

Supplementary Material

Protective effect of a dietary flavonoid-rich antioxidant from bamboo leaves against internal exposure to acrylamide and glycidamide in humans

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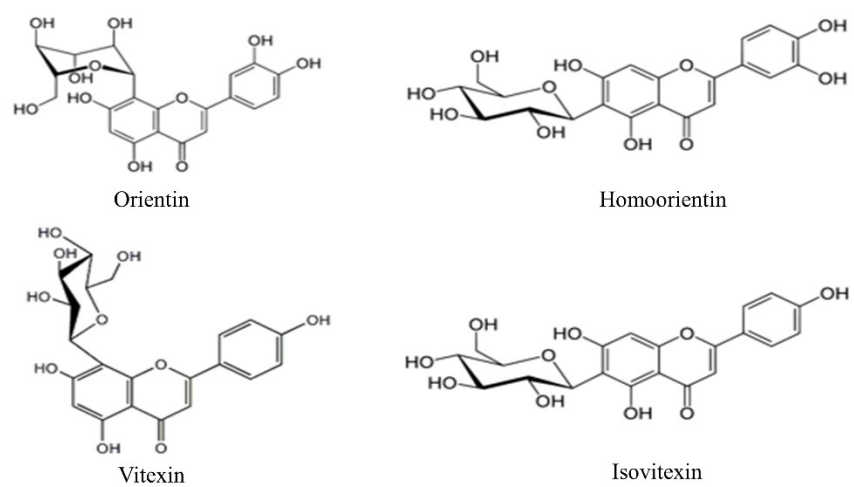


Fig S1. The chemical structures of four representative flavone C-glucosides.

