

Preparative Separation of Flavonoids from Goji Berries by Mixed-Mode Macroporous Adsorption Resins and Effect on A β -Expressing and Anti-Aging Genes

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Received: 30 May 2020; Accepted: 21 July 2020; Published: date

SUPPLEMENTARY MATERIALS CONTENT

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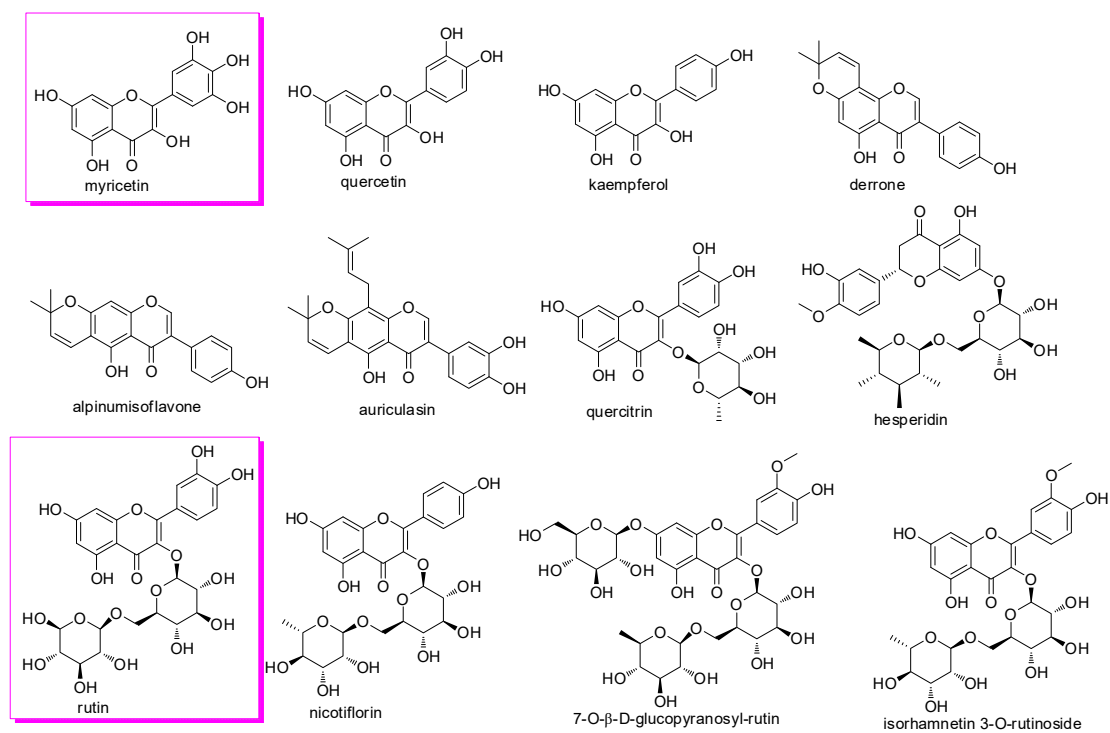
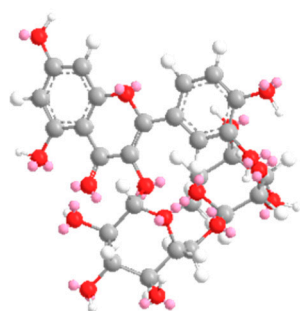
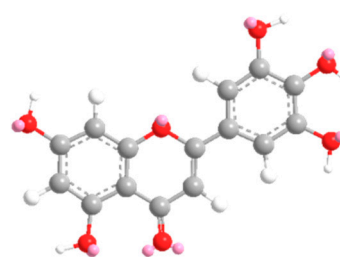


Figure S1. Chemical structure of Flavonoids from Goji berries.



Molecular dimensions is 1.382 nm and logP is -5.91

Rutin



Molecular dimensions is 1.135 nm and logP is -5.04

Myricetin

Figure 2. The molecular dimensions and logP of Rutin and Myrucetin.

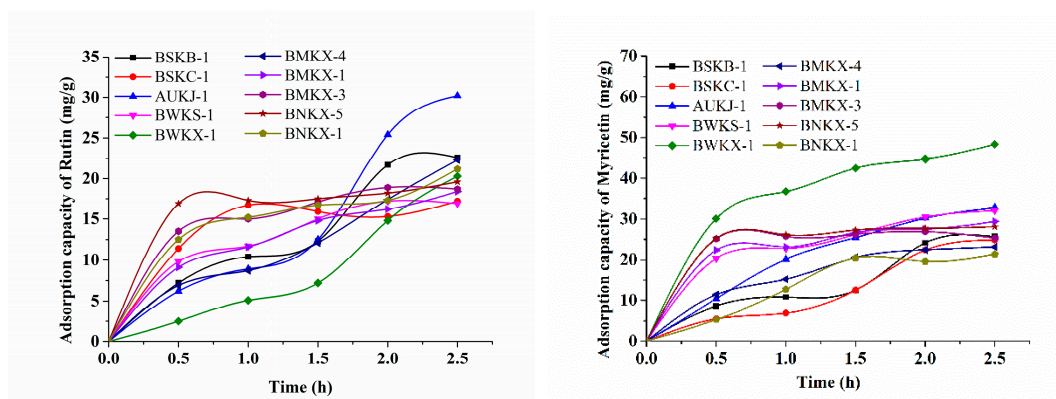


Figure 3. Adsorption capacities for Rutin and Myricetin on ten resins.

