

## **Materials and methods (Supplementary Materials)**

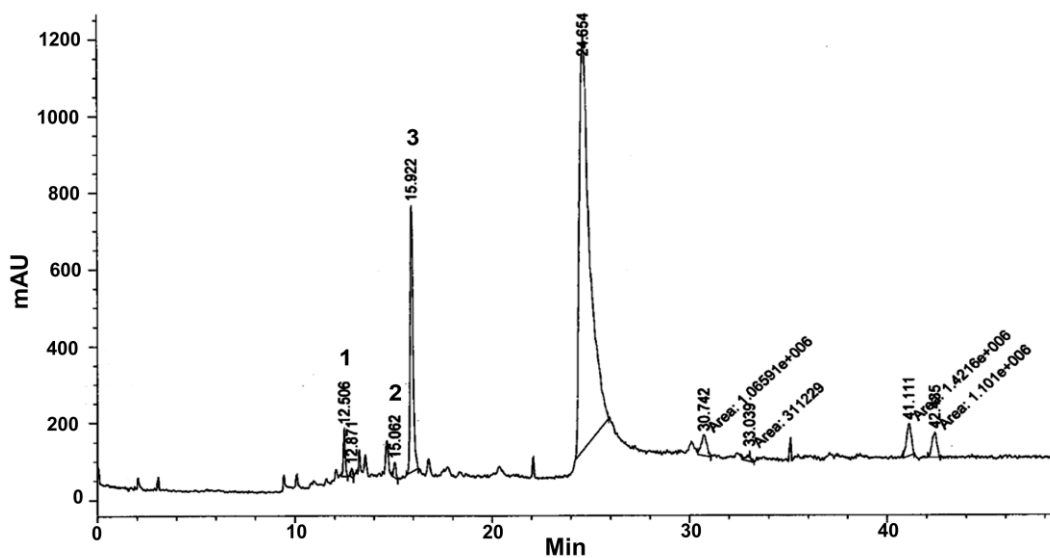
### **1.1 Quantitative analysis of RR and BR extracts**

#### **1.1.1 Phenolic compound analysis**

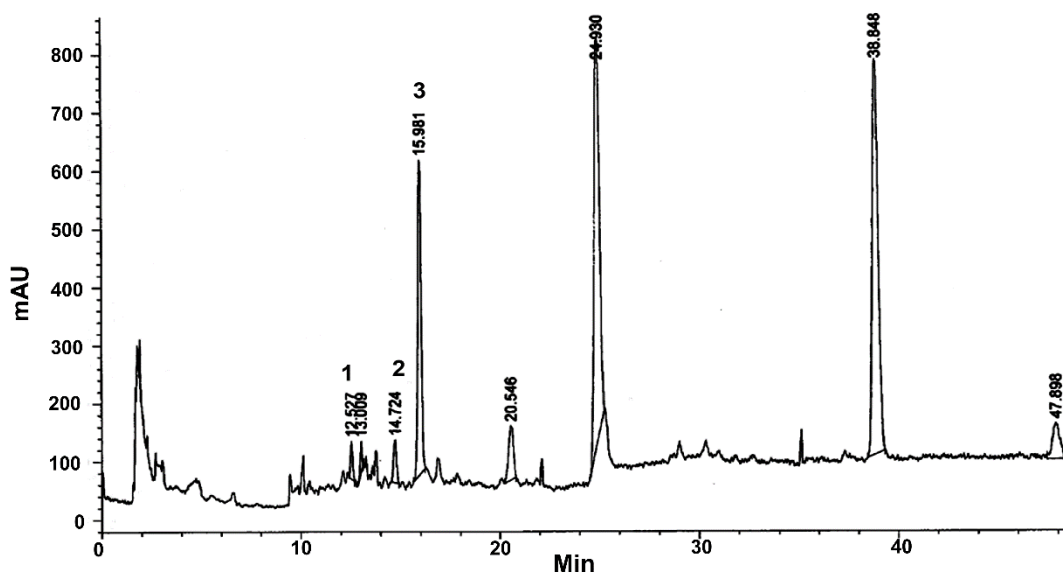
HPLC separation was performed on a LiChroCART RP-18e column [150 x 4.6 mm, diameter 5  $\mu$ m] (Purospher STAR Merck USA). The mobile phase consisted of 10 mM ammonium formate buffer, pH 4 with formic acid (mobile phase A) and 10 mM ammonium formate buffer, pH 4 with formic acid in acetonitrile (mobile phase B). The gradient used was 100% of solvent B from 0 - 5 min, 0% to 20% of solvent A from 5 - 10 min, 20% of solvent A from 10-20 min, and 20% to 40% of solvent A from 20-60 min, at flow rate of 1.0 mL/min and the injection volume was 10  $\mu$ L. The separated compounds, acquired with a diode array at wavelengths of 270 nm, were assessed and compared to a standard calibration curve.