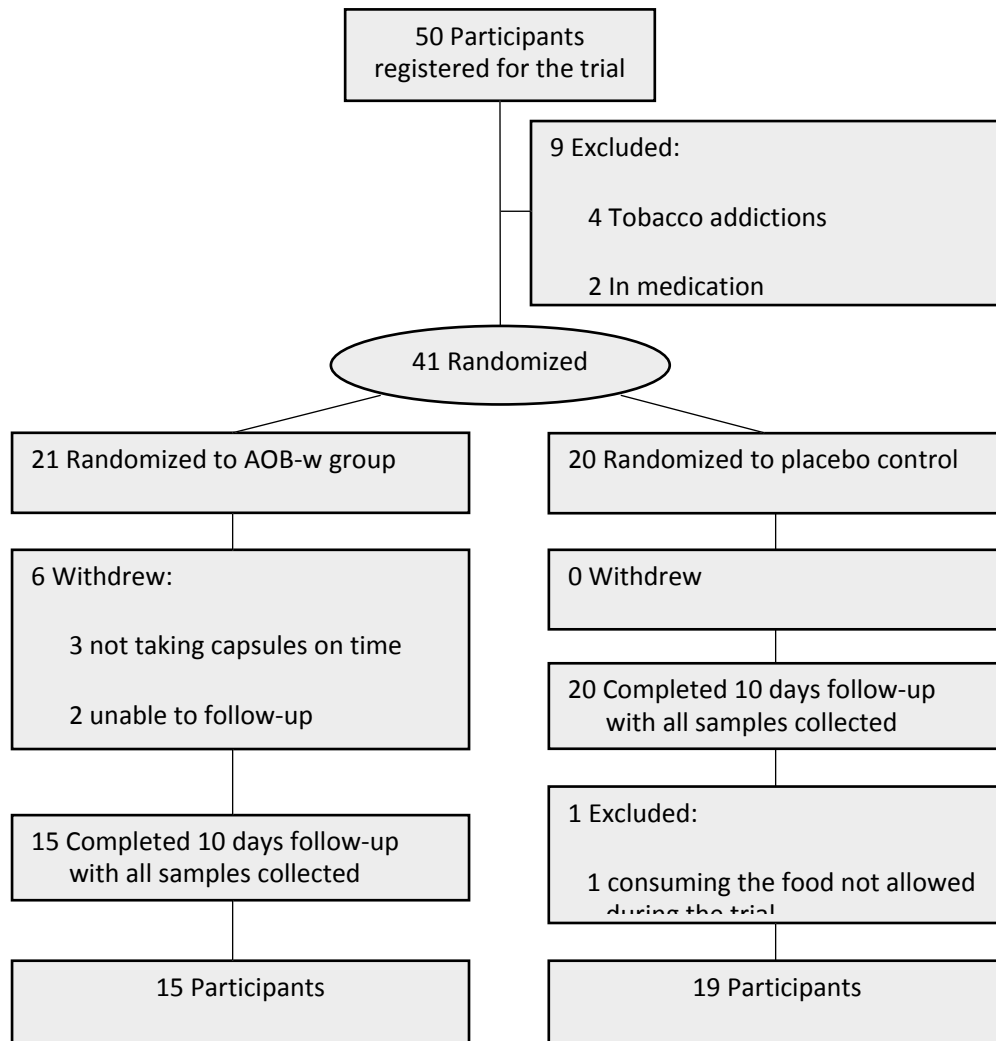


Fig. S2 The consolidated standards of reporting trials (CONSORT) flow chart of current human study.

Table S1 Toxicokinetic data of mercapturic acid adducts of acrylamide and glycidamide in urine of all participants ^a

Time (h)	Concentration of mercapturic acid adducts (nmol/g Ucr) ^b											
	AAMA		AAMA-sul		GAMA		iso-GAMA		AA		GA	
	Control	AOB-w	Control	AOB-w	Control	AOB-w	Control	AOB-w	Control	AOB-w	Control	AOB-w
0	239.0 ± 171.2	252.4 ± 138.8	122.0 ± 56.0	124.0 ± 55.1	40.0 ± 17.7	61.8 ± 26.1	30.1 ± 12.0	32.4 ± 18.7	1685.7±764	1932.9±907.5	590.4±228.4	774.3±289.5
2	189.6 ± 111.1	240.0 ± 109.3	97.1 ± 40.5	63.7 ± 45.4	34.3 ± 12.1	35.3 ± 20.0	25.0 ± 11.5	17.8 ± 13.0	1068.4±670.2	1489.1±452	651±386.9	463.9±95.5
4	401.6 ± 815.6	222.1 ± 81.1	129.4 ± 71.6	55.3 ± 34.6	37.4 ± 15.5	19.9 ± 6.6	21.1 ± 8.9	12.7 ± 4.3	896.7±864.6	1317.2±529	384.3±134.4	308.5±136.9
6	987.5 ± 1314.5	803.4 ± 682.9	194.3 ± 68.6	195.0 ± 194.1	63.1 ± 40.5	66.8 ± 60.0	32.3 ± 16.9	21.7 ± 13.5	3602.1±2146.5	8896.8±4491.8	904.2±398.4	823±366.9
8	1381.9 ± 1728.7	870.2 ± 561.6	238.3 ± 71.1	232.6 ± 153.4	84.1 ± 41.8	82.8 ± 67.3	37.4 ± 20.5	19.9 ± 7.8	5115.7±3498	6881.8±4035.5	1189.1±744.8	813.1±348.4
10	1514.6 ± 1184.4	935.3 ± 478.2	285.5 ± 124.5	251.6 ± 109.6	112.8 ± 46.6	105.8 ± 60.1	40.4 ± 21.0	29.5 ± 11.7	2813.7±1992	5203.5±1487.2	750±490.2	626.8±183.9
14	1554.7 ± 1242.2	753.4 ± 473.1	311.3 ± 119.1	229.4 ± 147.3	132.6 ± 51.6	99.7 ± 70.1	43.6 ± 20.9	30.1 ± 20.9	2306.5±1554.6	4807.8±1543.3	712.4±880.9	507.5±99.3
24	966.6 ± 802.0	708.7 ± 440.5	318.7 ± 132.5	279.2 ± 136.3	140.9 ± 52.7	134.8 ± 86.1	44.5 ± 21.7	36.4 ± 23.4	1849.6±1505	3728.2±1021.3	620.3±373.7	423.4±131.4
36	529.2 ± 395.2	358.7 ± 103.0	262.9 ± 100.8	197.1 ± 96.2	95.0 ± 44.6	73.3 ± 35.4	32.1 ± 11.6	22.5 ± 9.4	1181.1±799.3	2408.6±1138.7	377.9±141.8	279.6±148.6
48	447.0 ± 345.6	373.7 ± 139.2	221.7 ± 76.0	178.3 ± 93.8	86.6 ± 28.4	77.9 ± 50.0	29.4 ± 10.7	21.8 ± 10.6	953.3±561.6	2333.3±1340.1	449.2±210	250.3±154.9

