

3M PFAS Health Science Publication Citations

September 30, 2022

Number of citations [1-176]

- [1] Antoniou E, Colnot T, Zeegers M, Dekant W. Immunomodulation and exposure to per- and polyfluoroalkyl substances: an overview of the current evidence from animal and human studies. *Arch Toxicol.* **2022**;96(8):2261-85.
- [2] Colnot T, Dekant W. Commentary: cumulative risk assessment of perfluoroalkyl carboxylic acids and perfluoralkyl sulfonic acids: what is the scientific support for deriving tolerable exposures by assembling 27 PFAS into 1 common assessment group? *Arch Toxicol.* **2022**;96(11):3127-39.
- [3] Porter AK, Kleinschmidt SE, Andres KL, Reusch CN, Krisko RM, Taiwo OA, et al. Antibody response to COVID-19 vaccines among workers with a wide range of exposure to per- and polyfluoroalkyl substances. *Environ Int.* **2022**;169:107537.
- [4] Su S, Billy LJ, Chang S, Gonzalez FJ, Patterson AD, Peters JM. The role of mouse and human peroxisome proliferator-activated receptor- α in modulating the hepatic effects of perfluorooctane sulfonate in mice. *Toxicol.* **2022**;15(465):153056.
- [5] Andersen ME, Mallick P, Clewell HJ, 3rd, Yoon M, Olsen GW, Longnecker MP. Using quantitative modeling tools to assess pharmacokinetic bias in epidemiological studies showing associations between biomarkers and health outcomes at low exposures. *Environ Res.* **2021**;197:111183.
- [6] Andersen ME, Hagenbuch B, Apte U, Corton JC, Fletcher T, Lau C, et al. Why is elevation of serum cholesterol associated with exposure to perfluoroalkyl substances (PFAS) in humans? A workshop report on potential mechanisms. *Toxicology.* **2021**;459:152845.
- [7] Bjork JA, Dawson DA, Krogstad JO, Wallace KB. Transcriptional Effects of Binary Combinations of PFAS in FaO Cells. *Toxicology.* **2021**:152997.
- [8] Colnot T, Dekant W. Issues in the hazard and risk assessment of perfluoroalkyl substance mixtures. *Toxicol Lett.* **2021**;353:79-82.
- [9] Dzierlenga MW, Keast DR, Longnecker MP. The concentration of several perfluoroalkyl acids in serum appears to be reduced by dietary fiber. *Environ Int.* **2021**;146:106292.
- [10] Ruggiero MJ, Miller H, Idowu JY, Zitzow JD, Chang SC, Hagenbuch B. Perfluoroalkyl Carboxylic Acids Interact with the Human Bile Acid Transporter NTCP. *Livers.* **2021**;1(4):221-9.
- [11] Torres L, Redko A, Limper C, Imbiakha B, Chang S, August A. Effect of Perfluorooctanesulfonic acid (PFOS) on immune cell development and function in mice. *Immunology letters.* **2021**;233:31-41.

- [12] Chang S, Parker GA, Kleinschmidt SE, Olsen GW, Ley CA, Taiwo OA. A Pathology Review of the Lower Gastrointestinal Tract in Relation to Ulcerative Colitis in Rats and Cynomolgus Macaques Treated With Ammonium Perfluorooctanoate. *Toxicol Pathol.* **2020**;48(4):593-602.
- [13] Dzierlenga MW, Moreau M, Song G, Mallick P, Ward PL, Campbell JL, et al. Quantitative bias analysis of the association between subclinical thyroid disease and two perfluoroalkyl substances in a single study. *Environ Res.* **2020**;182:109017.
- [14] Dzierlenga MW, Crawford L, Longnecker MP. Birth weight and perfluorooctane sulfonic acid: a random-effects meta-regression analysis. *Environmental Epidemiology.* **2020**;4(3):e095.
- [15] Dzierlenga MW, Allen BC, Clewell HJ, 3rd, Longnecker MP. Pharmacokinetic bias analysis of an association between clinical thyroid disease and two perfluoroalkyl substances. *Environ Int.* **2020**;141:105784.
- [16] Zhang L, Rimal B, Nichols RG, Tian Y, Smith PB, Hatzakis E, et al. Perfluorooctane sulfonate alters gut microbiota-host metabolic homeostasis in mice. *Toxicology.* **2020**;431:152365.
- [17] Dzierlenga MW, Allen BC, Ward PL, Clewell HJ, 3rd, Longnecker MP. A model of functional thyroid disease status over the lifetime. *PLoS One.* **2019**;14(7):e0219769.
- [18] Pouwer MG, Pieterman EJ, Chang SC, Olsen GW, Caspers MPM, Verschuren L, et al. Dose Effects of Ammonium Perfluorooctanoate on Lipoprotein Metabolism in APOE*3-Leiden.CETP Mice. *Toxicol Sci.* **2019**;168(2):519-34.
- [19] Chang S, Butenhoff JL, Parker GA, Coder PS, Zitzow JD, Krisko RM, et al. Reproductive and developmental toxicity of potassium perfluorohexanesulfonate in CD-1 mice. *Reprod Toxicol.* **2018**;78:150-68.
- [20] Convertino M, Church TR, Olsen GW, Liu Y, Doyle E, Elcombe CR, et al. Stochastic Pharmacokinetic-Pharmacodynamic Modeling for Assessing the Systemic Health Risk of Perfluorooctanoate (PFOA). *Toxicol Sci.* **2018**;163(1):293-306.
- [21] Lange CC. Anaerobic biotransformation of N-methyl perfluorobutanesulfonamido ethanol and N-ethyl perfluorooctanesulfonamido ethanol. *Environ Toxicol Chem.* **2018**;37(3):768-79.
- [22] Olsen GW. Re: Health Status of Workers Exposed to Perfluorinated Alkylate Substances. *J Occup Environ Med.* **2018**;60(10):e563-e6.
- [23] Bagley BD, Chang SC, Ehresman DJ, Eveland A, Zitzow JD, Parker GA, et al. Perfluorooctane Sulfonate-Induced Hepatic Steatosis in Male Sprague Dawley Rats Is Not Attenuated by Dietary Choline Supplementation. *Toxicol Sci.* **2017**;160(2):284-98.
- [24] Butenhoff JL, Olsen GW, Chang S. Toxicological response of Sprague Dawley rats from inhalation exposure to perfluorooctane sulfonyl fluoride (POSF). *Toxicol Lett.* **2017**;271:38-49.
- [25] Chang S, Mader BT, Lindstrom KR, Lange CC, Hart JA, Kestner TA, et al. Perfluorooctanesulfonate (PFOS) Conversion from N-Ethyl-N-(2-hydroxyethyl)-perfluorooctanesulfonamide (EtFOSE) in male Sprague Dawley rats after inhalation exposure. *Environ Res.* **2017**;155:307-13.

