Figure 4

Distribution and number of immunoreactive cells for interneuronal markers and a mature neuronal marker in the hilus of the hippocampal dentate gyrus of male PND 21 and PND 77 offspring exposed to T-2 toxin. (a) Reelin. (b) Parvalbumin (PVALB). (c) Calbindin (CALB1), arrowheads indicate immunoreactive cells. (d) Calretinin (CALB2). (e) NeuN. Representative images from 0-ppm controls and the 9-ppm group at PND 21 are shown. Magnification: 200×; bar = 100 μm. Graphs show the number of immunoreactive cells/unit area (mm^2) of the hilus of bilateral hemispheres. Values are expressed as the mean + SD. N = 9–10/group (0 ppm controls, 9; 1, 3, and 9 ppm T-2 toxin, 10). * $P < 0.05$, significantly different from 0-ppm controls by the Dunnett's test or Steel's test

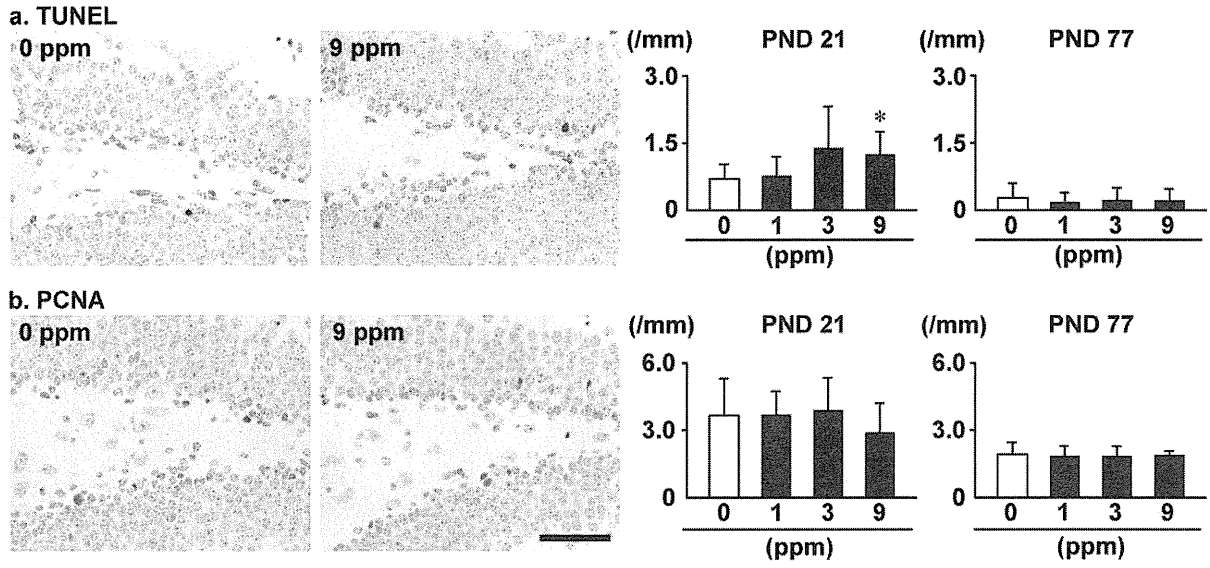

Figure 5

Distribution and number of apoptotic and proliferating cells in the SGZ of the hippocampal dentate gyrus of male PND 21 and PND 77 offspring exposed to T-2 toxin. (a) Terminal deoxynucleotidyl transferase dUTP nick-end labeling (TUNEL). (b) Proliferating cell nuclear antigen (PCNA). Representative images from 0-ppm controls and the 9-ppm group at PND 21 are shown. Magnification: 400×; bar = 50 μm. Graphs show the number of immunoreactive cells/unit length (mm) of the SGZ of the bilateral sides. Values are expressed as the mean + SD. N = 9–10/group (0 ppm controls, 9; 1, 3 and 9 ppm T-2 toxin, 10). * $P < 0.05$, significantly different from 0-ppm controls by the Dunnett's test or Steel's test

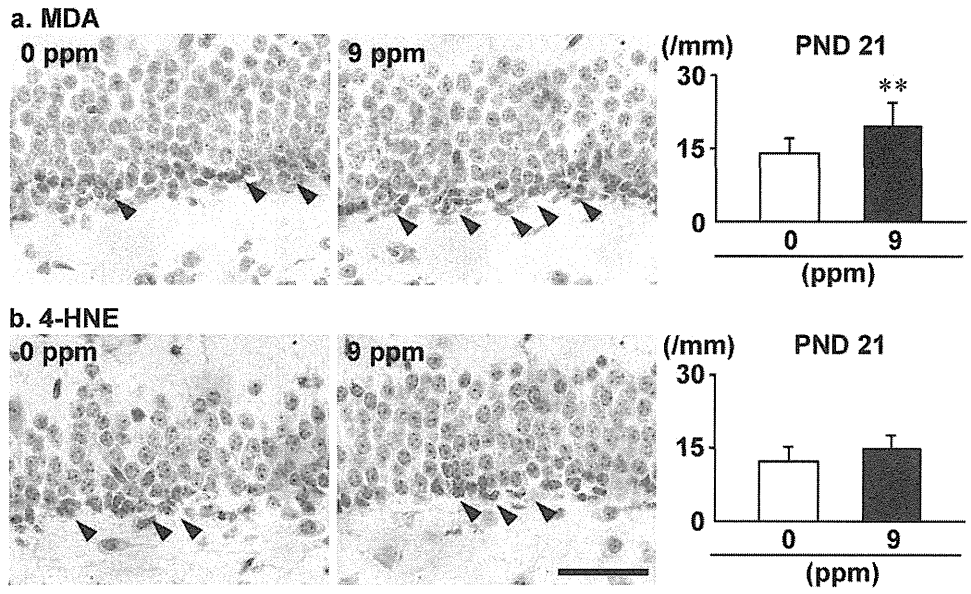

Figure 6

Distribution and number of immunoreactive cells for lipid peroxidation end products in the SGZ of the hippocampal dentate gyrus of male PND 21 offspring exposed to T-2 toxin. (a) Malondialdehyde (MDA). (b) 4-Hydroxynonenal (4-HNE). Representative images from 0-ppm controls and the 9-ppm group at PND 21 are shown. Arrowheads indicate immunoreactive cells. Magnification: 600×; bar = 40 μm. Graphs show the number of immunoreactive cells/unit length (mm) of the SGZ of the bilateral sides. Values are expressed as the mean + SD. N = 9–10/group (0 ppm controls, 9; 9 ppm T-2 toxin, 10). $^{**}P < 0.01$, significantly different from 0-ppm controls by the Student's *t*-test or Aspin-Welch's *t*-test

