先生方からのコメント（実験動物）

資料2

通し No.		No.	エンドポイント		評価値算出機関	Title	年	著者	雑誌	
18	1	POD15	4	生殖・発生	ATSDR 2021	Effects of developmental exposure to perfluorooctanoic acid (PFOA) on long bone morphology and bone cell differentiation	2016	Koskela et al.	Toxicol Appl Pharmacol	
19	2	POD16	4	~~生殖~~・~~発生~~→代謝	ATSDR 2021 ANSES 2017	Evaluation of potential reproductive and developmental toxicity of potassium perfluorohexanesulfonate in Sprague Dawley rats	2009	Butenhoff et al.	Reprod Toxicol	
20	3	POD17	4	生殖・発生	EPA 2016 (PFOA) FSANZ 2017	Effects of perfluorooctanoic acid exposure during pregnancy in the mouse	2006	Lau et al.	Toxicol Sci	
21	4	POD18	4	生殖・発生	EPA 2016 (PFOS) ATSDR 2021 FSANZ 2017	Two-generation reproduction and cross-foster studies of perfluorooctanesulfonate (PFOS) in rats	2005	Luebker et al.	Toxicology	
22	5	1164	4	生殖・発生		Perfluorooctanoic acid induced developmental toxicity in the mouse is dependent on expression of peroxisome proliferator activated receptor-alpha	2007	Abbott et al.	Toxicol Sci	
23	6	1215	4	生殖・発生		Maternal exposure causes mitochondrial dysfunction in brain, liver, and heart of mouse fetus: An explanation for perfluorooctanoic acid induced abortion and developmental toxicity	2019	Salimi et al.	Environ Toxicol	
24	7	1227	4	生殖・発生	EPA 2016 (PFOA) FSANZ 2017	Developmental toxicity of perfluorooctanoic acid in the CD-1 mouse after cross-foster and restricted gestational exposures	2007	Wolf et al.	Toxicol Sci	
[redacted]			4	生殖・発生	EPA 2023 (PFOA)	Effects of perfluorooctanoic acid exposure during pregnancy on the reproduction and development of male offspring mice	2018	Song et al.	Andrologia	
25	8	1228	4	生殖・発生		Effects of perfluorooctanoic acid (PFOA) exposure to pregnant mice on reproduction	2010	Yahia et al.	J Toxicol Sci	
26	9	1229	4	生殖・発生		Neonatal death of mice treated with perfluorooctane sulfonate	2008	Yahia et al.	J Toxicol Sci	