^a Abbreviations: AAMA, *N*-acetyl-*S*-(2-carbamoyl-ethyl)-L-cysteine; AAMA-sul, *N*-acetyl-*S*-(2-carbamoyl-ethyl)-L-cysteine-sulfoxide; iso-GAMA, *N*-acetyl-*S*-(1-carbamoyl-2-hydroxyethyl)-L-cysteine; GAMA, *N*-acetyl-*S*-(2-carbamoyl-2-hydroxyethyl)-L-cysteine; AA, acrylamide; GA, glycidamide; Ucr, urine creatinine.

^b Data were expressed as mean ± SD (*n* = 19, control; *n* = 15, AOB-w intervention).

Table S2 Kinetic performance and parameters of acrylamide and glycidamide in human urine in placebo and AOB-w groups ^a

	Concentration of mercapturic acid metabolite (nmol/g Ucr) ^b			
	Acrylamide		Glycidamide	
	Placebo	AOB-w	Placebo	AOB-w
Coefficient of kinetic equation ^c				
<i>A</i> (nmol/g Ucr)	5414 (767.1, 1.0×10 ⁴) ^b	9320 (4473, 1.4×10 ⁴)	1137 (541.4, 1733)	948.6 (610.7, 1287)
α (h ⁻¹)	0.0455 (-0.014, 0.0455)	0.039 (0.004, 0.074)	0.025 (-0.003, 0.054)	0.034 (0.011, 0.056)
<i>B</i> (nmol/g Ucr)	-5.19×10 ⁵ (-1.2×10 ⁷ , 1.1×10 ⁷)	-8.53×10 ⁵ (-1.2×10 ⁷ , 1.2×10 ⁷)	-1.64×10 ⁵ (-4.86×10 ⁶ , 5.18×10 ⁶)	-3.98×10 ¹⁶ (-4.2×10 ²³ , 4.2×10 ²³)
β (h ⁻¹)	1.241 (-4.4, 6.882)	8.121 (-3.5×10 ⁶ , 3.5×10 ⁶)	1.385 (-6.36, 9.13)	7.992 (-2.67×10 ⁶ , 2.67×10 ⁶)
Performance of curve fitting ^c				
<i>R</i> ²	0.63	0.88	0.78	0.85
RMSE	888.1	1165	175.1	89.93
Kinetic parameters				
<i>t</i> _{1/2α} (h)	15.4	17.8	27.7	20.4
<i>t</i> _{1/2β} (h)	0.6	0.1	0.5	0.1
AUC (nmol/g Ucr·h)	6.10×10 ⁴	1.34×10 ⁵	8.20×10 ³	7.90×10 ³
<i>t</i> _{max} (h)	6.12	4.32	6.02	5.17
<i>C</i> _{max} (nmol/g Ucr)	3987.1	7861.3	950.3	805.7

^a Abbreviations: *A*, coefficient of elimination kinetics; α , elimination rate constant; AOB-w, water soluble antioxidant of bamboo leaves; AUC, area under curve; *B*, coefficient of distribution kinetics; β , distribution rate constant; *C*_{max}, peak concentration; *R*², correlation coefficient; RMSE, root mean square error; *t*_{1/2 α} , half-life of elimination; *t*_{1/2 β} , half-life of distribution; *t*_{max}, peak time.