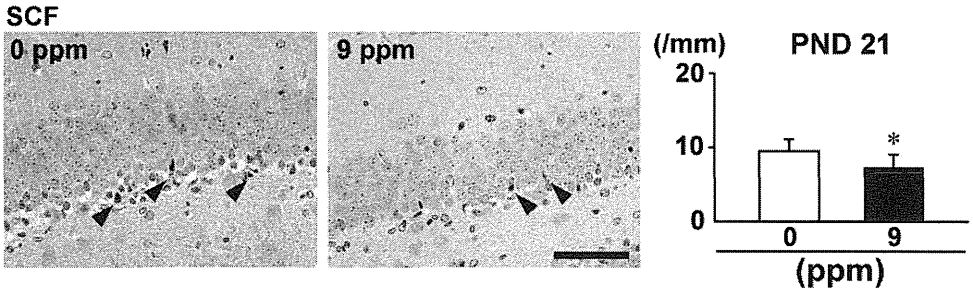

Figure 7

Distribution and number of immunoreactive cells for stem cell factor (SCF) in the SGZ of the hippocampal dentate gyrus of male PND 21 offspring exposed to T-2 toxin. Representative images from 0-ppm controls and the 9-ppm group at PND 21 are shown. Arrowheads indicate immunoreactive cells. Magnification: 400×; bar = 50 μm. Graphs show the number of immunoreactive cells/unit length (mm) of the SGZ of the bilateral sides. Values are expressed as mean + SD. N = 9–10/group (0 ppm

controls, 9; 9 ppm T-2 toxin, 10). *$P < 0.05$, significantly different from 0-ppm controls by the Student's *t*-test or Aspin-Welch's *t*-test

Table 5

Transcript levels in the hippocampal dentate gyrus of PND 21 offspring exposed to T-2 toxin

		T-2 toxin in diet (ppm)			
		0 (Control)	1	3	9
No. of animals examined		6	6	6	6
Neuronal stage-defining markers of granule cell lineages					
Pax6	*Hprt* [a]	1.01 ± 0.13 [b]	1.47 ± 0.94	1.20 ± 0.31	1.39 ± 0.28*
	Gapdh [c]	1.03 ± 0.24	1.47 ± 0.74	1.12 ± 0.40	1.75 ± 0.97
Eomes	*Hprt*	1.02 ± 0.25	1.47 ± 0.77	1.34 ± 0.45	1.85 ± 0.96
	Gapdh	1.02 ± 0.26	1.60 ± 0.61	1.32 ± 0.51	2.17 ± 1.07*
Dcx	*Hprt*	1.05 ± 0.33	1.25 ± 0.29	1.37 ± 0.19	2.19 ± 1.81
	Gapdh	1.03 ± 0.26	1.35 ± 0.63	1.27 ± 0.32	2.01 ± 0.97 *
Interneuron subpopulations					
Reln	*Hprt*	1.11 ± 0.53	1.19 ± 0.68	1.51 ± 0.47	1.86 ± 0.79*
	Gapdh	1.09 ± 0.50	1.32 ± 0.88	1.40 ± 0.54	2.46 ± 1.71*
Intrinsic pathway of apoptosis					
Bax	*Hprt*	1.00 ± 0.09	0.90 ± 0.08	1.20 ± 0.11	1.22 ± 0.38
	Gapdh	1.01 ± 0.16	1.22 ± 0.20	1.64 ± 0.25*	1.56 ± 0.55*
Stem cell regulators					
Kitl	*Hprt*	1.03 ± 0.29	0.65 ± 0.19	0.72 ± 0.25	0.51 ± 0.22*
	Gapdh	1.06 ± 0.41	0.66 ± 0.19	0.63 ± 0.18	0.56 ± 0.15*
Glutamate transporters and receptors					
Slc17a6	*Hprt*	1.00 ± 0.09	0.81 ± 0.15	0.86 ± 0.37	0.55 ± 0.36*
	Gapdh	1.01 ± 0.19	0.83 ± 0.13	0.76 ± 0.33*	0.61 ± 0.37*
Gria2	*Hprt*	1.02 ± 0.24	0.92 ± 0.10	1.14 ± 0.16	0.42 ± 0.28*
	Gapdh	1.02 ± 0.20	0.95 ± 0.14	1.05 ± 0.23	0.43 ± 0.10**
Grin2a	*Hprt*	1.03 ± 0.28	0.92 ± 0.39	1.27 ± 0.40	1.43 ± 0.48
	Gapdh	1.02 ± 0.21	0.88 ± 0.38	1.17 ± 0.44	1.57 ± 0.83*
Cholinergic receptors					
Chrna4	*Hprt*	1.01 ± 0.14	0.74 ± 0.16	0.79 ± 0.38	0.47 ± 0.34*
	Gapdh	1.02 ± 0.23	0.70 ± 0.15	0.69 ± 0.27	0.48 ± 0.29*
Chrnb2	*Hprt*	1.01 ± 0.11	0.90 ± 0.16	0.80 ± 0.34*	0.58 ± 0.30*
	Gapdh	1.01 ± 0.18	0.82 ± 0.11	0.79 ± 0.23	0.63 ± 0.19*

Abbreviations: *Bax*, Bcl2-associated X protein; *Chrna4*, cholinergic receptor, nicotinic, alpha polypeptide 4; *Chrnb2*, cholinergic receptor, nicotinic, beta polypeptide 2 (neuronal); *Dcx*, doublecortin; *Eomes (Tbr2)*, eomesodermin homolog; *Gapdh*, glyceraldehyde 3-phosphate dehydrogenase; *Gria2*, glutamate receptor, ionotropic, AMPA2 (alpha 2); *Grin2a*, glutamate receptor, ionotropic, NMDA2A (epsilon 1); *Hprt*, hypoxanthine phosphoribosyltransferase; *Kitl*, kit ligand; *Pax6*, paired box 6; *Reln*, reelin; *Slc17a6*, solute carrier family 17 (sodium-dependent inorganic phosphate cotransporter), member 6.

[a] Relative expression normalized to *Hprt*.

[b] Mean ± SD.