27	10	1545	4	生殖・発生		Combined effects of perfluorooctane sulfonate (PFOS) and maternal restraint stress on hypothalamus adrenal axis (HPA) function in the offspring of mice	2010	Ribes et al.	Toxicol Appl Pharmacol	

通し No.		No.	エンドポイント		評価値算出機関	Title	年	著者	雑誌	[redacted]	[redacted]
28	11	1170	4	生殖・発生		Gestational and lactational exposure to potassium perfluorooctanesulfonate (K+PFOS) in rats: developmental neurotoxicity	2009	Butenhoff et al.	Reprod Toxicol		
29	12	1179	4	生殖・発生		Effects of prenatal perfluorooctane sulfonate (PFOS) exposure on lung maturation in the perinatal rat	2003	Grasty et al.	Birth Defects Res B Dev Reprod Toxicol		
30	13	1180	4	生殖・発生		Prenatal window of susceptibility to perfluorooctane sulfonate-induced neonatal mortality in the Sprague-Dawley rat	2003	Grasty et al.	Birth Defects Res B Dev Reprod Toxicol		
31	14	1189	4	生殖・発生	EPA 2016 (PFOS)	Exposure to perfluorooctane sulfonate during pregnancy in rat and mouse. II: Postnatal Evaluation	2003	Lau et al.	Toxicol Sci		
32	15	1203	4	生殖・発生	EPA 2023 (PFOS)	Neonatal mortality from in utero exposure to perfluorooctanesulfonate (PFOS) in Sprague-Dawley rats: dose-response, and biochemical and pharamacokinetic parameters	2005	Luebker et al.	Toxicology		
33	16	1220	4	生殖・発生		Exposure to perfluorooctane sulfonate during pregnancy in rat and mouse. I: Maternal and Prenatal Evaluations	2003	Thibodeaux et al.	Toxicol Sci		
34	17	1224	4	生殖・発生		Effects of developmental perfluorooctane sulfonate exposure on spatial learning and memory ability of rats and mechanism associated with synaptic plasticity	2015	Wang et al.	Food Chem Toxicol		
35	18	1302	4	生殖・発生		Window of susceptibility to perfluoroctane sulfonate (PFOS)-induced neonatal mortality in the rat	2003	Grasty et al.	Res B Dev Reprod Toxicol		
36	19	1451	4	生殖・発生		Glucose and lipid homeostasis in adult rat is impaired by early-life exposure to perfluorooctane sulfonate	2014	Lv et al.	Environ Toxicol		
37	20	1516	4	生殖・発生		Gestational and lactational exposure to potassium perfluorooctanesulfonate (K+PFOS) in rats: toxicokinetics, thyroid hormone status, and related gene expression	2009	Chang et al.	Reprod Toxicol		
