

Supplementary Materials

Metabolic Profile of C-Prenyl Coumarins Using Mass Spectrometry-Based Metabolomics

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Figure S1. Metabolic profiling of MH, ISM and MER *in vitro*. (A) Scores plot of OPLS-DA and S-plot analysis from control and MH incubated with MLM. (B) Scores plot of OPLS-DA and S-plot analysis from control and ISM incubated with MLM. (C) Scores plot of OPLS-DA and S-plot analysis from control and MER incubated with MLM.

Figure S2. Role of MH, ISM and MER in RAW 264.7. (A) Cell viability test of MH, ISM and MER in RAW 264.7. (B) Correlation of NO production and inflammatory cytokines transcription level.

Figure S3. Metabolic map of MH and ISM. (A) Metabolic map of MH. (B) Metabolic map of ISM.

Fig S1

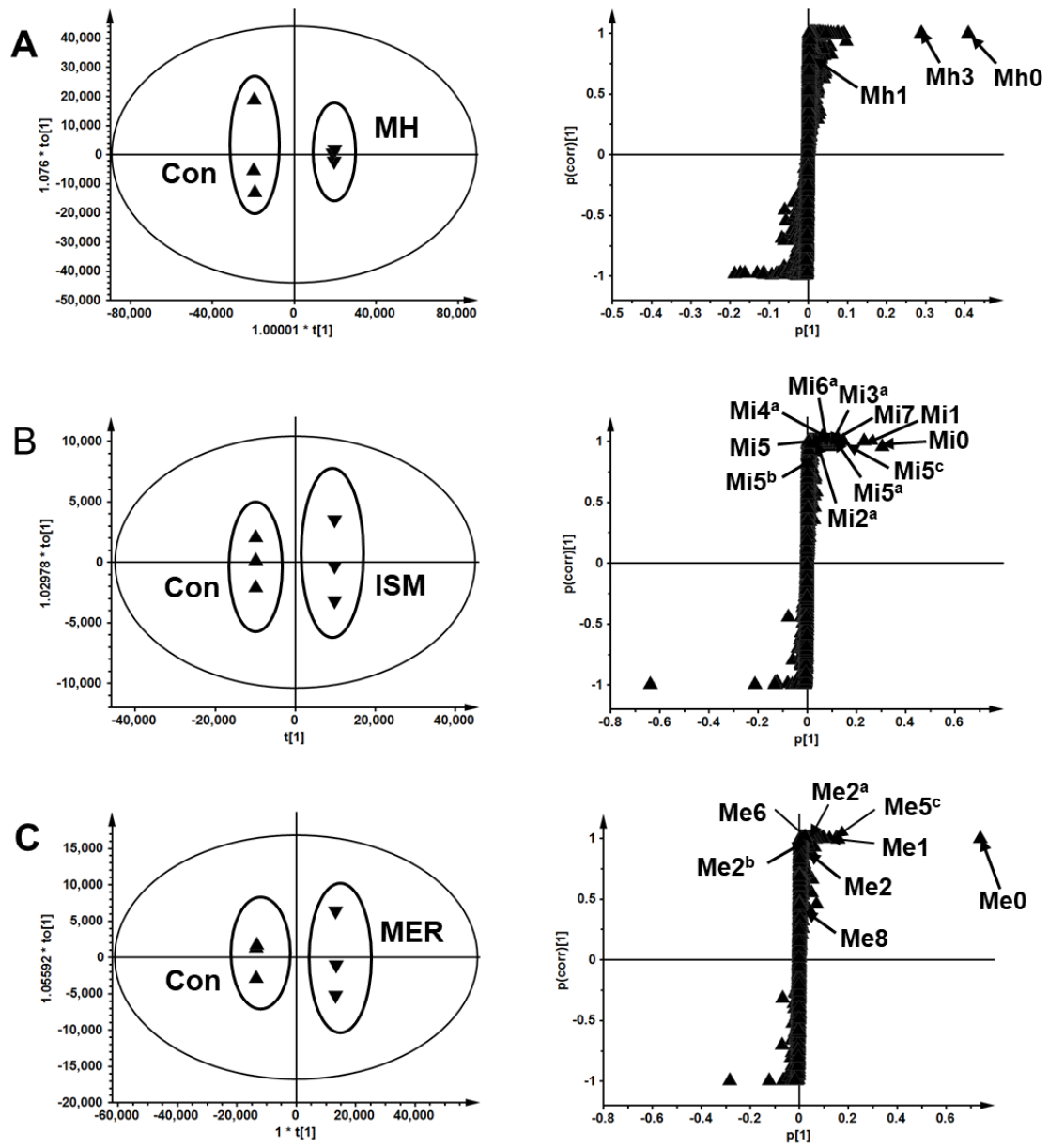


Fig S2

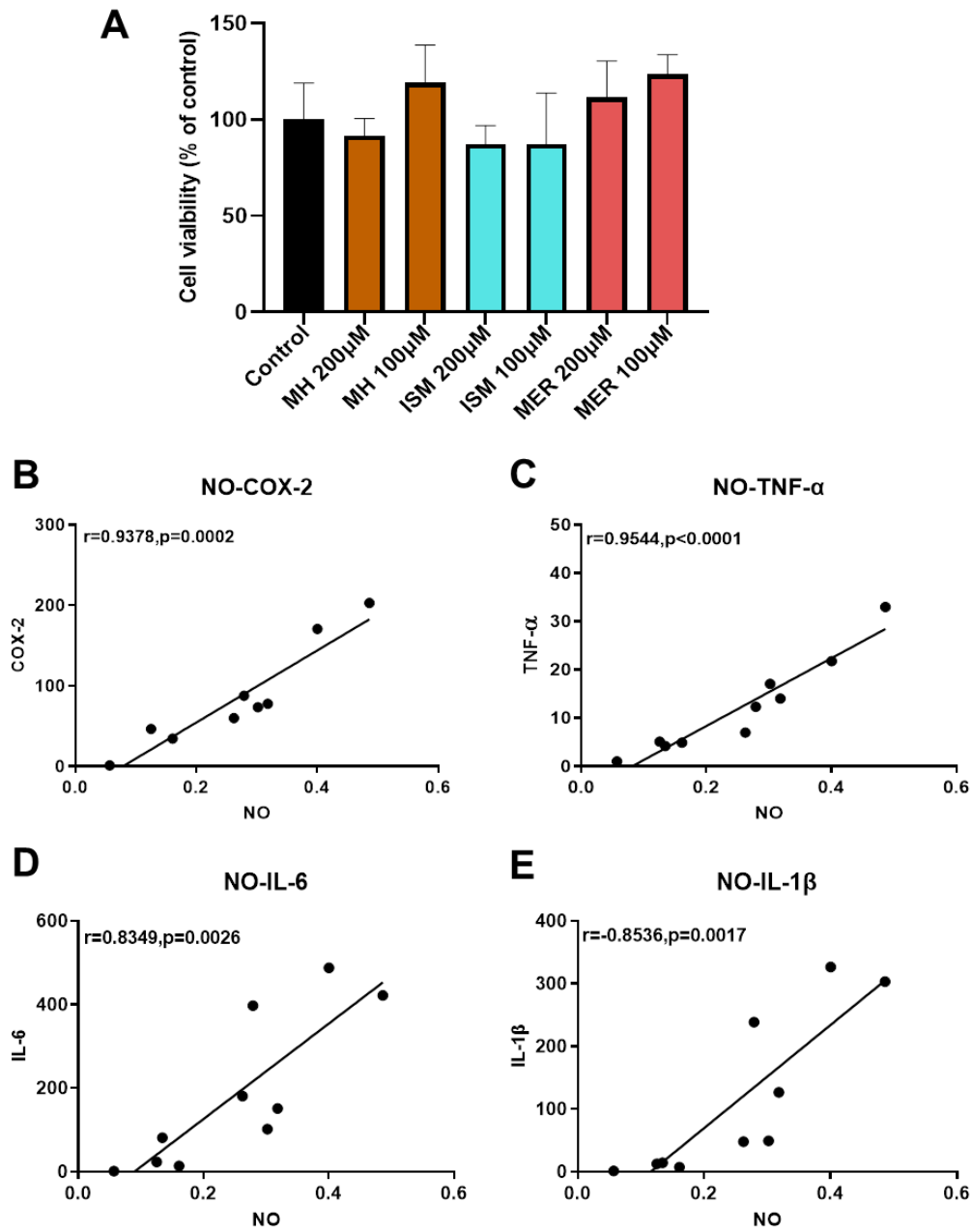
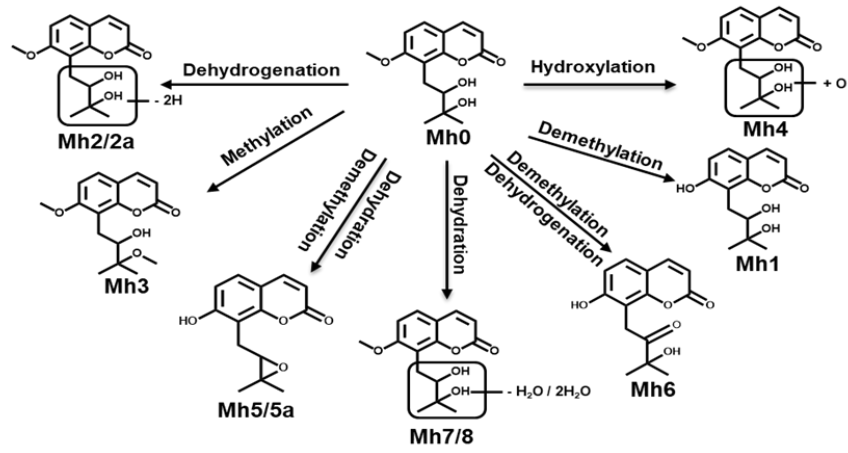