[c] Relative expression normalized to *Gapdh*.

*$P < 0.05$, significantly different from 0-ppm controls by the Student's *t*-test or Aspin-Welch's *t*-test.

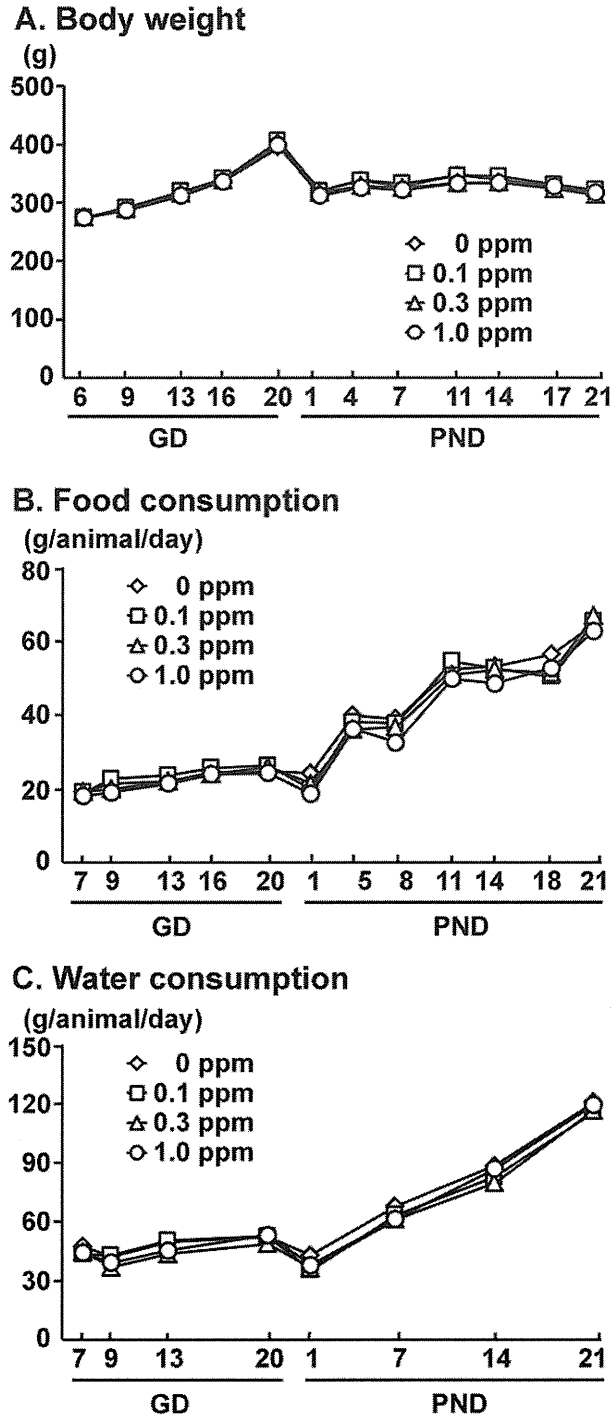

Figure 8

In life parameters of dams exposed to aflatoxin B_1 from GD 6 to PND 21 on weaning of offspring.

(A) Body weight. (B) Food consumption. (C) Water consumption. Mean values are plotted. N = 10–12/group (0 ppm controls, 10; 0.1 ppm AFB_1, 11; 0.3, and 1.0 ppm AFB_1, 12).

Table 6

Body weight changes of male offspring exposed to aflatoxin M_1

	AFB_1 in diet (ppm)			
	0 (Control)	0.1	0.3	1.0
No. of offspring examined	10	11	12	12
PND 1	7.8±0.7[a]	7.6±0.5	7.6±0.7	7.7±0.8
PND 4	11.7±0.9	11.3±0.7	11.0±1.2	11.1±1.0
PND 7	19.2±1.2	18.8±0.9	18.4±1.7	18.5±1.5
PND 11	30.5±2.1	29.7±1.6	28.9±2.0	28.3±2.0
PND 14	38.7±2.8	38.0±1.8	37.0±2.5	36.8±2.5*
PND 18	50.3±4.1	48.1±2.9	47.8±2.7	47.7±2.9
PND 21	64.5±5.0	63.0±3.4	61.9±3.6	60.7±4.6
No. of offspring examined	29	31	31	31
PND 28	108.6±9.6	108.1±5.9	107.0±7.6	106.2±6.9
PND 35	169.6±15.5	171.0±9.2	171.0±12.1	168.5±12.2
PND 42	235.0±20.8	239.7±14.6	239.9±17.7	237.0±18.6
PND 49	305.6±27.3	311.0±23.6	313.3±22.2	315.1±26.0
PND 56	363.3±27.7	370.4±28.3	371.7±25.4	374.2±31.6
PND 63	401.2±33.6	411.2±33.1	410.0±28.2	414.5±36.0
PND 70	439.2±37.6	451.6±37.1	450.2±32.7	458.2±41.4
PND 77	464.1±40.0	475.9±31.6	472.9±36.4	483.4±46.2

Abbreviations: AFB_1, aflatoxin B_1; PND, postnatal day.

[a] Mean ± S.D.

*$P < 0.05$, significantly different from 0-ppm controls by the Dunnett's test or Steel's test.

Table 7

Body weight changes of female offspring exposed to aflatoxin M_1

	AFB_1 in diet (ppm)			
	0 (Control)	0.1	0.3	1.0
No. of offspring examined	10	11	12	12
PND 1	7.5±0.5 [a]	7.2±0.5	7.1±0.8	7.4±0.7
PND 4	11.5±1.0	10.7±1.1	10.7±1.1	11.0±0.9
PND 7	18.7±1.4	17.9±2.0	17.7±1.6	18.0±1.0
PND 11	29.7±2.2	28.6±2.7	28.0±2.1	27.8±1.5
PND 14	37.8±2.7	37.2±1.8	35.8±2.4	36.0±1.6
PND 18	48.9±3.8	47.0±2.4	46.5±3.3	46.7±2.1
PND 21	61.8±4.9	60.4±2.9	59.7±4.4	59.6±3.5
No. of offspring examined	10	10	10	10
PND 28	101.2±4.0	96.9±4.5	97.0±6.6	98.3±7.4
PND 35	150.9±5.8	144.2±7.1	144.5±8.8	145.2±9.4
PND 42	187.6±9.4	182.8±9.9	181.8±10.9	182.3±12.5
PND 49	219.8±12.6	212.7±10.2	226.1±33.0	219.8±16.7
PND 56	247.9±15.1	240.1±12.8	240.8±17.4	245.4±21.6
PND 63	263.6±17.9	252.4±13.7	254.7±20.6	263.2±23.8
PND 70	279.8±16.7	272.6±15.0	272.7±21.3	283.7±26.0
PND 77	292.9±17.9	285.2±16.2	280.8±23.8	293.6±28.0

Abbreviations: AFB_1, aflatoxin B_1; PND, postnatal day.

