ O ₄	Organoheterocyclic compounds	↑ ^{**}	↑	↑ ^{###}	↑ ^{^^}
13-Hydroxy-9-methoxy-10-oxo-11-octadecenoic acid	HMDB0040901	C ₁₉ H ₃₄ O ₅	Lipids and lipid-like molecules	↑*	↓ ⁺⁺⁺	↓ [#]	↓
Oryzalexin E	C021561	C ₂₀ H ₃₂ O ₂	Benzenoids	↑ ^{***}	↑	↑ ^{###}	↑ ^{^^}
Dihydrojasmonic acid	HMDB0033601	C ₁₂ H ₂₀ O ₃	Lipids and lipid-like molecules	↑ ^{***}	↓ ⁺⁺⁺	↓ ^{##}	↓ ^{^^}
Jasmolone	HMDB0030039	C ₁₁ H ₁₆ O ₂	Organic oxygen compounds	↑ ^{**}	↓	↓	↓ [^]
Yangonin	C09980	C ₁₅ H ₁₄ O ₄	Phenylpropanoids and polyketides	↑*	↓ ⁺⁺	↓ ^{##}	↓ ^{^^}
Eremopetasidione	HMDB0040778	C ₁₄ H ₂₀ O ₃	Lipids and lipid-like molecules	↑*	↓ ⁺⁺	↓ ^{##}	↓ ^{^^}
(E)-10-Hydroxy-8-decenoic acid	HMDB0039533	C ₁₀ H ₁₈ O ₃	Organic acids and derivatives	↑ ^{***}	↓	↓ [#]	↓
(2E,4E)-2,7-Dimethyl-2,4-octadienedioic acid	HMDB0034099	C ₁₀ H ₁₄ O ₄	Lipids and lipid-like molecules	↑*	↓ ⁺	↓	↓ [^]
5-(2-Furanyl)-1,2,3,4,5,6-hexahydro-7H-cyclopenta[b]pyridin-7-one	HMDB0039656	C ₁₂ H ₁₃ NO ₂	Organoheterocyclic compounds	↑ ^{**}	↓ ⁺⁺⁺	↓ ^{###}	↓ ^{^^^}
Hexyl glucoside	HMDB0031688	C ₁₂ H ₂₄ O ₆	Lipids and lipid-like molecules	↑ ^{**}	↓ ⁺	↓ [#]	↓ ^{^^}
Beta-Thujaplicin	C09904	C ₁₀ H ₁₂ O ₂	Hydrocarbon derivatives	↑*	↓ ⁺⁺⁺	↓ ^{###}	↓ ^{^^^}
5-Hydroxyindoleacetic acid	C05635	C ₁₀ H ₉ NO ₃	Organoheterocyclic compounds	↑*	↓ ⁺⁺⁺	↓ ^{###}	↓ ^{^^^}
(1R,2R,3S,1'R)-Nepetalinic acid	HMDB0034971	C ₁₀ H ₁₆ O ₄	Lipids and lipid-like molecules	↑*	↓ ⁺⁺	↓	↓ [^]
3-Hydroxysebacic acid	HMDB0000350	C ₁₀ H ₁₈ O ₅	Organic acids and derivatives	↑ ^{***}	↓ ⁺⁺⁺	↓ [#]	↓ [^]
(R)-2,7-Dihydroxy-2H-1,4-benzoxazin-3(4H)-one	HMDB0038054	C ₈ H ₇ NO ₄	Organoheterocyclic compounds, Phenylpropanoids and polyketides	↑ ^{***}	↓ ⁺⁺⁺	↓ ^{###}	↓ ^{^^^}
3-(3,5-dimethoxyphenyl)propanoic acid	HMDB0031144	C ₁₁ H ₁₄ O ₄	Phenylpropanoids	↑ ^{**}	↓ ⁺⁺⁺	↓	↓