38	21	1517	4	~~生殖・発生~~ →発がん性		Induction of Leydig cell adenomas by ammonium perfluorooctanoate: a possible endocrine-related mechanism	1992	Cook et al.	Toxicol Appl Pharmacol		
39	22	1526	4	生殖・発生		Prenatal and postnatal impact of perfluorooctane sulfonate (PFOS) on rat development: a cross-foster study on chemical burden and thyroid hormone system	2009	Yu et al.	Environ Sci Technol		
40	23	1555	4	生殖・発生		Perfluorooctane sulfonate induces apoptosis of hippocampal neurons in rat offspring associated with calcium overload	2015	Wang et al.	Toxicology Research		
41	24	1556	4	生殖・発生		Inflammation-like glial response in rat brain induced by prenatal PFOS exposure	2011	Zeng et al.	Neurotoxicology		
42	25	1557	4	生殖・発生		Developmental perfluorooctane sulfonate exposure inhibits long-term potentiation by affecting AMPA receptor trafficking	2019	Zhang et al.	Toxicology		

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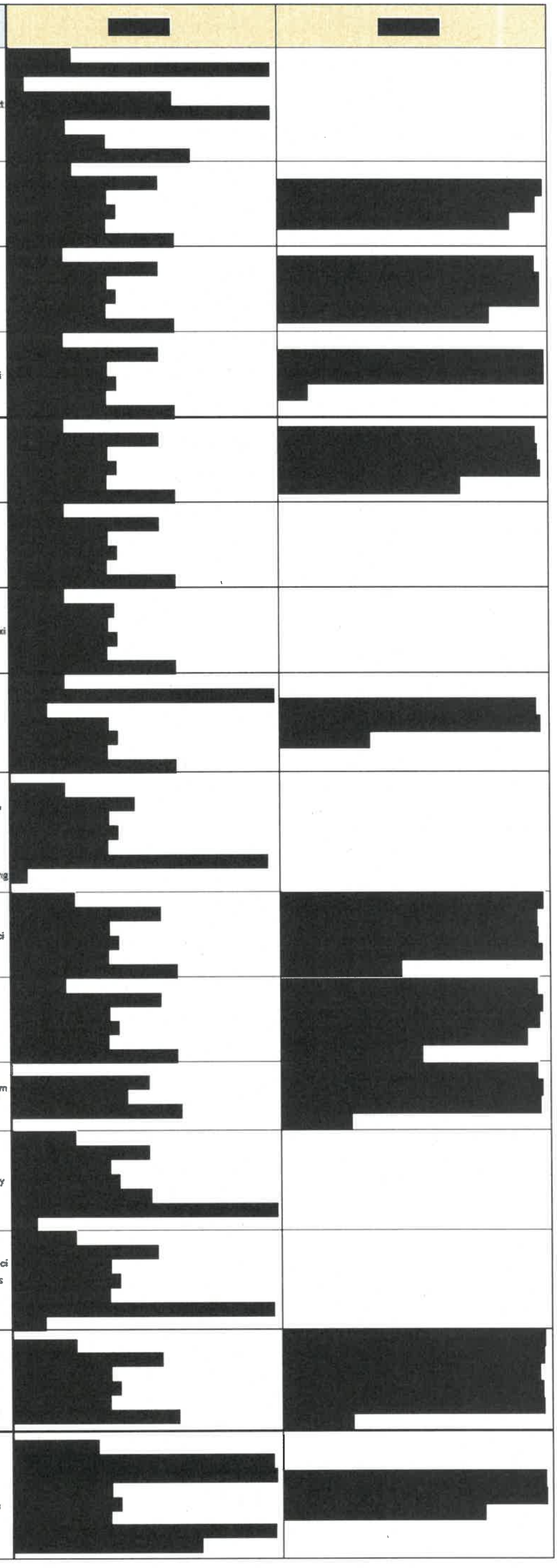
7	1	1163	3	免疫		Perfluorooctanoic acid induces mast cell-mediated allergic inflammation by the release of histamine and inflammatory mediators	2012	Singh et al.	Toxicol Lett
8	2	1470	3	免疫		Perfluorooctanoic acid-induced immunomodulation in adult C57BL/6J or C57BL/6N female mice	2008	Dewitt et al.	Environ Health Perspect
9	3	1472	3	免疫		Chronic effects of perfluorooctanesulfonate exposure on immunotoxicity in adult male C57BL/6 mice	2009	Dong et al.	Arch Toxicol
10	4	1476	3	免疫		Suppression of humoral immunity in mice following exposure to perfluorooctane sulfonate	2008	Peden-Adams et al.	Toxicol Sci
11	5	1479	3	免疫		Perfluorooctanoic acid alters T lymphocyte phenotypes and cytokine expression in mice	2009	Son et al.	Environ Toxicol
12	6	1483	3	免疫		Immunotoxic changes associated with a 7-day oral exposure to perfluorooctanesulfonate (PFOS) in adult male C57BL/6 mice	2009	Zheng et al.	Arch Toxicol