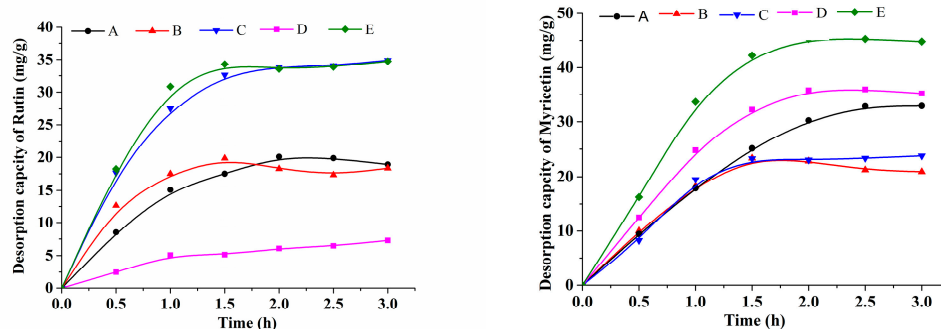


Figure 4. Desorption capacity of Rutin and Myricetin on five different ratio resins (A~E: AUKJ-1 and BWKX-1 in 1:1, 1:1.5, 1.5:1, 1:2, 2:1 in turn).

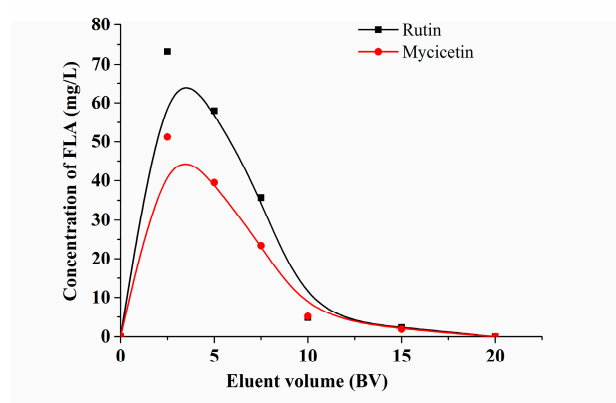


Figure 5. Effect of eluent volume on the desorption capacity of Rutin and Myricetin.

Table 1. Physical properties and the moisture contents of the MARs used.

Resins series	Polarity	Structure	Specific Surface Area (m ² /g)	Pore Size (nm)	Moisture Content
BSKB-1	Strong	SDVB	550-600	8.0	74.34%
BSKC-1	Strong	SDVB	650.4	8.0	53.82%
AUKJ-1	Weak	SDVB	1326.9	2.32	45.08%
BWKS-1	Weak	SDVB	600.0	11	57.53%
BWKX-1	Weak	SDVB	985.7	5.37	72.95%
BMKX-4	Middle	SDVB	658.0	7.25	65.61%
BMKX-1	Middle	SDVB	562.1	7.18	46.59%
BMKX-3	Middle	SDVB	656.9	3.49	56.72%
BNKX-5	Non	SDVB	735.7	7.52	70.53%
BNKX-1	Non	SDVB	900.0	6.25	59.31%

Table 2. Effect of loading concentration on the adsorption capacity of Rutin and Myricetin.

Concentration (g/L)	400	600	800	1000	1200
Rutin (µg/mL)	40.10	41.06	60.98	94.89	140.90
Myricetin (µg/mL)	6.91	7.57	34.57	37.58	39.10

Table 3. Effect of loading rate on the adsorption capacity of Rutin and Myricetin.

Flow rate (BV/h)	5	10	15	20	25
Rutin (µg/mL)	109.41	95.68	152.44	195.43	291.51
Myricetin (µg/mL)	48.84	16.70	86.42	108.06	127.48

Table 4. Effect of ethanol concentration on the desorption capacity of Rutin and Myricetin.

Ratio of ethanol (%)	30	45	60	75	90
Rutin ($\mu\text{g/mL}$)	87.81	244.55	503.03	456.51	382.16
Myricetin ($\mu\text{g/mL}$)	102.3	229.85	549.25	434.95	180.35

Table 5. Effect of elution rate on the desorption capacity of Rutin and Myricetin.

Flow rate (BV/h)	5	10	15	20	25
Rutin($\mu\text{g/mL}$)	134.54	148.43	164.32	135.38	109.90
Myricetin($\mu\text{g/mL}$)	101.66	146.26	189.12	183.30	177.45