

1 Supplementary materials

2 Table 1. Ingredients of maintenance purified diet

Ingredient	Feed ratio (g/kg)	
	TP23522	TP23520
Casein	190	258
Corn Starch	480	0
Maltodextrin	118	162
Sucrose	65	89
Soybean Oil	24	32
Lard	19	317
Cellulose	47	65
Mineral Mix, M1022	43	58
Vitamin Mix, V1000	9	13
L-Cystine	3	4
Choline Bitartrate	2	3
TBHQ	0.01	0.07
	Total: 1000	Total: 1000

	Feed heat ratio (%)	
	TP23522	TP23520
Protein	20	20
Carbohydrate	70	20
Fat	10	60
	Total: 100	Total: 100
	Feed heat (Kcal/g)	
	TP23522	TP23520
	3.9	5.3

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4 **Table 2. MS fragments of the flavonoids in OJ and FOJ**

No.	Identified Compounds	Formula	RT (min)	[M-H] ⁻ (Error, ppm)	Fragment ions in negative mode	References
1	Luteolin 7-O-rutinoside	C ₂₇ H ₃₀ O ₁₅	5.56	593.1508(0)	285.0422[M-H-Rha-Glc] ⁻ , 241.1035, 175.0416	Zhang, J <i>et al.</i> , 2020
2	Eriodictyol 7-O-rutinoside	C ₂₇ H ₃₂ O ₁₅	7.38	595.1682(0)	459.1153, 475.1806, 287.0570[M-H-Rha-Glc] ⁻	Gattuso, G <i>et al.</i> , 2006
3	Naringenin 7-O-rutinoside ^a	C ₂₇ H ₃₂ O ₁₄	7.95	579.1716(0)	271.0602[M-H-Rha-Glc] ⁻ , 151.0030[M-H-Rha-Glc-C ₈ H ₈ O] ⁻	Standard
4	Apigenin 7-O-neohesperidoside	C ₂₇ H ₃₀ O ₁₄	8.15	577.1568(0)	457.1775, 431.1891, 269.0459[M-	Gattuso, G <i>et al.</i> , 2006

5	Naringenin 7-O-neohesperidoside	$C_{27}H_{32}O_{14}$	8.26	579.1715(0)	H-Rha-Glc] ⁻ 271.0622[M-H-Rha-Glc] ⁻ , 151.0045[M-H-Rha-Glc-C ₈ H ₈ O] ⁻	Gattuso, G <i>et al.</i> , 2006
6	Hesperetin 7-O-neohesperidoside	$C_{28}H_{34}O_{15}$	8.42	609.1836(0)	301.0717[M-H-Rha-Glc] ⁻	Gattuso, G <i>et al.</i> , 2006
7	Eriodictyol 7-O-neohesperidoside	$C_{27}H_{32}O_{15}$	8.56	595.1648(0)	287.0474[M-H-Rha-Glc] ⁻ , 151.0045[M-H-Rha-Glc-C ₈ H ₈ O] ⁻ , 135.0455, 107.0153	Anghel, B <i>et al.</i> , 2014
8	Hesperetin 7-O-rutinoside ^a	$C_{28}H_{34}O_{15}$	8.69	609.1835(0)	301.0716[M-H-Rha-Glc] ⁻	Standard
9	Apigenin 7-O-rutinoside	$C_{27}H_{30}O_{14}$	9.77	577.1592(0)	431.0962	Plazonić, Ana, Bucar, F <i>et al.</i> , 2009
10	Diosmetin 7-O-rutinoside or Diosmetin 7-O-neohesperidoside	$C_{28}H_{32}O_{15}$	9.93	607.1668(0)	563.1569, 341.1063, 299.0605[M- H-Rha-Glc] ⁻ , 284.0614	Chen, Xu <i>et al.</i> , 2019
11	Isosakuranetin 7-O- neohesperidoside	$C_{28}H_{34}O_{14}$	10.48	593.1867(0)	285.0793[M-H-Rha-Glc] ⁻	Es-Safi, N. E <i>et al.</i> , 2005
12	Eriodictyol	$C_{15}H_{12}O_6$	10.61	287.0573(0)	179.0585, 153.0148, 151.0035[M- H-C ₈ H ₈ O ₂] ⁻ , 135.0447[M-H- C ₇ H ₄ O ₄] ⁻ , 125.0246, 107.0094[M- H-C ₈ H ₈ O ₂ -CO ₂] ⁻	Es-Safi, N. E <i>et al.</i> , 2005
13	Luteolin ^a	$C_{15}H_{10}O_6$	10.71	285.0766(0)	269.0066, 243.8995, 241.8980, 217.8679, 153.8685, 151.3631, 149.0009, 123.0054, 121.0265	Standard
14	Isosakuranetin 7-O-rutinoside	$C_{28}H_{34}O_{14}$	10.78	593.1865(0)	285.0793[M-H-Rha-Glc] ⁻	Es-Safi, N. E <i>et al.</i> , 2005
15	Isosakuranetin	$C_{16}H_{14}O_5$	10.98	285.0768(0)	270.0504, 243.0662	Zhang, J <i>et al.</i> , 2020
16	Apigenin ^a	$C_{15}H_{10}O_5$	11.88	269.0316(0)	255.0063, 225.9249, 201.8024, 151.0191[M-H-C ₈ H ₆ O] ⁻ , 119.9322	Standard