13	7	1488	3	免疫		Effects of environmentally-relevant levels of perfluorooctane sulfonate on clinical parameters and immunological functions in B 6C 3F 1 mice	2011	Fair et al.	J Immunotoxicol
14	8	1491	3	免疫		Effect of perfluorooctane sulfonate (PFOS) on influenza A virus-induced mortality in female B6C3F1 mice	2009	Guruge et al.	J Toxicol Sci
15	9	1496	3	免疫		Effects of perfluorooctane sulfonate (PFOS) exposure on markers of inflammation in female B6C3F1 mice	2011	Mollenhauer et al.	J Environ Sci Health A Tox Hazard Subst Environ Eng
16	10	1509	3	免疫		Exposure to the immunosuppressant, perfluorooctanoic acid, enhances the murine IgE and airway hyperreactivity response to ovalbumin	2007	Fairley et al.	Toxicol Sci
17	11	1515	3	免疫		Subchronic effects of perfluorooctanesulfonate exposure on inflammation in adult male C57BL/6 mice	2012	Dong et al.	Environ Toxicol
44	1	POD19	7	代謝	Health Canada 2018 (PFOA)	13-week dietary toxicity study of ammonium perfluorooctanoate (APFO) in male rats	2004	Perkins et al.	Drug Chem Toxicol
45	2	1131	7	代謝		The effects of perfluorooctanoate on high fat diet induced non-alcoholic fatty liver disease in mice	2019	Li et al.	Toxicology
46	3	1142	7	代謝		Adverse bioeffect of perfluorooctanoic acid on liver metabolic function in mice	2018	Wu et al.	Environ Sci Pollut Res Int
47	4	1390	7	代謝		Comparative hepatic effects of perfluorooctanoic acid and WY 14,643 in PPAR-alpha knockout and wild-type mice	2008	Wolf et al.	Toxicol Pathol
48	5	1413	7	代謝		Gene expression profiling in wild-type and PPARα-null mice exposed to perfluorooctane sulfonate reveals PPARα-independent effects	2010	Rosen et al.	PPAR Research



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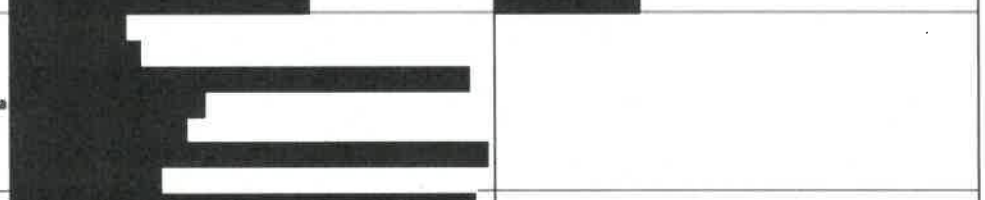
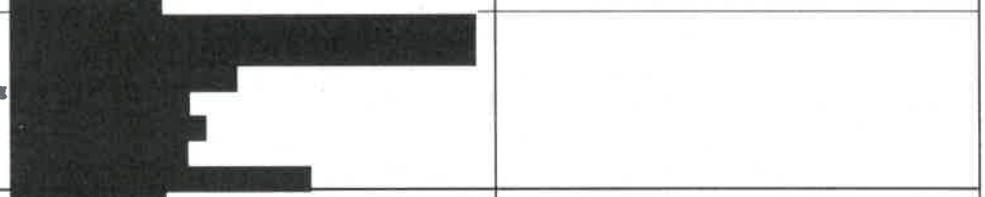
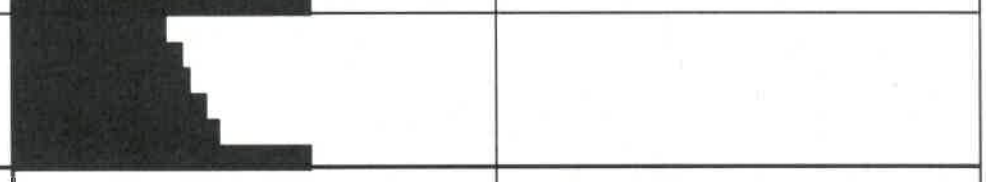
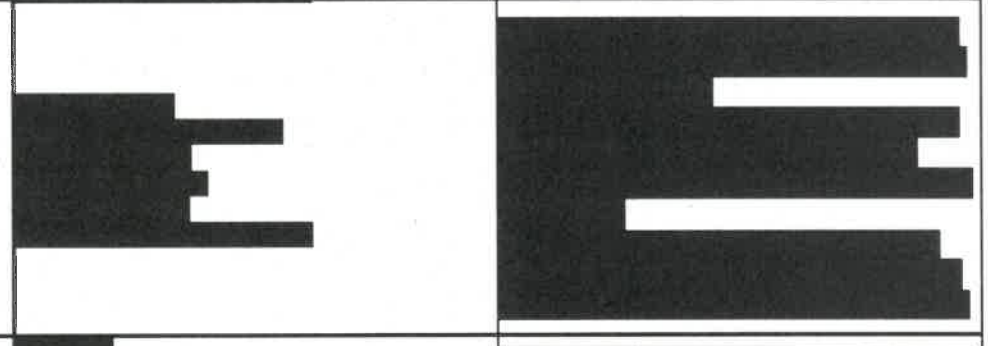
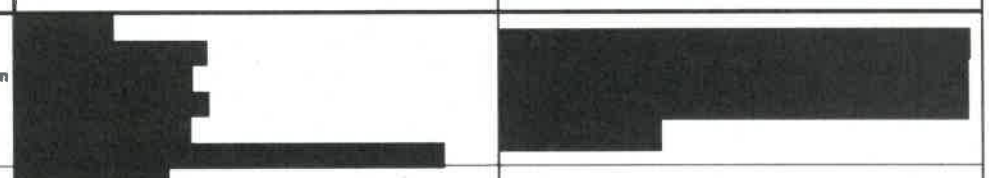
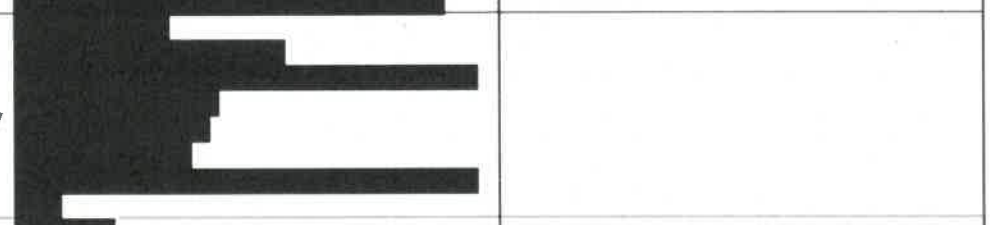
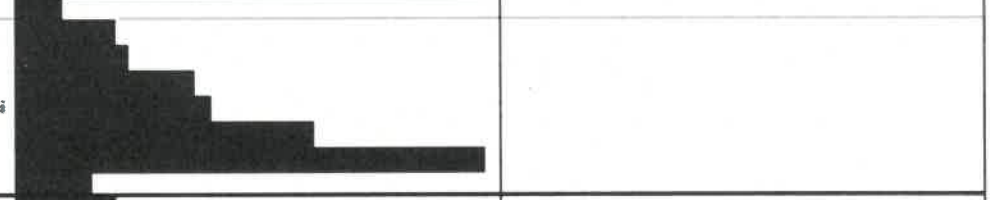