[a] Mean ± S.D.

Table 8

Reproductive parameters, body and organ weights of dams exposed to aflatoxin B_1 from early gestation to the end of lactation

		AFB_1 in diet (ppm)			
		0 (Control)	0.1	0.3	1.0
No. of dams examined		10	11	12	12
Reproductive parameters					
No. of implantation sites		12.5±1.6[a]	13.4±1.4	13.9±1.4	13.6±1.8
No. of live offspring (PND 0)		12.0±2.0	13.1±1.8	13.4±2.1	12.7±1.8
Body and organ weights at PND 22					
Body weight (g)		315.3±18.8	322.2±23.8	313.4±21.2	314.8±16.2
Brain weight	Absolute (g)	1.98±0.09	1.98±0.09	2.01±0.08	1.99±0.10
	Relative (g/100g BW)	0.63±0.04	0.62±0.04	0.64±0.04	0.63±0.04
Liver weight	Absolute (g)	13.63±1.50	14.75±1.13	14.53±1.51	15.18±1.08**
	Relative (g/100g BW)	4.34±0.54	4.58±0.25	4.63±0.32	4.82±0.20**
AFB_1 intake (μg/kg BW/day)					
Gestation period		0	7.1±0.6	20.7±1.2	66.7±5.7
Postnatal period		0	13.6±1.0	41.7±2.8	132.7±7.5

Abbreviations: AFB_1, aflatoxin B_1; BW, body weight; PND, postnatal day.

[a] Mean ± SD.

**$P < 0.01$, significantly different from 0-ppm controls by the Dunnett's test or Steel's test.

Table 9

Body and organ weights at the prepubertal and terminal necropsies of offspring exposed to aflatoxin M_1 during gestation and lactation

		AFB_1 in diet (ppm)			
		0 (Control)	1	3	9
Male offspring on PND 21					
	No. of animals examined	10	11	12	12
Body weight (g)		60.9±5.2 [a]	62.1±4.6	61.0±5.6	59.6±4.6
Brain weight	Absolute (g)	1.53±0.05	1.55±0.04	1.52±0.06	1.52±0.05
	Relative (g/100g BW)	2.53±0.17	2.50±0.15	2.51±0.17	2.56±0.14
Liver weight	Absolute (g)	2.43±0.25	2.48±0.29	2.51±0.30	2.20±0.18
	Relative (g/100g BW)	3.97±0.26	4.02±0.17	4.02±0.25	3.78±0.23
Female offspring on PND 21					
	No. of animals examined	10	11	12	12
Body weight (g)		62.5±7.1	60.4±3.4	59.5±5.4	59.7±3.7
Brain weight	Absolute (g)	1.48±0.07	1.47±0.05	1.49±0.06	1.47±0.07
	Relative (g/100g BW)	2.47±0.19	2.44±0.15	2.53±0.19	2.48±0.11
Male offspring on PND 77					
	No. of animals examined	11	11	12	12
Body weight (g)		467.3±36.3	474.8±30.2	479.4±37.6	485.3±48.5
Brain weight	Absolute (g)	2.06±0.05	2.11±0.16	2.09±0.07	2.10±0.09
	Relative (g/100g BW)	0.44±0.03	0.44±0.05	0.44±0.03	0.44±0.03
Liver weight	Absolute (g)	19.05±2.37	18.82±1.74	19.08±1.86	18.37±1.45
	Relative (g/100g BW)	4.04±0.29	3.97±0.21	4.00±0.26	3.96±0.16
Female offspring on PND 77					
	No. of animals examined	10	10	10	10
Body weight (g)		292.9±17.9	285.2±16.2	280.8±23.8	293.6±28.0
Brain weight	Absolute (g)	1.98±0.10	1.95±0.06	1.96±0.10	1.92±0.08
	Relative (g/100g BW)	0.68±0.04	0.68±0.04	0.70±0.05	0.66±0.05

Abbreviations: AFB_1, aflatoxin B_1; BW, body weight; PND, postnatal day.

[a] Mean ± SD.

Table 10

Histopathological findings of dams and their offspring exposed to aflatoxin B_1 from gestation day 6 to day 21 after delivery

	AFB_1 in diet (ppm)			
	0 (Control)	0.1	0.3	1.0
Dams				
No. of animals examined	10	10	10	10
Brain and liver				
Abnormalities detected	0 [a]	0	0	0
Male offspring on PND 21				
No. of animals examined	10	10	10	10
Brain and liver				
Abnormalities detected	0	0	0	0
Female offspring on PND 21				
No. of animals examined	10	10	10	10
Brain				
Abnormalities detected	0	0	0	0
Male offspring on PND 77				
No. of animals examined	10	10	10	10
Brain and liver				
Abnormalities detected	0	0	0	0
Female offspring on PND 77				
No. of animals examined	10	10	10	10
Brain				
Abnormalities detected	0	0	0	0

Abbreviations: AFB_1, aflatoxin B_1; PND, postnatal day.

[a] Total number of animals which exhibited abnormality.