#### **1.1.2 Anthocyanin analysis**

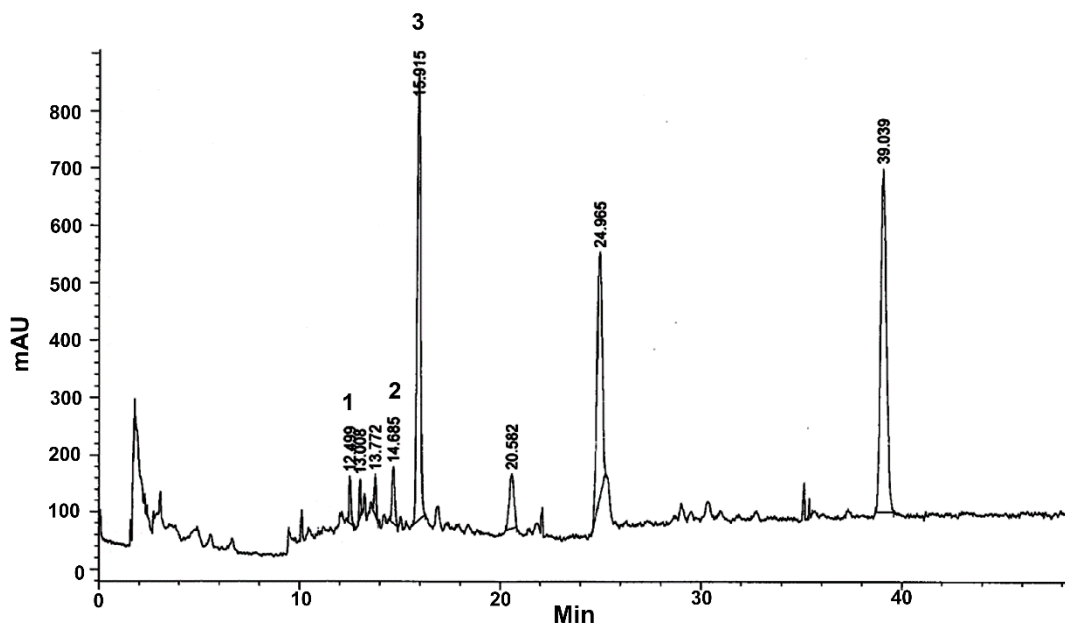
HPLC separation was performed on a Zorbax SB C18 column [150 x 4.6 mm, diameter 5  $\mu$ m] (Agilent technologies USA). The mobile phase was composed of 0.1% trifluoroacetic acid (TFA) in water (mobile phase A) and 0.1% TFA in acetonitrile (mobile phase B). The gradient used was 7% to 20% of solvent A in 60 min, then 93% to 80% of solvent B in 60 min at flow rate of 0.5 mL/min and the injection volume was 10  $\mu$ L. Separated compounds, acquired with a diode array at wavelengths of 270 and 500 nm, were interpreted and quantified using a standard calibration curve.