Fig S3

A



B

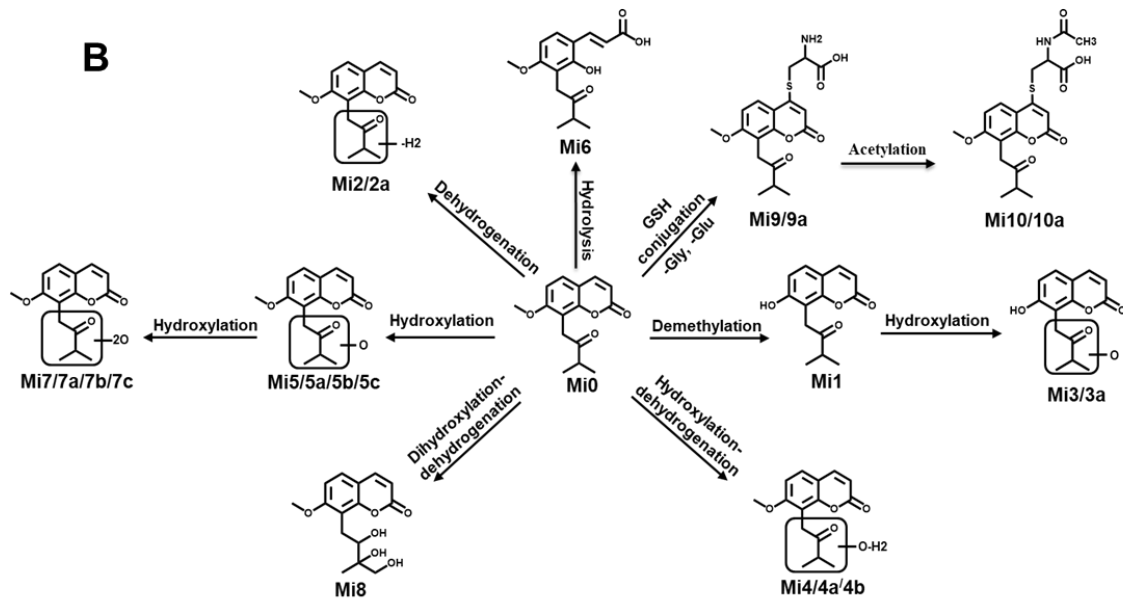


Table S1. Summary of MH metabolites produced *in vivo* and *in vitro* metabolism

Metabolite ID	Molecular formula	RT (min)	m/z[M+H] ⁺	Mass error (ppm)	MS/MS fragments	Identification	Source
Mh0	C ₁₅ H ₁₈ O ₅	6.32	279.1227	2.53	261, 243, 189, 175, 159	Meranzin hydrate	C, H, M
Mh1*	C ₁₄ H ₁₆ O ₅	5.57	265.1070	1.64	247, 229, 223, 177	Mh-CH ₂	C, M
Mh2*	C ₁₅ H ₁₆ O ₅	5.40	277.1070	3.81	259, 249, 235, 227, 219	Mh-2H	C, M, U
Mh2a*	C ₁₅ H ₁₆ O ₅	6.07	277.1070	-1.24	259, 231, 205, 189, 175	Mh-2H	H, M
Mh3*	C ₁₆ H ₂₀ O ₅	6.12	293.1383	-4.92	275, 261, 247, 229, 217	Mh+CH ₂	H, M, U
Mh4*	C ₁₅ H ₁₈ O ₆	6.05	295.1176	-1.08	277, 259, 247, 219, 205	Mh+O	M
Mh5*	C ₁₄ H ₁₄ O ₄	3.98	247.0960	3.64	265, 229, 201, 187, 175	Mh-CH ₂ -H ₂ O	U
Mh5a*	C ₁₄ H ₁₄ O ₄	5.05	247.0960	3.64	263, 229, 201, 187, 175	Mh-CH ₂ -H ₂ O	U
Mh6*	C ₁₄ H ₁₄ O ₅	4.51	263.0910	-2.66	245, 277, 191, 163, 116	Mh-CH ₂ -2H	U
Mh7*	C ₁₅ H ₁₄ O ₃	5.84	243.1010	4.93	228, 203, 189, 175, 159	Mh-2H ₂ O	U
Mh8*	C ₁₅ H ₁₆ O ₄	5.81	261.1110	-4.59	243, 189, 177, 159, 131	Mh-H ₂ O	P

a/b/c/d, isomer metabolite; *, undescribed metabolite. P, plasma; U, urine; C, cell; H, HLM; M, MLM;

