Supplementary Materials: Effects of Copper Pollution on the Phenolic Compound Content, Color, and Antioxidant Activity of Wine

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Table S1. Sulfur dioxide (SO_2) contents in initial juice and in finished wine.

Sample		SO_2 Content (mg/L)
Initial juice		20 ± 0.00 a
Finished wine		
Low	*0.00 mM (0 mg/L)*	1.01 ± 0.11 b
	0.05 mM (3.2 mg/L)	1.05 ± 0.06 b
Medium	*0.15 mM (9.6 mg/L)*	1.06 ± 0.11 b
	0.20 mM (12.8 mg/L)	1.07 ± 0.12 b
	0.25 mM (16.0 mg/L)	1.11 ± 0.12 b
	0.30 mM (19.2 mg/L)	1.09 ± 0.13 b
	0.35 mM (22.4 mg/L)	1.06 ± 0.12 b
High	*0.50 mM (32 mg/L)*	0.98 ± 0.09 b
	1.00 mM (64 mg/L)	1.01 ± 0.03 b
	1.50 mM (96 mg/L)	0.92 ± 0.14 b

Table S2. Detection wavelength, retention time, regression equation and limit of detection of eleven phenolic acid compounds.

Phenolic Compounds	Detection Wavelength λ/nm	Retention Time t/min	Linear Range w/(mg/L)	Regression Equation	R^2	Limit of Detection ρ/(mg/L)
gallic acid	280	4.904	1–150	y = 65,231x – 18,205	0.9995	0.0252
protocatechuic acid	280	9.332	1.4–140	y = 73,473x – 32,526	0.9993	0.6546
gentisic acid	320	13.743	1.5–100	y = 152,346x – 76,574	0.9998	0.2145
p-hydroxy benzoic acid	280	15.788	0.5–100	y = 36,453x – 13,256	0.9998	0.0643
chlorogenic acid	280	20.102	0.5–100	y = 274,682x – 76,543	0.9999	0.0155
vanillic acid	280	21.508	1–100	y = 154,654x – 63,263	0.9992	0.0145
caffeic acid	280	22.656	1–100	y = 117,543x – 16,473	0.9997	0.2261
syringic acid	280	26.358	0.5–50	y = 86,234x – 65,546	0.9998	0.0462
p-coumaric acid	280	33.232	0.5–50	y = 153,435x – 34,511	0.9998	0.0154
ferulic acid	280	36.714	0.5–50	y = 765,425x – 65,342	0.9995	0.0233
sinapic acid	280	37.792	0.5–50	y = 91,543x – 65,432	0.9997	0.0235

Table S3. Detection wavelength, retention time, regression equation and limit of detection of five flavan-3-ol compounds.

Phenolic Compounds	Detection Wavelength λ/nm	Retention Time t/min	Linear Range w/(mg/L)	Regression Equation	R^2	Limit of Detection ρ/(mg/L)
(+)-Catechin	280	22.866	1–100	y = 124,945x – 16,335	0.9993	0.0726
(−)-Epigallocatechin	280	23.823	1–100	y = 163,433x – 42,695	0.9998	0.0423
EGCG	280	31.611	1–100	y = 154,366x – 43,266	0.9998	0.1355
(−)-Epicatechin	280	35.925	1–100	y = 436,241x – 15,345	0.9999	0.0255
(−)-Epicatechin gallate	280	50.913	1–100	y = 515,634x – 43,624	0.9997	0.0632