^b Coefficients of kinetic equation in the parentheses indicated 95% CI. *n* = 19, control; *n* = 15, AOB-w intervention.

^c The kinetic equations for fitting the data derived from section 2.8.

Table S3 Toxicokinetic data of mercapturic acid adducts of acrylamide and glycidamide in urine of men participants ^a

Time (h)	Concentration of mercapturic acid adducts (nmol/g Ucr) ^b											
	AAMA		AAMA-sul		GAMA		iso-GAMA		AA		GA	
	Control	AOB-w	Control	AOB-w	Control	AOB-w	Control	AOB-w	Control	AOB-w	Control	AOB-w
0	158.6 ± 90.4	213.9±69.2	90.9 ± 41.7	98.5±32.7	37.8 ± 20.7	53.4±21.2	37.8 ± 20.7	24.2±16.1	1149.1±420.8	1721.5±790	535.3±178.6	693.3±299.6
2	168.3 ± 109.8	245.9±107.0	82.0 ± 38.5	69.4±19.7	31.0 ± 12.5	38.9±20.3	31.0 ± 12.5	19.4±15.8	1007.7±854	1335.3±381.1	499.2±247.7	471±100.6
4	226.4 ± 286.3	184.2±66.1	124.1 ± 99.2	38.0±22.6	33.0 ± 15.3	17.8±7.3	33.0 ± 15.3	11.3±4.1	637.1±456.5	996.8±384.5	363.6±77.4	342.8±120
6	669.9 ± 776.6	614.8±532.0	151.3 ± 49.1	157.6±215.1	48.6 ± 30.1	50.1±44.0	48.6 ± 30.1	18.2±11.2	2345.5±1539.8	5640.9±2713.3	886.4±368.3	807.1±192.9
8	942.3 ± 820.2	904.1±338.2	189.6 ± 65.0	254.3±138.3	79.0 ± 40.8	84.7±56.5	79.0 ± 40.8	21.3±9.6	2870±1928.6	7402.6±4579.7	921.6±519.5	680.6±167
10	1059.0 ± 736.3	1037.1±535.3	244.7 ± 135.4	283.2±122.8	106.2 ± 30.1	121.2±63.1	106.2 ± 30.1	29.0±12.4	1782±1821.9	5752.5±1376.5	772.6±488.4	626.4±224.2
14	1027.8 ± 890.8	737.4±563.9	260.7 ± 133.2	223.2±168.9	118.8 ± 25.9	89.1±63.9	118.8 ± 25.9	27.5±20.6	1947.5±2046.7	5498.2±1658.8	428.1±129.5	483.5±63
24	754.9 ± 308.3	713.80±434.5	307.2 ± 152.7	270.2±119.9	119.9 ± 27.3	137.9±89.8	119.9 ± 27.3	39.2±28.6	1067.6±1096.9	3964.1±1234.7	505.3±203.8	363.7±129.6
36	420.4 ± 345.8	383.2±96.5	233.3 ± 115.6	206.9±51.1	69.7 ± 18.2	76.9±21.7	69.7 ± 18.2	21.9±7.1	1018.4±873.4	3067.5±1109.2	356.8±129.8	264.9±141.5
48	422.3 ± 392.9	383.2±145.8	208.0 ± 96.9	183.3±89.3	67.4 ± 17.3	73.7±44.9	67.4 ± 17.3	21.6±9.1	868.7±575.2	2929.5±1461.8	342.9±141.1	270±166.6

^a Abbreviations: AAMA, *N*-acetyl-*S*-(2-carbamoyl-ethyl)-L-cysteine; AAMA-sul, *N*-acetyl-*S*-(2-carbamoyl-ethyl)-L-cysteine-sulfoxide; iso-GAMA, *N*-acetyl-*S*-(1-carbamoyl-2-hydroxyethyl)-L-cysteine; GAMA, *N*-acetyl-*S*-(2-carbamoyl-2-hydroxyethyl)-L-cysteine; AA, acrylamide; GA, glycidamide; Ucr, urine creatinine.

