



Supplementary

Genotoxicity of Aluminum and Aluminum Oxide Nanomaterials in Rats Following Oral Exposure

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Table S1. Equivalence between the doses administrated between mass and Al content.

Al form	6.25 mg/kg	12.5 mg/kg	25 mg/kg
Al ⁰ NMs	6.25 Al mg/kg	12.5 Al mg/kg	25 mg Al/kg
Al ₂ O ₃ NMs	3.31 mg Al/kg	6.625 Al mg/kg	13.25 mg Al/kg
AlCl ₃	0.69 mg Al/kg	1.375 mg Al/kg	2.75 mg Al/kg

Table S2: Percentage of hedgehogs scored on the comet slides without Fpg. Mean ± SD (n=5 animals per condition except for control duodenum n=4).

Tissue/organ	Control	Al ⁰			Al ₂ O ₃			AlCl ₃	MMS
Dose (mg/kg)		3 x 6.25	3 x 12.5	3 x 25	3 x 6.25	3 x 12.5	3 x 25	3 x 25	2 x 100 + 1 x 80
Duodenum	1.05 ± 1.09	0.0 ± 0.0	1.03 ± 1.67	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	2.03 ± 2.77	1.07 ± 1.68
Liver	1.40 ± 2.21	0.52 ± 0.72	2.58 ± 1.97	2.78 ± 3.43	1.82 ± 1.46	1.55 ± 1.68	1.29 ± 1.82	0.78 ± 1.16	0.52 ± 0.71
Kidney	4.19 ± 4.06	3.28 ± 3.03	6.76 ± 4.76	7.56 ± 2.92	6.71 ± 5.30	6.59 ± 6.14	3.04 ± 2.69	6.14 ± 3.65	1.04 ± 1.42
Spleen	1.53 ± 2.27	0.78 ± 1.16	0.26 ± 0.59	0.78 ± 1.16	2.62 ± 5.15	1.82 ± 1.46	2.26 ± 3.07	1.05 ± 1.09	6.11 ± 13.66
Bone marrow	0.2 ± 0.45	1.28 ± 2.19	1.80 ± 1.94	1.80 ± 2.12	4.68 ± 4.06	1.82 ± 1.46	2.74 ± 3.60	2.07 ± 1.46	5.50 ± 7.66
Blood	2.03 ± 2.59	1.55 ± 1.68	1.56 ± 1.40	0.26 ± 0.59	2.07 ± 1.46	0.53 ± 0.72	1.30 ± 1.57	1.82 ± 1.46	2.20 ± 4.37



Table S3: Percentage of hedgehogs scored on the comet slides with Fpg. Mean \pm SD (n=5 animals per condition).

Tissue/organ	Control	Al ⁰			Al ₂ O ₃			AlCl ₃	MMS
Dose (mg/kg)		3 x 6.25	3 x 12.5	3 x 25	3 x 6.25	3 x 12.5	3 x 25	3 x 25	2 x 100 + 1 x 80
Duodenum	2.75 \pm 4.26	0.52 \pm 1.16	0.26 \pm 0.59	0.52 \pm 0.16	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.39 \pm 0.88	100 \pm 0.0
Liver	8.03 \pm 16.49	2.14 \pm 1.50	1.03 \pm 1.67	1.03 \pm 1.67	0.77 \pm 1.72	2.26 \pm 3.13	3.03 \pm 2.99	2.81 \pm 2.21	100 \pm 0.0
Kidney	7.18 \pm 5.01	8.61 \pm 4.71	5.03 \pm 1.90	6.37 \pm 2.70	3.68 \pm 4.36	5.46 \pm 3.12	4.00 \pm 3.41	5.89 \pm 3.91	100 \pm 0.0
Spleen	0.52 \pm 1.16	0.80 \pm 0.84	0.53 \pm 0.72	0.53 \pm 0.72	1.48 \pm 3.31	2.05 \pm 2.30	1.29 \pm 1.82	0.78 \pm 1.16	100 \pm 0.0
Bone marrow	1.03 \pm 1.67	1.80 \pm 1.10	1.29 \pm 1.82	1.30 \pm 1.57	2.51 \pm 3.15	2.30 \pm 2.39	2.55 \pm 2.38	1.80 \pm 2.12	100 \pm 0.0
Blood	0.26 \pm 0.59	1.53 \pm 2.27	1.53 \pm 2.27	1.28 \pm 2.19	2.80 \pm 2.40	1.81 \pm 1.73	0.26 \pm 0.59	1.54 \pm 2.08	100 \pm 0.0