Table S2. Summary of ISM metabolites produced *in vivo* and *in vitro* metabolism

Metabolite ID	Molecular formula	RT (min)	m/z[M+H] ⁺	Mass error (ppm)	MS/MS fragments	Identification	Source
Mi0	C ₁₅ H ₁₆ O ₄	8.41	261.1121	1.80	243, 231, 201, 189	Isomeranzin	P, F, U, H, M
Mi1*	C ₁₄ H ₁₄ O ₄	6.94	247.0965	3.32	229, 201, 187, 175	Ism-CH ₂	P, F, U, H, M
Mi2*	C ₁₅ H ₁₄ O ₄	7.11	259.0965	-6.10	243, 231, 213, 189	Ism-2H	H, M
Mi2a*	C ₁₅ H ₁₄ O ₄	8.19	259.0965	-1.85	241, 231, 205, 189	Ism-2H	F, U, H, M
Mi3*	C ₁₄ H ₁₄ O ₅	5.54	263.0914	1.54	245, 233, 221, 187	Ism+O-CH ₂	F, M
Mi3a*	C ₁₄ H ₁₄ O ₅	6.39	263.0914	3.06	245, 217, 203, 191, 175	Ism+O -CH ₂	H, M
Mi4*	C ₁₅ H ₁₄ O ₅	6.08	275.0914	-8.70	231, 215, 203, 189	Ism+O -2H	H
Mi4a*	C ₁₅ H ₁₄ O ₅	6.79	275.0914	1.47	259, 247, 231, 217, 205	Ism+O -2H	H
Mi4b*	C ₁₅ H ₁₄ O ₅	7.58	275.0914	2.56	259, 247, 243, 217	Ism+O-2H	M
Mi5*	C ₁₅ H ₁₆ O ₅	6.33	277.107	0.56	263, 247, 231, 221	Ism+O	U, H, M
Mi5a*	C ₁₅ H ₁₆ O ₅	6.67	277.107	3.45	259, 231, 217, 205, 189	Ism+O	H, M
Mi5b*	C ₁₅ H ₁₆ O ₅	7.12	277.107	-0.88	259, 249, 243, 233, 227	Ism+O	F, H, M
Mi5c*	C ₁₅ H ₁₆ O ₅	7.95	277.107	3.56	259, 243, 221, 205,	Ism+O	F, U, H, M
Mi6*	C ₁₅ H ₁₈ O ₅	6.99	279.1227	5.03	261, 233, 249, 219	Ism+H ₂ O	U
Mi7*	C ₁₅ H ₁₆ O ₆	5.71	293.102	2.18	275, 263, 245, 231, 217	Ism+2O	H, M
Mi7a*	C ₁₅ H ₁₆ O ₆	6.08	293.102	10.37	279, 263, 219, 203, 189	Ism+2O	H
Mi7b*	C ₁₅ H ₁₆ O ₆	6.36	293.102	15.83	275, 261, 247, 233, 207	Ism+2O	M
Mi7c*	C ₁₅ H ₁₆ O ₆	6.63	293.102	4.23	277, 259, 231, 217, 205	Ism+2O	M
Mi8*	C ₁₅ H ₁₈ O ₆	6.24	295.1176	0.99	277, 259, 233, 221, 203	Ism+2O+2H	H, M
Mi9*	C ₁₈ H ₂₁ NO ₆ S	5.36	380.1162	-0.08	334, 291, 259	Ism+Cysteine	P, F, U
Mi9a*	C ₁₈ H ₂₁ NO ₆ S	6.04	380.1162	2.56	362, 334, 291, 259	Ism+Cysteine	P, F, U
Mi10*	C ₂₀ H ₂₃ NO ₇ S	6.56	422.1268	0.72	376, 334, 291, 259	Ism+N-acetylCysteine	F, U
Mi10a*	C ₂₀ H ₂₃ NO ₇ S	7.36	422.1268	2.15	404, 380, 376, 362, 334	Ism+N-acetylCysteine	F, U

a/b/c/d, isomer metabolite; *, undescribed metabolite. P, plasma; F, feces; U, urine; H, HLM; M, MLM