^b Data were expressed as mean ± SD (*n* = 9, control; *n* = 8, AOB-w intervention).

Table S4 Kinetic parameters of AAMA and AAMA-sul in urine of men participants ^a

	Concentration of mercapturic acid metabolite (nmol/g Ucr) ^b			
	AAMA Control	AOB-w	AAMA-sul Control	AOB-w
Coefficient of kinetic equation ^c				
<i>A</i> (nmol/g Ucr)	1768 (947, 2588)	1296 (420, 2171)	932 (-4266, 6130)	323 (149, 497)
α (h ⁻¹)	0.035 (0.018, 0.052)	0.028 (0.002, 0.055)	0.029 (-0.050, 0.108)	0.011 (-0.006, 0.028)
<i>B</i> (nmol/g Ucr)	-4375 (-6686, -2063)	-5601 (-17760, 6561)	-950 (-6030, 4131)	-1240 (-3227, 748)
β (h ⁻¹)	0.299 (0.092, 0.506)	0.434 (-0.213, 1.082)	0.071 (-0.113, 0.255)	0.378 (0.095, 0.851)
Performance of curve fitting ^c				
<i>R</i> ²	0.974	0.894	0.945	0.91
RMSE	66.7	123.6	18.4	31.24
Kinetic parameters				
<i>t</i> _{1/2α} (h)	20.0	24.4	23.8	60.8
<i>t</i> _{1/2β} (h)	2.3	1.6	9.8	1.8
AUC (nmol/g Ucr×h)	36255.3	32728.3	18645.3	25061.7
<i>t</i> _{max} (h)	11.6	10.3	21.7	13.2
<i>C</i> _{max} (nmol/g Ucr)	1044.7	903.2	292.0	269.5

^a Abbreviations: *A*, coefficient of elimination kinetics; α , elimination rate constant; AUC, area under curve; *B*, coefficient of distribution kinetics; β , distribution rate constant; *C*_{max}, peak concentration; *R*², correlation coefficient; RMSE, root mean square error; *t*_{1/2 α} , half-life of elimination; *t*_{1/2 β} , half-life of distribution; *t*_{max}, peak time.

^b Coefficients of kinetic equation in the parentheses were 95% CI. *n* = 9, control; *n* = 8, AOB-w intervention.

^c The kinetic equations for fitting the data derived from section 2.8.

Table S5 Kinetic parameters of GAMA and iso-GAMA in urine of men participants ^a

	Concentration of mercapturic acid metabolite (nmol/g Ucr) ^b			
	GAMA		iso-GAMA	
	Control	AOB-w	Control	AOB-w
Coefficient of kinetic equation ^c				
<i>A</i> (nmol/g Ucr)	334 (-679, 1346)	332 (-1087, 1751)	51 (20, 83)	5.1×10^5 (-7.6×10^{13} , 7.6×10^{13})
α (h ⁻¹)	0.036 (-0.028, 0.099)	0.033 (-0.058, 0.125)	0.017 (0.002, 0.031)	0.054 (-830.9, 831.0)
<i>B</i> (nmol/g Ucr)	-414 (-1328, 500)	-434 (-1699, 832)	-55 (-78, -32)	-5.1×10^5 (-7.6×10^{13} , 7.6×10^{13})
β (h ⁻¹)	0.113 (-0.097, 0.323)	0.115 (-0.193, 0.423)	0.139 (0.010, 0.269)	0.054 (-831.1, 831.2)
Performance of curve fitting ^c				
<i>R</i> ²	0.920	0.835	0.957	0.843
RMSE	12.0	20.3	1.5	4.3
Kinetic parameters				
<i>t</i> _{1/2α} (h)	19.3	20.9	42.0	12.8
<i>t</i> _{1/2β} (h)	6.1	6.0	5.0	12.8
AUC (nmol/g Ucr · h)	5655.4	6230.4	2714.2	2089.2
<i>t</i> _{max} (h)	17.7	18.4	17.9	20.1
<i>C</i> _{max} (nmol/g Ucr)	121.1	128.0	33.6	35.0

^a Abbreviations: *A*, coefficient of elimination kinetics; α , elimination rate constant; AUC, area under curve; *B*, coefficient of distribution kinetics; β , distribution rate constant; *C*_{max}, peak concentration; *R*², correlation coefficient; RMSE, root mean square error; *t*_{1/2 α} , half-life of elimination; *t*_{1/2 β} , half-life of distribution; *t*_{max}, peak time.