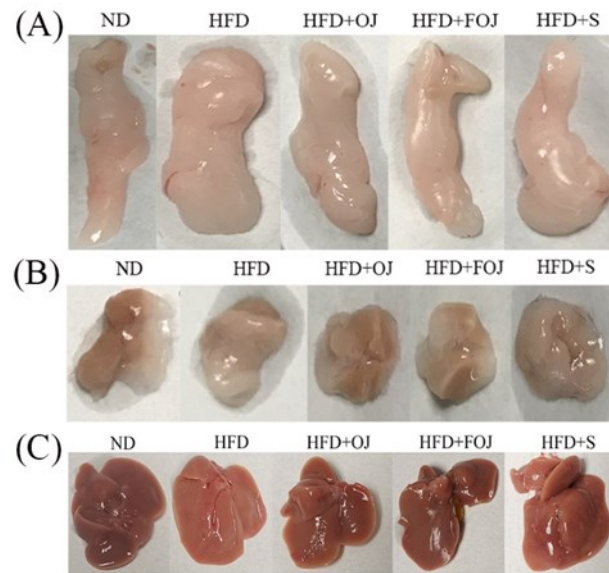
17	Naringenin ^a	C ₁₅ H ₁₂ O ₅	12.09	271.0604(0)	177.0191[M-H-C ₆ H ₆ O] ⁻ , 151.0035[M-H-C ₈ H ₈ O] ⁻ , 119.0510[M-H-C ₇ H ₄ O ₄] ⁻ , 107.0159[M-H-C ₈ H ₈ O-CO ₂] ⁻ , 93.0005[M-H-C ₉ H ₆ O ₄] ⁻	Standard
18	Diosmetin ^a	C ₁₆ H ₁₂ O ₆	12.3	299.0544(0)	285.0142[M-H-CH ₂] ⁻ , 242.0562, 151.0003[M-H-C ₉ H ₈ O ₂]	Standard
19	Hesperetin ^a	C ₁₆ H ₁₄ O ₆	12.5	301.0719(0)	286.0498[M-H-CH ₃] ⁻ , 177.0919[M-H-C ₇ H ₈ O ₂] ⁻ , 151.0769[M-H-C ₉ H ₁₀ O ₂] ⁻ , 107.0027[M-H-C ₉ H ₁₀ O ₂ -CO ₂] ⁻	Standard

5 Rha = rhamnose moiety, Glc = glucose moiety. "N.D.": Undetected

6 ^a The metabolites were identified and quantified by comparing to the standard compound

7 *p < 0.05, **p < 0.01, and ***p < 0.001, compared with OJ.

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10 **Figure 1.** Exemplificative macroscopic images of (A) eWAT, (B) iBAT, and (C) liver from mice in the different groups.

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12 **References**

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