

Table 1S**Blood and urinary biomarker values in F344 rats following dietary exposure to melamine and cyanuric acid**

Parameters			Concentration of melamine and cyanuric acid in diet (ppm)			
Biomarkers	Sex	Days	0	120	180	240
			Mean \pm SD, CV%	Mean \pm SD, CV%	Mean \pm SD, CV%	Mean \pm SD, CV%
BUN(mg/dl)	Males	28	17.1 \pm 6.30, 37	14.3 \pm 5.10, 36	14.9 \pm 5.30, 36	89.3 \pm 45.1 [#] , 52
	Females	28	16.4 \pm 1.92, 11	15.4 \pm 3.00, 19	13.0 \pm 2.70, 21	56.1 \pm 22.8 [#] , 41
Creatinine (mg/dl)	Males	28	0.48 \pm 0.16, 35	0.43 \pm 0.15, 35	0.41 \pm 0.14, 34	1.83 \pm 1.30 [#] , 71
	Females	28	0.44 \pm 0.05, 11	0.46 \pm 0.07, 16	0.45 \pm 0.05, 11	0.84 \pm 0.32 [#] , 38
RPA-1 (μ g/mg Cr)	Males	0	1.45 \pm 0.36, 25	1.50 \pm 0.37, 25	2.18 \pm 1.27, 58	1.44 \pm 0.54, 37
		2	1.91 \pm 0.57, 30	1.76 \pm 0.97, 55	2.63 \pm 1.09, 42	3.67 \pm 0.84, 23
		4	1.82 \pm 0.52, 29	2.74 \pm 2.09, 76	8.39 \pm 5.81, 69	10.8 \pm 4.49*, 41
		14	1.76 \pm 0.29, 17	2.64 \pm 1.01, 38	12.4 \pm 8.70, 70	10.1 \pm 5.05*, 50
		28	2.03 \pm 0.38, 19	4.05 \pm 2.23*, 55	26.9 \pm 34.1*, 126	NA
	Females	0	1.75 \pm 0.31, 18	1.55 \pm 0.34, 22	1.71 \pm 0.39, 23	1.20 \pm 0.28, 24
		2	1.55 \pm 0.39, 26	1.34 \pm 0.26, 19	2.05 \pm 0.62, 30	4.65 \pm 1.96, 42
		4	1.73 \pm 0.23, 13	1.60 \pm 0.25, 16	5.60 \pm 4.68, 84	19.1 \pm 8.38*, 44
		14	1.51 \pm 0.37, 25	1.59 \pm 0.42, 27	4.66 \pm 2.97, 64	15.5 \pm 14.8*, 96
		28	1.50 \pm 0.27, 18	1.57 \pm 0.71, 45	7.67 \pm 6.62*, 86	NA
Kim-1 (ng/mg Cr)	Males	0	0.82 \pm 0.15, 18	0.77 \pm 0.16, 21	0.82 \pm 0.15, 18	0.79 \pm 0.13, 16
		2	0.92 \pm 0.30, 33	0.73 \pm 0.20, 28	0.88 \pm 0.35, 40	4.10 \pm 1.50, 36
		4	0.84 \pm 0.13, 16	0.87 \pm 0.17, 20	1.41 \pm 0.48, 34	13.0 \pm 12.8*, 100
		14	0.86 \pm 0.16, 18	2.75 \pm 5.27, 192	1.68 \pm 1.40, 83	17.2 \pm 8.21*, 47
		28	0.84 \pm 0.29, 35	0.80 \pm 0.22, 28	1.54 \pm 0.99, 64	NA
	Females	0	1.08 \pm 0.24, 23	0.93 \pm 0.27, 29	1.11 \pm 0.27, 25	0.96 \pm 0.24, 25
		2	0.93 \pm 0.29, 32	0.86 \pm 0.23, 27	0.86 \pm 0.27, 31	2.70 \pm 1.43, 53
		4	1.01 \pm 0.23, 23	0.91 \pm 0.26, 29	3.29 \pm 5.62, 171	19.4 \pm 15.7*, 81
		14	0.89 \pm 0.20, 23	0.95 \pm 0.35, 37	1.56 \pm 1.63, 104	17.8 \pm 10.0*, 56
		28	0.71 \pm 0.24, 34	0.68 \pm 0.15, 23	1.04 \pm 0.78, 74	NA
Clusterin (ng/mg Cr)	Males	0	7.56 \pm 2.48, 33	7.39 \pm 1.66, 23	8.00 \pm 1.76, 22	9.27 \pm 1.80, 19
		2	6.49 \pm 1.03, 16	5.51 \pm 1.20, 22	7.79 \pm 4.22, 54	31.0 \pm 13.8, 44
		4	8.29 \pm 1.59, 19	7.84 \pm 2.90, 37	12.9 \pm 5.88, 46	54.2 \pm 29.9, 54
		14	9.25 \pm 2.61, 28	15.2 \pm 19.1, 126	19.7 \pm 26.7, 135	255 \pm 125*, 49
		28	8.48 \pm 2.21, 26	6.11 \pm 1.32, 22	14.8 \pm 12.3, 83	NA
	Females	0	4.72 \pm 0.71, 15	5.53 \pm 1.50, 27	5.64 \pm 1.35, 24	7.75 \pm 1.25, 16
		2	3.96 \pm 1.10, 28	2.78 \pm 1.09, 39	3.12 \pm 1.39, 45	52.0 \pm 34.3, 66
		4	6.22 \pm 1.84, 30	4.23 \pm 1.14, 27	14.9 \pm 17.5, 117	85.7 \pm 47.1, 55
		14	5.61 \pm 1.80, 32	4.38 \pm 1.32, 30	5.45 \pm 4.02, 74	192 \pm 104*, 55
		28	5.05 \pm 1.61, 32	3.62 \pm 0.86, 24	9.50 \pm 9.90, 104	NA
Albumin (μ g/mg Cr)	Males	0	37.3 \pm 12.7, 34	37.9 \pm 12.1, 32	31.3 \pm 7.36, 24	55.6 \pm 11.8, 21
		2	45.4 \pm 25.7, 57	39.6 \pm 15.6, 39	49.1 \pm 37.8, 77	158 \pm 52.3, 33
		4	44.9 \pm 14.8, 33	57.7 \pm 41.6, 72	63.2 \pm 36.9, 58	146 \pm 52.3, 36
		14	29.5 \pm 5.78, 20	38.2 \pm 14.5, 38	50.3 \pm 34.1, 68	238 \pm 124*, 52
		28	38.5 \pm 11.9, 31	35.3 \pm 16.3, 46	37.7 \pm 18.4, 49	NA
	Females	0	10.4 \pm 2.74, 26	13.8 \pm 2.53, 18	15.1 \pm 3.63, 24	20.4 \pm 6.21, 30
		2	8.78 \pm 1.01, 11	12.1 \pm 2.83, 23	19.8 \pm 11.2, 57	234 \pm 106*, 45
		4	14.5 \pm 4.15, 29	15.5 \pm 3.84, 25	33.3 \pm 32.1, 96	192 \pm 102*, 53
		14	13.8 \pm 5.16, 37	13.1 \pm 3.56, 27	22.8 \pm 19.1, 84	136 \pm 37.2*, 32
		28	12.4 \pm 2.77, 22	13.1 \pm 3.09, 23	33.2 \pm 27.7, 83	NA
Osteopontin (ng/mg Cr)	Males	0	2.01 \pm 0.79, 39	2.00 \pm 0.88, 44	2.20 \pm 1.20, 46	1.35 \pm 0.32, 23
		2	2.12 \pm 1.33, 63	1.99 \pm 0.81, 41	3.01 \pm 1.39, 46	5.22 \pm 2.71, 52
		4	1.75 \pm 0.49, 28	2.03 \pm 0.39, 19	3.37 \pm 1.68, 50	3.48 \pm 1.19, 34