^b Coefficients of kinetic equation in the parentheses were 95% CI. *n* = 9, control; *n* = 8, AOB-w intervention.

^c The kinetic equations for fitting the data derived from section 2.8.

Table S6 Toxicokinetic data of mercapturic acid adducts of acrylamide and glycidamide in urine of women participants ^a

Concentration of mercapturic acid adducts (nmol/g Ucr) ^b												
Time (h)	AAMA		AAMA-sul		GAMA		iso-GAMA		AA		GA	
	Control	AOB-w	Control	AOB-w	Control	AOB-w	Control	AOB-w	Control	AOB-w	Control	AOB-w
0	311.5 ± 197.7	296.2±187.4	150.1 ± 53.6	153.2±63.1	41.9 ± 15.3	71.4±29.4	37.3 ± 11.2	41.7±17.9	2168.6±680.4	2174.6±1032.5	639.9±265	866.8±268.6
2	208.7 ± 114.4	233.1±120.2	110.8 ± 39.1	56.9±65.3	37.2 ± 11.6	31.1±20.4	29.5 ± 12.1	15.9±9.7	1123±493.1	1664.9±489.6	787.7±448.4	455.8±96.7
4	559.2 ± 1095.1	265.4±78.4	134.2 ± 38.5	75.1±36.5	41.4 ± 15.3	22.3±5.2	25.6 ± 9.3	14.4±4.2	1130.3±1087.1	1683.4±432.6	403±173.1	269.3±153.5
6	1273.4 ± 1651.6	1018.9±810.2	233.0 ± 61.3	237.8±173.1	76.1 ± 45.5	85.9±73.1	39.7 ± 18.9	25.6±15.6	4733±2026.7	12617.8±2863.7	920.2±443	841.2±519.5
8	1777.5 ± 2238.6	831.4±774.0	282.1 ± 42.9	207.7±176.8	88.7 ± 44.3	80.6±82.6	47.0 ± 23.2	18.2±5.5	7136.9±3403.3	6286.6±3571.3	1429.8±856.5	964.6±447.8
10	1924.7 ± 1388.9	818.9±411.9	322.3 ± 107.3	215.2±87.1	118.7 ± 58.8	88.1±55.5	50.8 ± 22.9	30.1±11.9	3742.2±1721.4	4576±1445.3	729.6±517.4	627.4±142.3
14	2029.0 ± 1361.3	771.7±388.0	356.9 ± 87.8	236.5±131.3	145.1 ± 66.1	111.8±79.9	53.2 ± 23.0	33.1±22.3	2629.7±930.3	4018.7±992.8	968.3±1176.3	535±129.2
24	1157.0 ± 1056.8	701.7±482.1	329.1 ± 118.8	289.4±162.4	159.7 ± 63.7	131.2±88.8	53.9 ± 23.5	33.3±17.5	2553.3±1516.1	3458.5±704.5	723.8±466.1	491.7±102.5
36	627.1 ± 428.6	330.7±110.4	289.6 ± 82.2	185.9±135.2	117.8 ± 49.6	69.2±48.2	37.4 ± 12.4	23.1±12.1	1327.4±741.1	1655.6±591.2	397±156.2	296.3±166
48	469.3 ± 317.1	362.8±141.9	234.0 ± 53.4	172.7±105.7	103.9 ± 25.5	82.7±58.5	34.4 ± 10.9	22.0±12.8	1029.4±568.4	1651.9±825.6	544.9±221.4	227.8±150