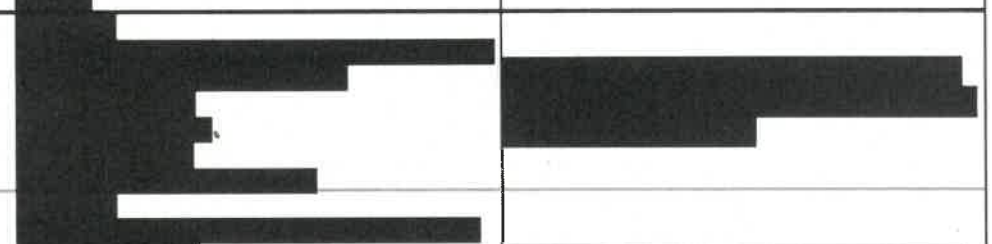
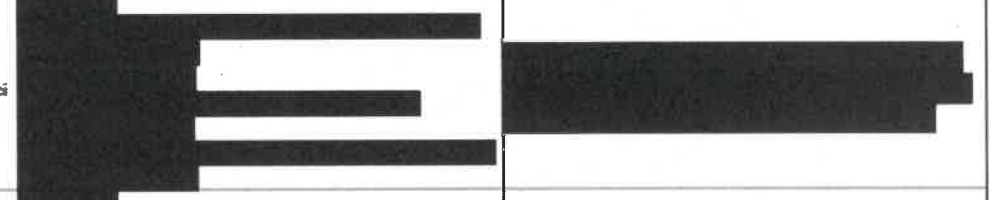
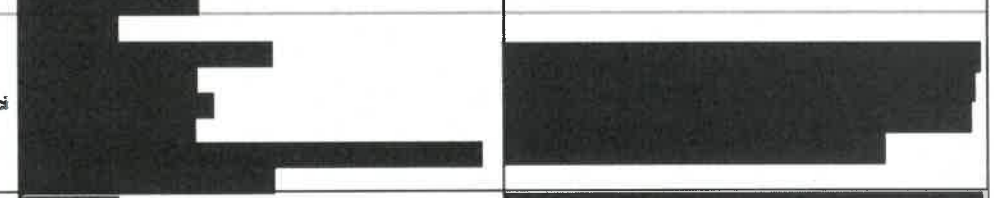
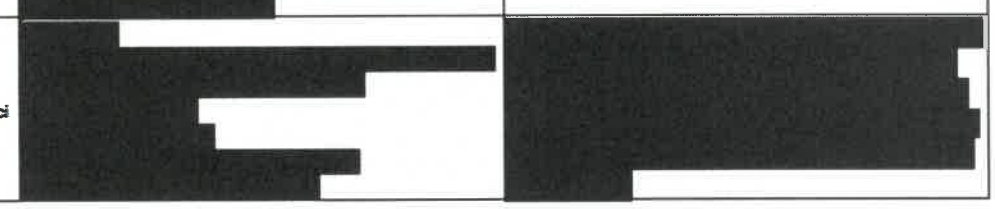
49	6	1415	7	代謝		Perfluorooctanoic acid-induced hepatic toxicity following 21-day oral exposure in mice	2008	Son et al.	Arch Toxicol	
50	7	1425	7	代謝		Involvement of oxidative stress and inflammation in liver injury caused by perfluorooctanoic acid exposure in mice	2014	Yang et al.	Biomed Res Int	
51	8	1459	7	代謝		Effects of perfluoro fatty acids on peroxisome proliferation and mitochondrial size in mouse liver: Dose and time factors and effect of chain length	1993	Permadi et al.	Xenobiotica	
52	9	1150	7	代謝		Animal toxicity studies with ammonium perfluorooctanoate	1980	Griffith and Long	Am Ind Hyg Assoc J	
53	10	1104	7	代謝		Studies on the toxicological effects of PFOA and PFOS on rats using histological observation and chemical analysis	2009	Cui et al.	Arch Environ Contam Toxicol	
54	11	1107	7	代謝		NTP technical report on the toxicity studies of perfluoroalkyl sulfonates (perfluorobutane sulfonic acid, perfluorohexane sulfonate potassium salt, and perfluorooctane sulfonic acid) administered by gavage to Sprague Dawley (Hsd:Sprague Dawley SD) rats	2019	NTP	-	
55	12	1090	7	代謝		Inhalation toxicity of ammonium perfluorooctanoate	1986	Kennedy et al.	Food Chem Toxicol	
56	13	1127	7	代謝		Characterization of hepatic responses of rat to administration of perfluorooctanoic and perfluorodecanoic acids at low levels	1995	Kawashima et al.	Toxicology	
57	14	1312	7	代謝		Mechanisms of extrahepatic tumor induction by peroxisome proliferators in male CD rats	2001	Biegel et al.	Toxicol Sci	
58	15	1430	7	代謝		Induction of apoptosis and CYP4A1 expression in Sprague-Dawley rats exposed to low doses of perfluorooctane sulfonate	2011	Kim et al.	J Toxicol Sci	
59	16	1570	7	代謝		Gene expression profiles in rat liver treated with perfluorooctanoic acid (PFOA)	2006	Guruge et al.	Toxicol Sci	