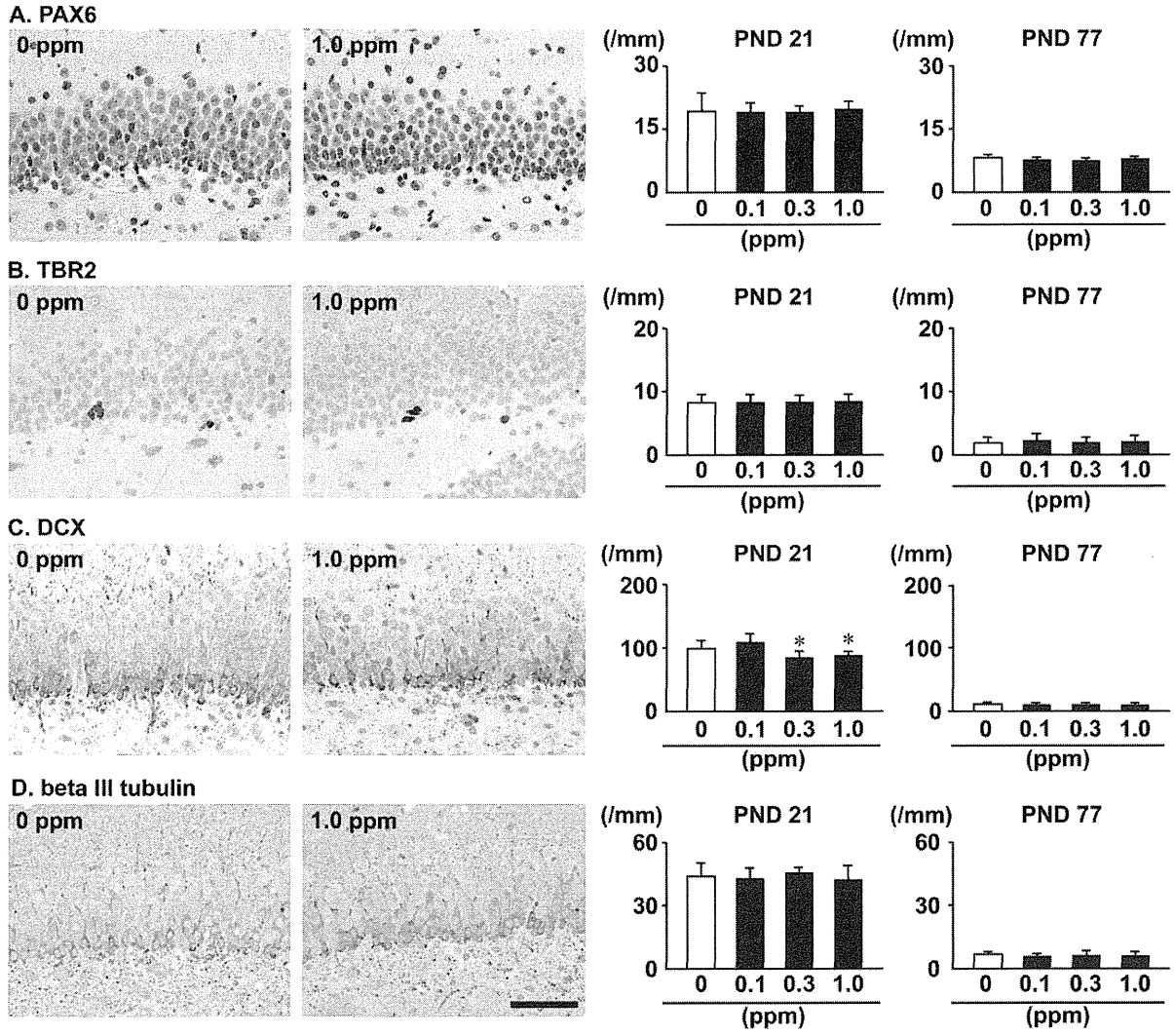

Figure 9

Distribution and number of immunoreactive cells for neuronal stage-defining markers of granule cell lineages in the SGZ of the hippocampal dentate gyrus of male PND 21 and PND 77 offspring exposed to Aflatoxin M_1. (A) PAX6, (B) TBR2, (C) DCX, (D) beta III tubulin. Representative images from 0-ppm controls and the 1.0-ppm group at PND 21 are shown. Magnification: 400×; bar = 50 μm. Graphs show the number of immunoreactive cells/unit length (mm) of the SGZ of the bilateral sides. Values are expressed as mean + SD. N = 10/group. * $P < 0.05$, significantly different from 0-ppm controls by the Dunnett's test or Steel's test.