	henyl)propanoic acid	127493		and polyketides				
	Cis- and trans-2-Isopropyl-4-methyl-1,3-dioxolane	HMDB0032204	C ₇ H ₁₄ O ₂	Organoheterocyclic compounds	↑**	↓ ⁺⁺	↓	↓^^
	Nonate	HMDB0011717	C ₉ H ₁₆ O ₄	Lipids and lipid-like molecules	↑***	↓ ⁺⁺⁺	↓ ^{##}	↓^
	4-Hydroxycyclohexylcarboxylic acid	HMDB0001988	C ₇ H ₁₂ O ₃	Organic oxygen compounds	↑**	↓ ⁺⁺⁺	↓ ^{###}	↓^^^
	Methylsuccinic acid	C08645	C ₅ H ₈ O ₄	Lipids and lipid-like molecules	↑*	↓ ⁺⁺⁺	↓ ^{##}	↓^^^
	Valyl-Hydroxyproline	HMDB0029128	C ₁₀ H ₁₈ N ₂ O ₄	Organic acids and derivatives	↑*	↓ ⁺	↓ ^{###}	↓^
	[(3-phenyloxiran-2-yl)methoxy]sulfonic acid	HMDB00135311	C ₉ H ₁₀ O ₅ S	Benzenoids	↓*	↓ ⁺⁺⁺	↓ [#]	↓
	Eujambolin	HMDB0037970	C ₂₄ H ₂₄ O ₁₃	Phenylpropanoids and polyketides	↑*	↓ ⁺⁺⁺	↓ ^{##}	↓^^
	N-acetylaspartate	C01042	C ₆ H ₉ NO ₅	\	↑*	↓ ⁺⁺⁺	↓	↓^^
	Maltotetraose	C02052	C ₂₄ H ₄₂ O ₂₁	Organic oxygen compounds	↑*	↑ ⁺⁺⁺	↑ ^{###}	↑^^^
	Adenosine monophosphate	C01367	C ₁₀ H ₁₄ N ₅ O ₇ P	Nucleosides, nucleotides, and analogues	↑*	↓ ⁺⁺⁺	↓ ^{###}	↓
	Temocapril	HMDB0061720	C ₂₃ H ₂₈ N ₂ O ₅ S ₂	Organic acids and derivatives	↑*	↓ ⁺⁺⁺	↓ ^{###}	↓^^^
Positive	Sphingosine	C00319	C ₁₈ H ₃₇ NO ₂	Organic nitrogen compounds	↓*	↑ ⁺⁺⁺	↑ ^{###}	↑
	Galactosylglycerol	C05401	C ₉ H ₁₈ O ₈	Lipids and lipid-like molecules	↑*	↑	↑ ^{###}	↑^^^
	6-Dimethylaminopurine	HMDB0000473	C ₇ H ₉ N ₅	Organoheterocyclic compounds	↑*	↓ ⁺⁺⁺	↓	↓^^
	OXYQUINOLINE	C19434	C ₉ H ₇ NO	\	↑*	↓ ⁺	↓ ^{###}	↓^^
	Palmitoyl Ethanolamide	C16512	C ₁₈ H ₃₇ NO ₂	\	↓*	↓ ⁺⁺⁺	↓	↓
	Glycylproline	HMDB0000721	C ₇ H ₁₂ N ₂ O ₃	Organic acids and derivatives	↑*	↓ ⁺⁺	↓ [#]	↓^^
	Tyrosyl-Threonine	HMDB0029115	C ₁₃ H ₁₈ N ₂ O ₅	Organic acids and derivatives	↑**	↓ ⁺⁺	↓ ^{##}	↓^^
	N-Succinyl-L,L-2,6-diaminopimelate	C04421	C ₁₁ H ₁₈ N ₂ O ₇	Organic acids and derivatives	↑*	↓ ⁺⁺	↓	↓^^^
	L-alpha-Amino-1H-pyrrole-1-hexan	HMDB0040551	C ₁₀ H ₁₆ N ₂ O ₂	Organic acids and derivatives	↑*	↓ ⁺⁺	↓ ^{##}	↓^^^

oic acid

2-hydroxyphenylpropionylglycine	HMDB0094723	C ₁₁ H ₁₃ NO ₄	Organic acids and derivatives	↑**	↓	↓##	↓^^
8-Dotriacontenoic acid	HMDB0029801	C ₃₂ H ₆₂ O ₂	Lipids and lipid-like molecules	↑*	↓++	↓##	↓^^
3-ketosphingosine	C06121	C ₁₈ H ₃₅ NO ₂	\	↓*	↑+++	↑##	↑^^^
5a-Cholestane-3a,7a,12a,25-tetrol	HMDB0000520	C ₂₇ H ₄₈ O ₄	Lipids and lipid-like molecules	↑*	↓+++	↓##	↓
TetraHCA	HMDB0062534	C ₂₇ H ₄₆ O ₆	Lipids and lipid-like molecules	↓*	↓+++	↓###	↓^^^
3-Hydroxy-p-mentha-1,8-dien-7-al	HMDB0041584	C ₁₀ H ₁₄ O ₂	Lipids and lipid-like molecules	↑**	↓++	↓##	↓^^
Lumichrome	C01727	C ₁₂ H ₁₀ N ₄ O ₂	\	↑***	↓+++	↓#	↓
Lotaustralin	C08334	C ₁₁ H ₁₉ NO ₆	Organic oxygen compounds	↑*	↓+++	↓###	↓^^^
Suberylglycine	HMDB0000953	C ₁₀ H ₁₇ NO ₅	Organic acids and derivatives	↑*	↓	↓#	↓^
Arginyl-Histidine	HMDB0028711	C ₁₂ H ₂₁ N ₇ O ₃	Organic acids and derivatives	↑*	↓+++	↓###	↓^^^
(E)-10-Hydroxy-2-decene-4,6-dienoic acid	HMDB0038965	C ₁₀ H ₁₀ O ₃	Lipids and lipid-like molecules	↑*	↓	↓##	↓

The ↑ and ↓ in this table indicate up-regulation and down-regulation of metabolites. * p < 0.05, ** p < 0.01, *** p < 0.001 * represents significant difference between NC and MC groups; +p < 0.05, ++p < 0.01, +++p < 0.001, + represents significant difference between LIP and MC groups; # p < 0.05, ## p < 0.01, ### p < 0.001, # represents significant difference between LIPA and MC groups; ^ p < 0.05, ^^ p < 0.01, ^^ p < 0.001, ^ represents significant difference between HIPA and MC groups.