60	17	1102	7	代謝		Toxicity of ammonium perfluorooctanoate in male cynomolgus monkeys after oral dosing for 6 months	2002	Butenhoff et al.	Toxicol Sci	
61	18	1110	7	代謝		Subchronic toxicity studies on perfluorooctanesulfonate potassium salt in cynomolgus monkeys	2002	Seacat et al.	Toxicol Sci	

通し No.		No.	エンドポイント		評価値算出機関	Title	年	著者	雑誌	
1	1	1160	2	神経		The ubiquitous environmental pollutant perfluorooctanoicacid inhibits feeding behavior via peroxisome proliferator-activated receptor-alpha	2008	Asakawa et al.	Int J Mol Med	
2	2	1560	2	神経		Behavioral effects in adult mice exposed to perfluorooctane sulfonate (PFOS)	2007	Fuentes et al.	Toxicology	
3	3	1564	2	神経		Perfluorooctane sulfonate disrupts the blood brain barrier through the crosstalk between endothelial cells and astrocytes in mice	2019	Yu et al.	Environ Pollut	
4	4	1453	2	神経		Perfluorooctane sulfonate (PFOS) exposure could modify the dopaminergic system in several limbic brain regions	2008	Salgado et al.	Toxicol Lett	
5	5	1561	2	神経		Ultrasonic-induced tonic convulsion in rats after subchronic exposure to perfluorooctane sulfonate (PFOS)	2011	Kawamoto et al.	J Toxicol Sci	
6	6	1565	2	神経		Effects of subchronic perfluorooctane sulfonate exposure of rats on calcium-dependent signaling molecules in the brain tissue	2010	Liu et al.	Arch Toxicol	
43	1	1134	5	心血管		The roles of bone morphogenetic protein 2 in perfluorooctanoic acid induced developmental cardiotoxicity and l-carnitine mediated protection	2018	Lv et al.	Toxicol Appl Pharmacol	
62	1	1151	8	腎臓		Elimination and toxicity of perfluorooctanoic acid during subchronic administration in the Wistar rat	1987	Hanhijärvi et al.	Pharmacol Toxicol	
63	2	D1275	8	腎臓		Oxidative stress and Cx43-mediated apoptosis are involved in PFOS-induced nephrotoxicity	2022	Tang et al.	Toxicology	
64	1	1348	9	内分泌		Effects of perfluorooctane sulfonate on rat thyroid hormone biosynthesis and metabolism	2009	Yu et al.	Environ Toxicol Chem	