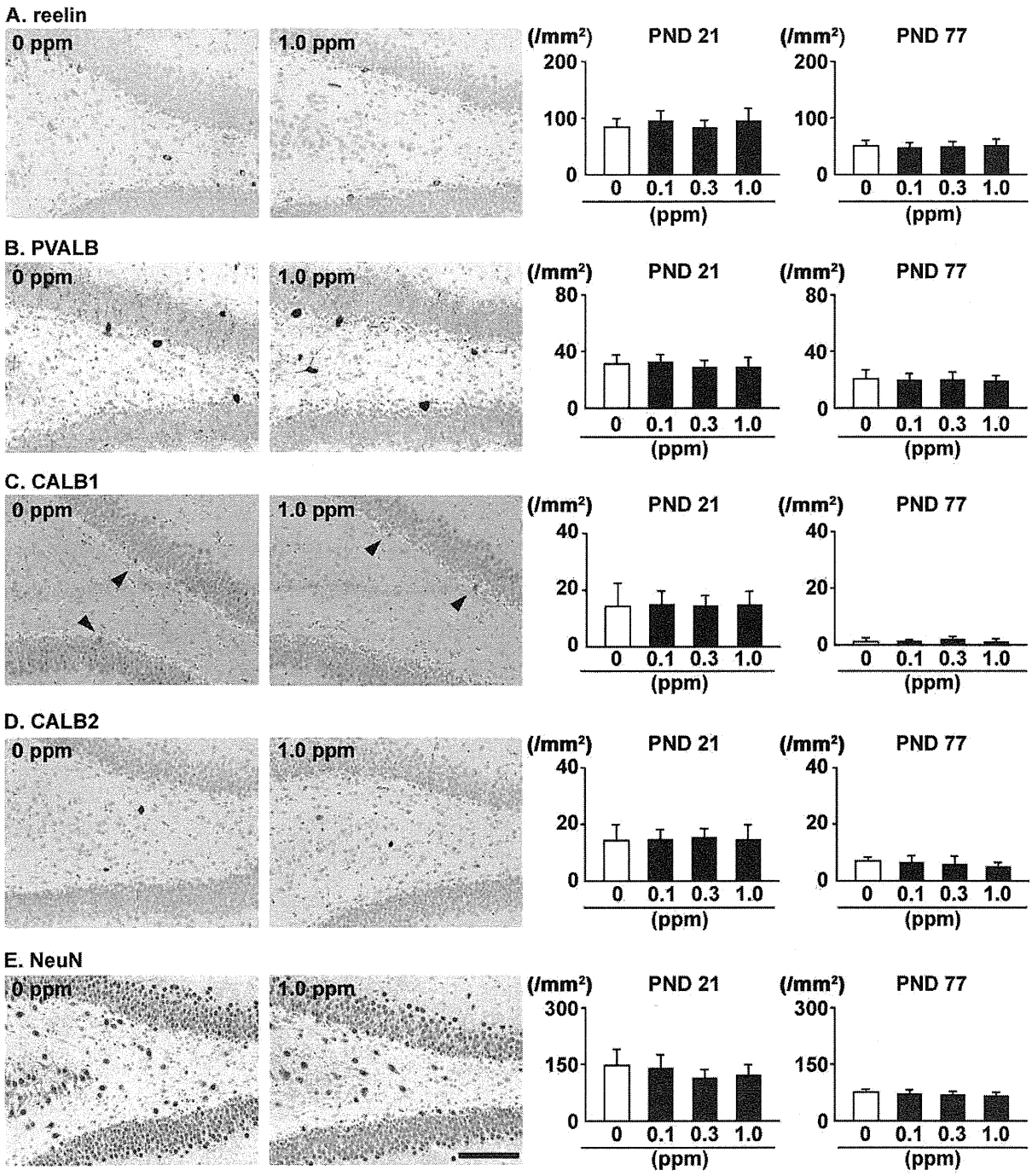

Figure 10

Distribution and number of immunoreactive cells for interneuronal markers and a mature neuronal marker in the hilus of the hippocampal dentate gyrus of male PND 21 and PND 77 offspring exposed to Aflatoxin M_1. (A) reelin. (B) PVALB. (C) CALB1. (D) CALB2. (E) NeuN. Representative images from 0-ppm controls and the 1.0-ppm group at PND 21 are shown. Magnification: 200×; bar = 100 μm. Graphs show the number of immunoreactive cells/unit area (mm^2) of the hilus of bilateral hemispheres. Values are expressed as the mean + SD. N = 10/group.

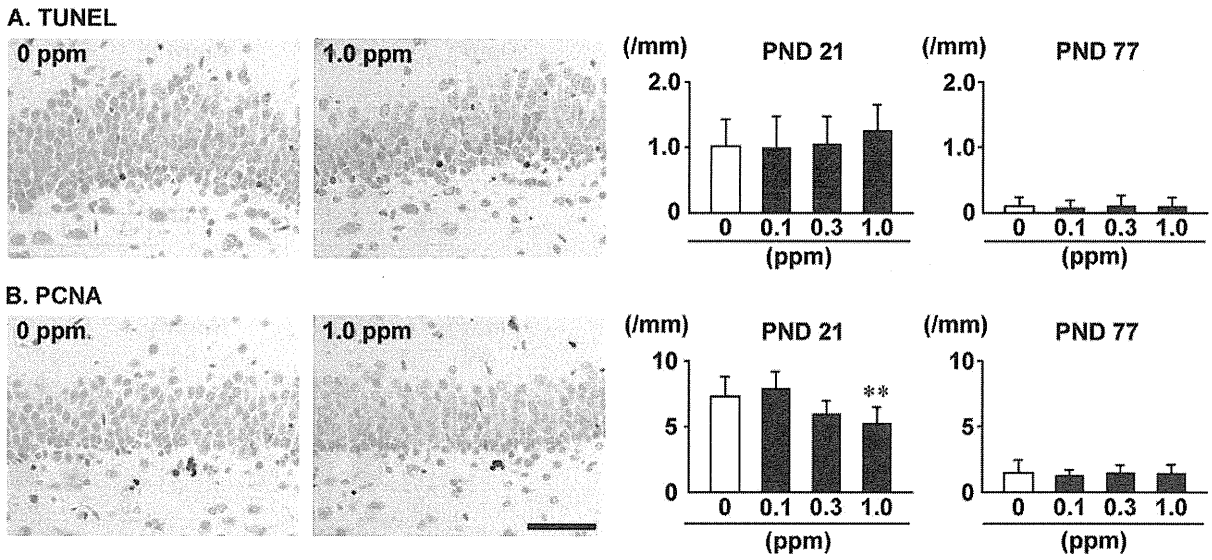

Figure 11

Distribution and number of apoptotic and proliferating cells in the SGZ of the hippocampal dentate gyrus of male PND 21 and PND 77 offspring exposed to Aflatoxin M_1. (A) TUNEL. (B) PCNA. Representative images from 0-ppm controls and the 1.0-ppm group at PND 21 are shown. Magnification: 400×; bar = 50 μm. Graphs show the number of immunoreactive cells/unit length (mm) of the SGZ of the bilateral sides. Values are expressed as the mean + SD. N = 10/group. ** $P < 0.01$, significantly different from 0-ppm controls by the Dunnett's test or Steel's test.

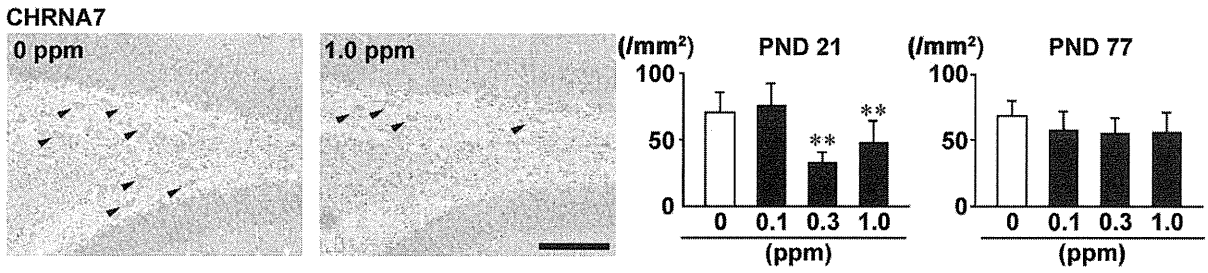

Figure 12

Distribution and number of immunoreactive cells for cholinergic receptor, nicotinic, alpha 7 (CHRNA7) in the hilus of the hippocampal dentate gyrus of male PND 21 and PND 77 offspring exposed to Aflatoxin M_1. Representative images from 0-ppm controls and the 1.0-ppm group at PND 21 are shown. Arrowheads indicate immunoreactive cells. Magnification: 200×; bar = 100 μm. Graphs show the number of immunoreactive cells/unit area (mm^2) of the hilus of bilateral hemispheres. Values are expressed as the mean + SD. N = 10/group. ** $P < 0.01$, significantly different from 0-ppm controls by the Dunnett's test or Steel's test.