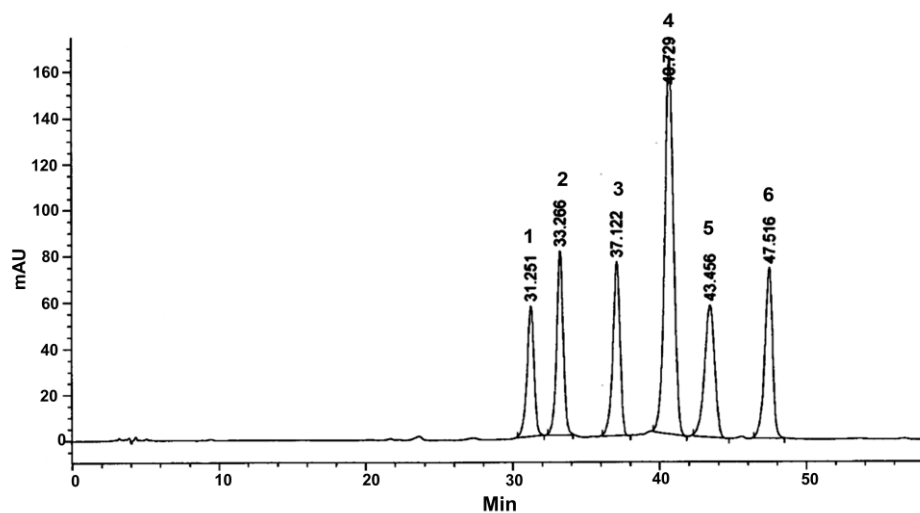
**Figure S1** High performance liquid chromatography (HPLC) chromatogram of a mixture of phenolic acid standards. Peak: 1 Catechin, 2 Rutin, and 3 Isoquercetin.



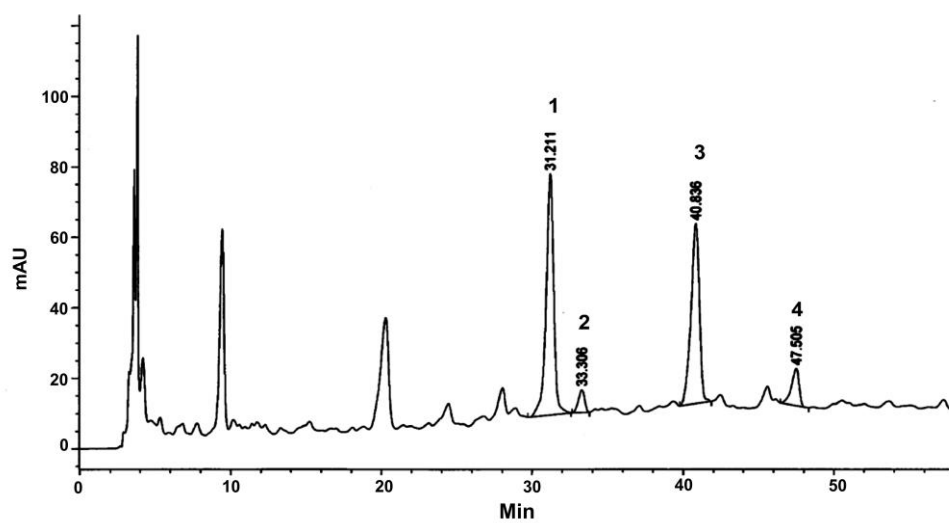
**Figure S2** HPLC chromatogram of polyphenols from red rice extract. Peak: 1 Catechin, 2 Rutin, and 3 Isoquercetin.



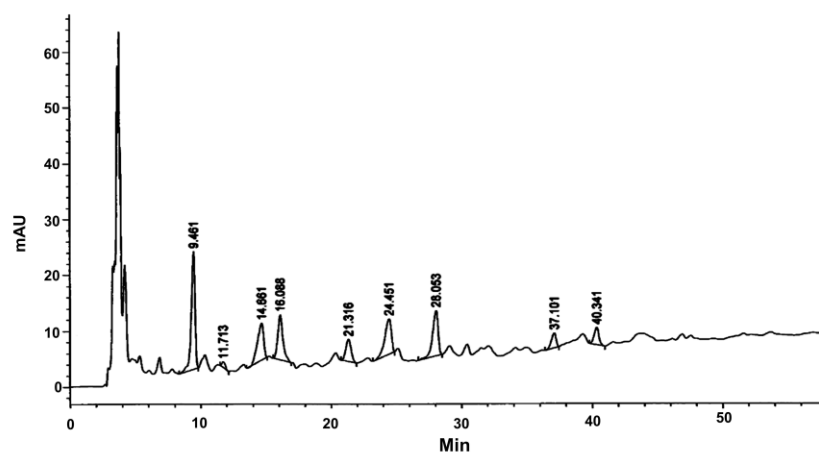
**Figure S3** HPLC chromatogram of polyphenols from black rice extract. Peak: 1 Catechin, 2 Rutin, and 3 Isoquercetin.