65	2	1520	9	内分泌		Regulation of corticosterone secretion is modified by PFOS exposure at different levels of the hypothalamic-pituitary-adrenal axis in adult male rats	2014	Pereira et al.	Toxicol Lett	
66	3	1521	9	内分泌		Initial study on the possible mechanisms involved in the effects of high doses of perfluorooctane sulfonate (PFOS) on prolactin secretion	2015	Salgado et al.	Food Chem Toxicol	
67	4	1522	9	内分泌		Perfluorooctane sulfonate (PFOS) can alter the hypothalamic-pituitary-adrenal (HPA) axis activity by modifying CRF1 and glucocorticoid receptors	2018	Salgado-Freiria et al.	Toxicol Lett	
68	5	1562	9	内分泌		Perfluorooctane sulfonate effects on the reproductive axis in adult male rats	2014	López-Doval et al.	Environ Res	
69	6	1542	9	内分泌		Estrogen-like activity of perfluoroalkyl acids in vivo and interaction with human and rainbow trout estrogen receptors in vitro	2011	Benninghoff et al.	Toxicol Sci	
70	7	1546	9	内分泌		Estrogen-like properties of perfluorooctanoic acid as revealed by expressing hepatic estrogen-responsive genes in rare minnows (Gobiocyris rarus)	2007	Wei et al.	Environ Toxicol Chem	

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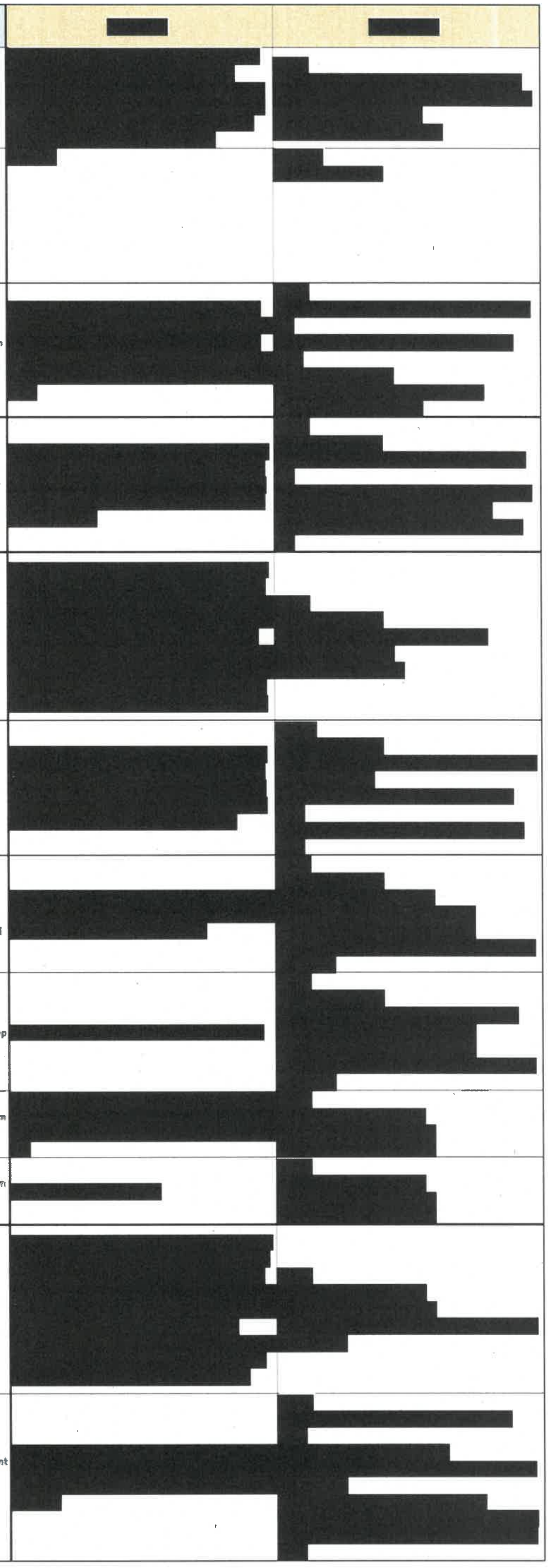
71	8	1553	9	内分泌		Neurotoxicity of perfluorooctane sulfonate to hippocampal cells in adult mice	2013	Long et al.	PLoS ONE	[redacted]	[redacted]
85	1	D1216	12	その他		Perfluorooctane sulfonic acid disrupts protective tight junction proteins via protein kinase D in airway epithelial cells	2022	Lucas et al.	Toxicol Sci	[redacted]	[redacted]

通し No.		No.	エンドポイント		評価値算出機関	Title	年	著者	雑誌
72	1	POD20	10	発がん性	Health Canada 2018 (PFOS)	Chronic dietary toxicity and carcinogenicity study with potassium perfluorooctanesulfonate in Sprague Dawley rats	2012	Butenhoff et al.	Toxicology
73	2	POD21	10	発がん性	EPA 2023 (PFOS)	104-Week Dietary Chronic Toxicity and Carcinogenicity Study with Perfluorooctane Sulfonic Acid Potassium Salt (PFOS; T-6295) in Rats (pp. 1-216). 3M. Available on the Internet at: https://www.ag.state.mn.us/Office/Cases/3M/docs/PTX/PTX2805.pdf.	2002	Thomford	3M