Table 11

Transcript levels in the hippocampal dentate gyrus of PND 21 offspring exposed to Aflatoxin M_1

	AFB_1 in diet (ppm)			
	0 (Control)		1.0	
	Relative transcript level normalized to		Relative transcript level normalized to	
	Gapdh	*Hprt1*	*Gapdh*	*Hprt1*
No. of animals examined	6	6	6	6
Neuronal stage-defining markers in granule cell lineages				
Dcx	1.05±0.36 [a]	1.03±0.45	1.06±0.41	0.99±0.38
Dpysl3	1.02±0.24	1.08±0.59	1.02±0.19	1.10±0.63
Rbfox3	1.08±0.42	1.08±0.44	1.01±0.38	0.99±0.32
Cell proliferation				
Pcna	1.01±0.13	1.01±0.13	0.86±0.17	0.87±0.23
Choline synthesizing enzyme and cholinergic receptors				
Chat	1.03±0.28 [a]	1.08±0.52	3.24±3.13*	2.54±2.16
Chrna7	1.04±0.27	1.04±0.28	0.75±0.28	0.73±0.21*
Chrnb2	1.05±0.37	1.02±0.26	1.21±0.47	1.28±0.75
DNA repair				
Apex1	1.00±0.09	1.00±0.08	0.96±0.24	0.96±0.29
Brip1	1.01±0.20	1.02±0.21	0.87±0.13	0.89±0.32
Chek1	1.02±0.22	1.03±0.23	1.52±0.78	1.47±0.71
Ercc1	1.02±0.21	1.02±0.19	0.99±0.17	1.01±0.25
Ogg1	1.00±0.10	1.01±0.12	0.89±0.20	0.89±0.19
Sirt1	1.01±0.14	1.00±0.07	1.05±0.20	1.08±0.33
Wee1	1.01±0.14	1.00±0.07	0.86±0.13	0.86±0.19
Xrcc5	1.00±0.11	1.00±0.07	0.93±0.20	0.92±0.14

Abbreviations: AFB_1, Aflatoxin B_1; *Apex1*, APEX nuclease (multifunctional DNA repair enzyme) 1; *Brip1*, BRCA1 interacting protein C-terminal helicase 1; *Chat*, choline O-acetyltransferase; *Chek1*, checkpoint kinase 1; *Chrna7*, cholinergic receptor, nicotinic, alpha polypeptide 7; *Chrnb2*, cholinergic receptor, nicotinic, beta polypeptide 2 (neuronal); *Dcx*, doublecortin; *Dpysl3*, dihydropyrimidinase-like 3; *Ercc1*, excision repair cross-complementation group 1; *Gapdh*, glyceraldehyde 3-phosphate dehydrogenase; *Hprt1*, hypoxanthine phosphoribosyltransferase 1; *Ogg1*, 8-oxoguanine DNA glycosylase; *Pcna*, proliferating cell nuclear antigen;*Rbfox3*, RNA binding protein, fox-1 homolog (C. elegans) 3; *Sirt1*, sirtuin 1; *Wee1*, WEE1 G2 checkpoint kinase; *Xrcc5*, X-ray repair complementing defective repair in Chinese hamster cells 5.

[a] Mean ± SD.

*$P < 0.05$, significantly different from 0-ppm controls by the Student's *t*-test or Aspin-Welch's *t*-test.

Table 12

Transcript levels in the liver of dams exposed to Aflatoxin B_1 and PND 21 offspring exposed to Aflatoxin M_1

	AFB_1 in diet (ppm)			
	0 (Control)	0.1	0.3	1.0
Dams				
No. of animals examined	6	6	6	6
Cytochrome P450 enzymes and glutathione S-transferases				
Cyp1a2	1.01±0.19	0.83±0.14	1.00±0.20	1.43±0.14**
Cyp3a1	1.02±0.21	1.12±0.26	1.32±0.44	1.38±0.29
Gsta5	1.00±0.09	0.91±0.10	1.07±0.23	1.08±0.24
Male offspring on PND 21				
No. of animals examined	6	6	6	6
Cytochrome P450 enzymes and glutathione S-transferases				
Cyp1a2	1.05±0.22	0.96±0.39	1.12±0.28	1.08±0.45
Cyp3a2	1.04±0.32	1.31±0.36	1.13±0.28	1.56±0.37
Gsta5	1.05±0.33	1.09±0.44	1.09±0.44	0.96±0.28

Values are normalized to *Gapdh* as endogeneous control

Abbreviations: AFB_1, Aflatoxin B_1; *Cyp1a2*, cytochrome P450, family 1, subfamily a, polypeptide 2; *Cyp3a1*, cytochrome P450, family 3, subfamily a, polypeptide 1; *Cyp3a2*, cytochrome P450, family 3, subfamily a, polypeptide 2; *Gsta5*, glutathione S-transferase alpha 5

[a] Mean ± SD.