Osteopontin (ng/mg Cr)		14	1.97 ± 0.42, 21	2.20 ± 0.56, 26	3.00 ± 2.61, 87	7.21 ± 6.41*, 89
		28	1.99 ± 0.66, 33	1.85 ± 0.60, 33	2.80 ± 2.07, 74	NA
	Females	0	2.75 ± 1.44, 52	3.39 ± 2.51, 74	3.30 ± 1.96, 59	3.55 ± 0.99, 28
		2	2.92 ± 1.63, 56	3.15 ± 2.42, 77	5.02 ± 3.12, 62	26.4 ± 15.8*, 59
		4	3.77 ± 2.18, 58	4.18 ± 3.04, 73	6.79 ± 5.11, 75	16.1 ± 7.51, 46
		14	3.32 ± 2.21, 66	3.92 ± 2.71, 69	6.76 ± 9.89, 146	26.9 ± 7.82*, 29
		28	2.92 ± 2.04, 70	3.21 ± 1.95, 61	6.60 ± 7.33, 111	NA
Alpha-GST (ng/mg Cr)	Males	0	99.6 ± 31.8, 32	93.9 ± 33.6, 36	108 ± 46.8, 43	172 ± 63.1, 36
		2	105 ± 33.0, 31	75.7 ± 24.2, 32	77.7 ± 38.4, 49	121 ± 43.1, 36
		4	100 ± 26.2, 26	105 ± 40.3, 38	107 ± 38.6, 36	102 ± 70.1, 68
		14	104 ± 33.7, 32	108 ± 52.3, 48	161 ± 129, 80	25.4 ± 28.7*, 128
		28	98.9 ± 27.6, 28	101 ± 24.0, 24	74.6 ± 34.1, 46	NA
GST-Yb1 (ng/mg Cr)	Males	0	20.9 ± 5.06, 24	19.0 ± 8.64, 45	14.2 ± 6.24, 44	25.1 ± 6.68, 26
		2	24.2 ± 9.46, 39	17.6 ± 8.89, 51	17.4 ± 15.4, 88	21.2 ± 9.38, 44
		4	17.5 ± 7.17, 41	31.9 ± 25.4, 80	17.8 ± 10.3, 58	42.1 ± 33.2, 79
		14	18.1 ± 5.49, 30	22.0 ± 12.1, 55	25.7 ± 15.3, 60	28.4 ± 10.3, 36
		28	16.5 ± 5.50, 33	17.9 ± 3.74, 21	14.0 ± 8.13, 58	NA

The data are presented as mean ± SD for 8 animals.

CV = coefficients of variation.

#Significant difference of blood BUN and Cr levels between control and treatment group at the end of study.

*Significantly different from urinary samples of day 0 within each dose group.