74	3	D1108	10	発がん性		Exposure to perfluorooctanoic acid leads to promotion of pancreatic cancer	2022	Kamendulis et al.	Carcinogenesis
75	4	1314	10	発がん性		Chronic dietary toxicity and carcinogenicity study with ammonium perfluorooctanoate in Sprague-Dawley rats	2012	Butenhoff et al.	Toxicology
76	5	1316	10	発がん性		NTP technical report on the toxicology and carcinogenesis studies of perfluorooctanoic acid (CASRN 335-67-1) administered in feed to Sprague Dawley (Hsd:Sprague Dawley SD) rats [NTP]	2020	NTP	-
77	6	1319	10	発がん性		Evaluation of the chronic toxicity and carcinogenicity of perfluorohexanoic acid (PFHxA) in Sprague-Dawley rats	2015	Klaunig et al.	Toxicol Pathol
78	1	1576	11	遺伝毒性		Can sustained exposure to PFAS trigger a genotoxic response? A comprehensive genotoxicity assessment in mice after subacute oral administration of PFOA and PFBA	2019	Crebelli et al.	Regul Toxicol Pharmacol
79	2	1584	11	遺伝毒性		Evaluation of perfluorooctanoate for potential genotoxicity	2014	Butenhoff et al.	Toxicol Rep
80	3	1585	11	遺伝毒性		The protective role of curcumin on perfluorooctane sulfonate-induced genotoxicity: Single cell gel electrophoresis and micronucleus test	2013	Çelik et al.	Food Chem Toxicol
81	4	1586	11	遺伝毒性		Curcumin prevents perfluorooctane sulfonate-induced genotoxicity and oxidative DNA damage in rat peripheral blood	2016	Eke et al.	Drug Chem Toxicol
82	5	1587	11	遺伝毒性		In vitro assessment of the cytotoxic and mutagenic potential of perfluorooctanoic acid	2008	Fernández et al.	Toxicol In Vitro
83	6	D1324	11	遺伝毒性		Peroxisome proliferator activated receptor-mediated genotoxicity of perfluoroalkyl acids using human lymphoblastoid cells	2016	Nakamura et al.	Fundamental Toxicol Sci



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84	7	1568	11	遺伝毒性		Perfluoroalkylated substances (PFAS) affect oxidative stress biomarkers in vitro	2015	Wielsøe et al.	Chemosphere