** $P < 0.01$, significantly different from 0-ppm controls by the Dunnett's test or Steel's test.

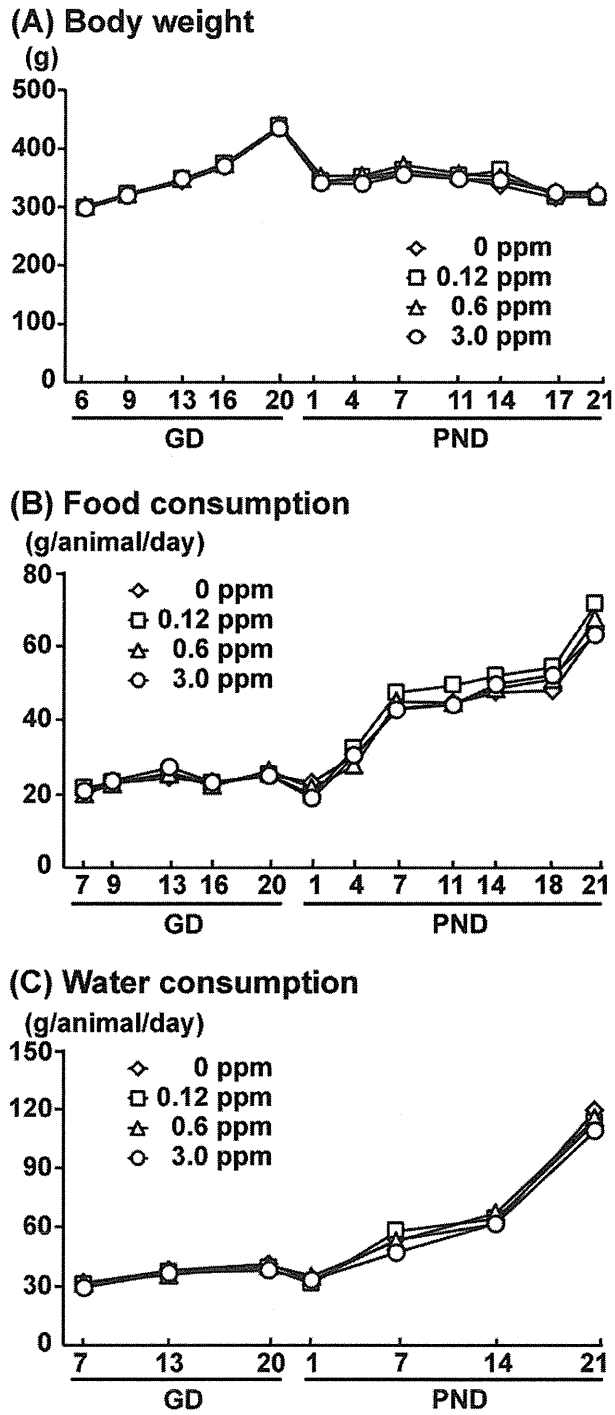

Figure 13

In life parameters of dams exposed to ochratoxin A from GD 6 to PND 21 on weaning of offspring.

(A) Body weight. (B) Food consumption. (C) Water consumption. Mean values are plotted. N = 11/group.

Table 13

Body weight changes of male offspring exposed to ochratoxin A

	OTA in diet (ppm)			
	0 (Control)	0.12	0.6	3.0
No. of offspring examined	11	11	11	11
PND 4	11.4±0.8[a]	11.7±1.0	11.4±1.3	10.8±0.7
PND 7	19.3±1.3	19.9±1.3	19.0±2.1	17.8±1.0
PND 11	29.9±1.5	31.2±2.1	30.3±2.8	28.5±1.4
PND 14	37.5±1.8	39.2±2.4	38.4±3.2	36.1±1.7
PND 18	48.0±3.2	50.7±3.3	49.3±4.5	46.6±2.3
PND 21	60.0±4.0	63.0±4.1	61.0±5.4	57.8±2.2
No. of offspring examined	27	27	27	27
PND 28	108.4±7.8	108.9±8.6	105.2±8.3	102.4±5.9*
PND 35	172.5±11.0	169.1±12.4	166.4±12.3	164.4±9.5*
PND 42	242.3±14.5	238.3±19.0	232.1±17.6	233.7±14.1
PND 49	297.3±18.2	295.5±22.5	286.1±20.4	290.8±17.0
PND 56	363.9±21.3	361.6±26.2	349.6±25.9	356.7±20.9
PND 63	418.6±24.6	419.5±32.4	404.3±29.8	413.0±25.8
PND 70	462.5±26.7	462.9±37.1	445.5±33.5	456.0±29.2
PND 77	489.4±28.5	491.2±37.5	469.4±34.9	482.6±34.3

Abbreviations: OTA, ochratoxin A; PND, postnatal day.

[a] Mean ± S.D.

*$P < 0.05$, significantly different from 0-ppm controls by the Dunnett's test or Steel's test.

Table 14

Body weight changes of female offspring exposed to ochratoxin A

	OTA in diet (ppm)			
	0 (Control)	0.12	0.6	3.0
No. of offspring examined	11	11	11	11
PND 4	11.0±1.1[a]	11.2±1.2	11.3±1.3	10.8±0.7
PND 7	18.4±1.1	19.1±1.6	19.0±1.9	17.8±1.0
PND 11	29.1±1.8	30.2±2.4	30.7±3.0	27.9±1.4
PND 14	36.7±1.9	37.8±2.6	38.3±3.2	35.5±1.7
PND 18	47.3±2.4	49.0±3.6	49.4±4.1	45.8±2.3
PND 21	57.5±4.0	59.6±4.2	60.1±4.9	56.4±2.2
No. of offspring examined	10	10	10	10
PND 28	99.6±5.3	100.1±7.6	101.5±8.9	93.2±2.8*
PND 35	147.7±8.6	147.0±10.4	145.7±12.6	138.6±7.1
PND 42	184.3±12.3	187.5±13.7	179.7±21.6	175.1±10.1
PND 49	208.4±13.6	212.6±14.9	204.1±15.6	200.9±16.0
PND 56	237.0±16.3	241.3±17.0	234.1±18.4	232.5±18.0
PND 63	257.0±21.2	264.8±20.4	258.3±20.1	258.0±21.5
PND 70	275.4±23.7	284.3±24.5	278.3±21.7	278.6±24.2
PND 77	286.9±27.2	299.0±24.2	290.8±22.5	293.8±32.8

Abbreviations: OTA, ochratoxin A; PND, postnatal day.

[a] Mean ± S.D.

*$P < 0.05$, significantly different from 0-ppm controls by the Dunnett's test or Steel's test.

Table 15

Reproductive parameters, body and organ weights of dams exposed to ochratoxin A from early gestation to the end of lactation

		OTA in diet (ppm)			
		0 (Control)	0.12	0.6	3.0
No. of dams examined		11	11	11	11
Reproductive parameters					
No. of implantation sites		14.3±2.1 [a]	14.4±1.7	15.0±1.9	15.4±1.6
No. of live offspring (PND 0)		13.4±2.5	13.4±1.9	13.1±3.9	13.5±2.4
Body and organ weights at PND 22					
Body weight (g)		319.5±16.3	315.9±28.9	324.5±28.7	320.6±21.5
Brain weight	Absolute (g)	1.90±0.09	1.96±0.08	1.98±0.12	1.97±0.08
	Relative (g/100g BW)	0.60±0.03	0.62±0.04	0.61±0.05	0.62±0.05
Kidney weight	Absolute (g)	2.08±0.12	1.99±0.16	2.09±0.14	1.97±0.16
	Relative (g/100g BW)	0.65±0.03	0.64±0.06	0.66±0.05	0.62±0.04
OTA intake (μg/kg BW/day)					
Gestation period		0	8.0±0.4	39.3±3.5	203.6±11.4
Postnatal period		0	16.1±1.3	76.0±9.0	378.6±29.0

Abbreviations: BW, body weight; OTA, ochratoxin A; PND, postnatal day.

[a] Mean ± SD.