**Figure S4** HPLC chromatogram of standard anthocyanins. Peak: 1 cyanidin 3-glucoside, 2 cyanidin 3-O-rutinoside, 3 Callistephin, 4 Peonidin, 5 Malvidin, and 6 Quercetin.



**Figure S5** HPLC chromatogram of anthocyanins from red rice extract. Peak: 1 cyanidin 3-glucoside, 2 cyanidin 3-O-rutinoside, 3 Peonidin, and 4 Quercetin



**Figure S6** HPLC chromatogram of anthocyanins from black rice extract.

**Table S1.** Effect of RR and BR on body weight, blood glucose, triglyceride, cholesterol, AST, ALT, BUN and creatinine levels in normal control rats.

Group	D0	D15	D30	D45
<b>Body weight (g)</b>				
Normal RR treated group	276.25±4.89	296.67±3.65	335.83±4.80	404.17±5.29
Normal BR treated group	266.25±3.50	291.88±2.98	323.13±2.82	396.25±4.09
<b>Blood glucose level (mg/dL)</b>				
Normal RR treated group	152.37±11.34	213.02±6.31	207.74±8.25	229.52±23.57
Normal BR treated group	158.50±8.78	208.67±4.15	214.48±9.83	236.25±31.53
<b>Triglyceride level (mg/dL)</b>				
Normal RR treated group	118.69±2.88	121.88±6.55	120.25±11.55	130.07±3.74
Normal BR treated group	110.81±2.02	118.44±3.04	115.25±2.92	121.18±4.43
<b>Cholesterol level (mg/dL)</b>				
Normal RR treated group	156.63±7.67	175.00±8.44	193.20±6.21	191.36±5.08
Normal BR treated group	144.75±9.92	125.25±7.59	155.13±9.34	170.39±7.19
<b>AST ((Unit/L)</b>				
Normal RR treated group	59.05±2.98	59.23±1.59	60.28±1.52	62.28±1.13
Normal BR treated group	60.84±2.06	58.07±5.40	68.76±3.52	69.58±4.61
<b>ALT (Unit/L)</b>				
Normal RR treated group	54.34±2.06	56.79±2.14	62.67±3.43	71.67±3.46
Normal BR treated group	54.53±2.67	50.21±3.87	64.11±4.51	63.71±3.56
<b>BUN (mg/Dl)</b>				
Normal RR treated group	0.85±0.15	0.88±0.19	1.02±0.04	0.98±0.09
Normal BR treated group	0.91±0.07	1.13±0.04	0.91±0.02	0.81±0.04
<b>Creatinine (mg/Dl)</b>				

Normal RR treated group	0.382±0.02	0.440±0.06	0.455±0.03	0.492±0.10
Normal BR treated group	0.331±0.05	0.423±0.03	0.486±0.02	0.538±0.10

**Table S2** Effect of RR and BR on MDA, FRAP, GSH in serum and GSH in liver tissue in normal control rats.

Group	MDA (μmol/dL)	FRAP (μmol FeSO4/L)	GSH (nmol GSH/μg protein) in Serum	GSH ( nmol GSH/μg protein) in liver tissue
Normal RR treated group	0.497±0.10	1942.92±71.67	12.34±1.87	8.54±0.72
Normal BR treated group	0.495±0.12	1849.69±1 01.46	8.93±1.10	6.7±2.05