^a Abbreviations: AAMA, *N*-acetyl-*S*-(2-carbamoyl-ethyl)-L-cysteine; AAMA-sul, *N*-acetyl-*S*-(2-carbamoyl-ethyl)-L-cysteine-sulfoxide; iso-GAMA, *N*-acetyl-*S*-(1-carbamoyl-2-hydroxyethyl)-L-cysteine; GAMA, *N*-acetyl-*S*-(2-carbamoyl-2-hydroxyethyl)-L-cysteine; AA, acrylamide; GA, glycidamide; Ucr, urine creatinine.

^b Data were expressed as mean ± SD (*n* = 10, control; *n* = 7, AOB-w intervention).

Table S7 Kinetic parameters of AAMA and AAMA-sul in urine of women participants ^a

	Concentration of mercapturic acid metabolite (nmol/g Ucr) ^b			
	AAMA Control	AOB-w	AAMA-sul Control	AOB-w
Coefficient of kinetic equation ^c				
<i>A</i> (nmol/g Ucr)	5066 (480, 9653)	1096 (787, 1405)	491 (423, 559)	396.3 (-282, 1075)
α (h ⁻¹)	0.056 (0.026, 0.086)	0.0256 (0.0099, 0.0414)	0.015 (0.011, 0.019)	0.018 (-0.028, 0.064)
<i>B</i> (nmol/g Ucr)	-8452 (-11380, -5528)	-1.2×10 ¹⁷ (-1.3×10 ²⁴ , 1.3×10 ²⁴)	-725 (-810, -640)	-547 (-1117, 24)
β (h ⁻¹)	0.219 (0.052, 0.386)	8.2 (-2.9×10 ⁶ , 2.9×10 ⁶)	0.199 (0.149, 0.249)	0.181 (-0.301, 0.663)
Performance of curve fitting ^c				
<i>R</i> ²	0.982	0.933	0.996	0.695
RMSE	113.0	95.9	6.1	45.8
Kinetic parameters				
<i>t</i> _{1/2α} (h)	12.3	27.1	45.6	39.2
<i>t</i> _{1/2β} (h)	3.2	0.1	3.5	3.8
AUC (nmol/g Ucr · h)	51593.7	43318.9	28666.5	19369.4
<i>t</i> _{max} (h)	11.5	4.7	16.1	16.2
<i>C</i> _{max} (nmol/g Ucr)	1973.4	969.5	355.1	268.4

^a Abbreviations: *A*, coefficient of elimination kinetics; α , elimination rate constant; AUC, area under curve; *B*, coefficient of distribution kinetics; β , distribution rate constant; *C*_{max}, peak concentration; *R*², correlation coefficient; RMSE, root mean square error; *t*_{1/2 α} , half-life of elimination; *t*_{1/2 β} , half-life of distribution; *t*_{max}, peak time.

^b Coefficients of kinetic equation in the parentheses were 95% CI. *n* = 10, control; *n* = 7, AOB-w intervention.

^c The kinetic equations for fitting the data derived from section 2.8.

Table S8 Kinetic parameters of GAMA and iso-GAMA in urine of women participants ^a

	Concentration of mercapturic acid metabolite (nmol/g Ucr) ^b			
	GAMA		iso-GAMA	
	Control	AOB-w	Control	AOB-w
Coefficient of kinetic equation ^c				
<i>A</i> (nmol/g Ucr)	425 (-692, 1542)	202 (-246, 649)	82 (42, 122)	64 (-142, 269)
α (h ⁻¹)	0.029 (-0.017, 0.075)	0.021 (-0.035, 0.078)	0.019 (0.006, 0.033)	0.024 (-0.048, 0.095)
<i>B</i> (nmol/g Ucr)	-481 (-1537, 575)	-287 (-609, 35.9)	-104 (-141, -68)	-68 (-241, 105)
β (h ⁻¹)	0.088 (-0.043, 0.218)	0.155 (-0.232, 0.542)	0.185 (0.025, 0.345)	0.115 (-0.249, 0.480)
Performance of curve fitting ^c				
<i>R</i> ²	0.969	0.755	0.955	0.709
RMSE	8.9	20.8	2.8	4.9
Kinetic parameters				
<i>t</i> _{1/2α} (h)	23.9	32.3	36.3	29.5
<i>t</i> _{1/2β} (h)	7.9	4.5	3.7	6.0
AUC (nmol/g Ucr · h)	9150.0	7553.7	3725.7	2110.4
<i>t</i> _{max} (h)	21.0	17.5	15.1	18.1
<i>C</i> _{max} (nmol/g Ucr)	154.7	119.5	55.0	33.0