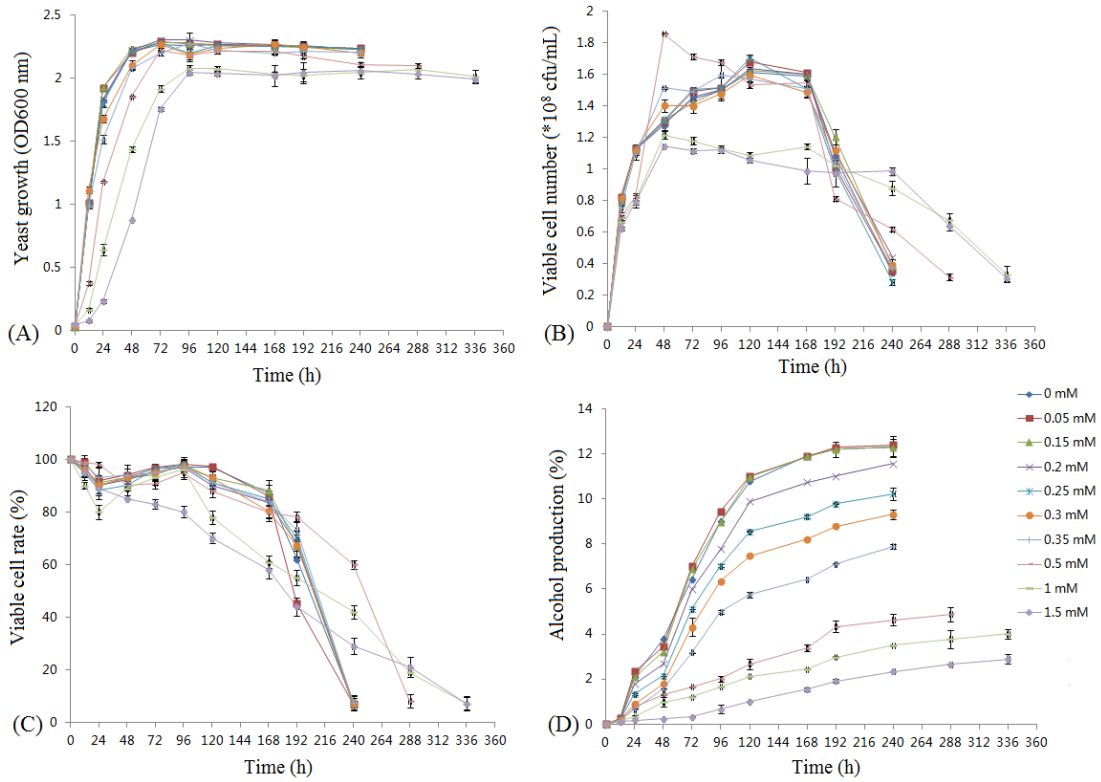

Figure S1. Yeast growth (**A**), viable cell number (**B**), viable cell rate (**C**), and alcohol production (**D**).

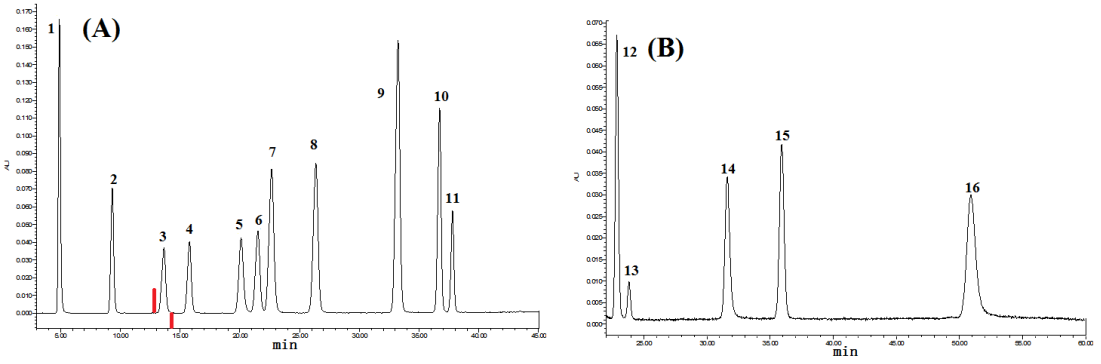

Figure S2. HPLC chromatographs of 11 phenolic acids (**A**) (gentisic acid was detected at 320 nm (the red markers), the others at 280 nm) and (**B**) 5 flavan-3-ol standards (280 nm). 1, gallic acid; 2, protocatechuic acid; 3, gentisic acid (320 nm); 4, *p*-hydroxybenzoic acid; 5, chlorogenic acid; 6, vanillic acid; 7, caffeic acid; 8, syringic acid; 9, *p*-coumaric acid; 10, ferulic acid; 11, sinapic acid; 12, (+)-catechin; 13, (−)-epigallocatechin; 14, (−)-epigallocatechin gallate; 15, (−)-epicatechin and 16, (−)-epicatechin gallate.