^a Abbreviations: *A*, coefficient of elimination kinetics; α , elimination rate constant; AUC, area under curve; *B*, coefficient of distribution kinetics; β , distribution rate constant; *C*_{max}, peak concentration; *R*², correlation coefficient; RMSE, root mean square error; *t*_{1/2 α} , half-life of elimination; *t*_{1/2 β} , half-life of distribution; *t*_{max}, peak time.

^b Coefficients of kinetic equation in the parentheses were 95% CI. *n* = 10, control; *n* = 7, AOB-w intervention.

^c The kinetic equations for fitting the data derived from section 2.8.

Table S9 The hemoglobin adducts of acrylamide and glycidamide in urine in each group ^a

Time Group	Baseline Control	AOB-w	2nd day Control	AOB-w	10th day Control	AOB-w
All participants						
AAHb (pmol/g Hb)	20.7 (17.2-27.6) ^b	21.0 (19.5-23.1)	20.4 (15.5-27.5)	24.8 (21.5-37.2)	49.8 (34.3-62.2)	42.2 (32.8-56.7)
GAHb (pmol/g Hb)	17.1 (16.6-27.2)	25.9 (20.9-27.2)	19.4 (14.8-21.6)	28.8 (21.4-31.8)	26.4 (15.9-38.0)	29.1 (22.7-38.3)
G/A ratio	0.99 (0.73-1.09)	1.14 (0.94-1.39)	0.86 (0.69-1.23)	1.05 (0.54-1.33)	0.64 (0.37-0.86)	0.63 (0.49-0.80)
Men participants						
AAHb (pmol/g Hb)	21.1 (20.3-28.3)	20.6 (19.2-22.4)	17.5 (15.1-23.6)	26.3 (20.4-37.4)	40.3 (33.0-68.4)	40.4 (31.4-51.9)
GAHb (pmol/g Hb)	17.5 (16.7-19.8)	26.2 (23.3-28.6)	19.5 (9.9-22.8)	20.8 (15.2-26.6)	21.0 (15.7-29.6)	33.0 (24.0-39.8)
G/A ratio	0.79 (0.60-1.05)	1.28 (1.13-1.46)	0.85 (0.61-1.64)	0.52 (0.46-1.13)	0.59 (0.37-0.65)	0.71 (0.51-1.21)
Women participants						
AAHb (pmol/g Hb)	20.1 (16.9-25.3)	21.2 (19.9-23.1)	22.7 (18.0-28.4)	23.3 (21.6-32.3)	49.9 (42.5-50.3)	47.5 (33.7-56.7)
GAHb (pmol/g Hb)	16.9 (16.4-29.6)	24.9 (17.3-27.0)	18.8 (15.9-21.2)	31.8 (29.3-32.5)	35.0 (22.6-40.7)	26.7 (22.7-33.4)
G/A ratio	1.03 (0.94-1.17)	0.88 (0.78-1.17)	0.89 (0.72-1.10)	1.21 (1.01-1.34)	0.76 (0.56-0.97)	0.52 (0.49-0.67)

^a Abbreviations: AAHb, hemoglobin adduct of acrylamide; GAHb, hemoglobin adduct of glycidamide; G/A ratio, molar ratio of glycidamide to acrylamide.

^b Data were expressed as the median value and interquartile range (in the parentheses).