- [26] Chang S, Allen BC, Andres KL, Ehresman DJ, Falvo R, Provencher A, et al. Evaluation of Serum Lipid, Thyroid, and Hepatic Clinical Chemistries in Association With Serum Perfluorooctanesulfonate (PFOS) in Cynomolgus Monkeys After Oral Dosing With Potassium PFOS. *Toxicol Sci.* **2017**;156(2):387-401.
- [27] Ngueta G, Longnecker MP, Yoon M, Ruark CD, Clewell HJR, Andersen ME, et al. Quantitative bias analysis of a reported association between perfluoroalkyl substances (PFAS) and endometriosis: The influence of oral contraceptive use. *Environ Int.* **2017**;104:118-21.
- [28] Olsen GW, Mair DC, Lange CC, Harrington LM, Church TR, Goldberg CL, et al. Per- and polyfluoroalkyl substances (PFAS) in American Red Cross adult blood donors, 2000-2015. *Environ Res.* **2017**;157:87-95.
- [29] Ruark CD, Song G, Yoon M, Verner MA, Andersen ME, Clewell HJ, 3rd, et al. Quantitative bias analysis for epidemiological associations of perfluoroalkyl substance serum concentrations and early onset of menopause. *Environ Int.* **2017**;99:245-54.
- [30] Zhao W, Zitzow JD, Weaver Y, Ehresman DJ, Chang SC, Butenhoff JL, et al. Organic Anion Transporting Polypeptides Contribute to the Disposition of Perfluoroalkyl Acids in Humans and Rats. *Toxicol Sci.* **2017**;156(1):84-95.
- [31] Chang ET, Adami HO, Boffetta P, Wedner HJ, Mandel JS. A critical review of perfluorooctanoate and perfluorooctanesulfonate exposure and immunological health conditions in humans. *Critical reviews in toxicology.* **2016**;46(4):279-331.
- [32] Princen HMG, Pouwer MG, Pieterman EJ. Comment on "Hypercholesterolemia with consumption of PFOA-laced Western diets is dependent on strain and sex of mice" by Rebholz S.L. et al. *Toxicol. Rep.* **2016** (3) 46-54. *Toxicol Rep.* **2016**;3:306-9.
- [33] Zhang L, Krishnan P, Ehresman DJ, Smith PB, Dutta M, Bagley BD, et al. Editor's Highlight: Perfluorooctane Sulfonate-Choline Ion Pair Formation: A Potential Mechanism Modulating Hepatic Steatosis and Oxidative Stress in Mice. *Toxicol Sci.* **2016**;153(1):186-97.
- [34] Botelho SA, Saghafian M, Pavlova S, Hassan M, DePierre JW, Abedi-Valugerdi M. Complement activation is involved in the hepatic injury caused by high-dose exposure of mice to perfluorooctanoic acid. *Chemosphere.* **2015**;129:225-31.
- [35] Butenhoff JL, Rodricks JV. Human Health Risk Assessment of Perfluoroalkyl Acids. In: DeWitt J, ed. *Toxicological Effects of Perfluoroalkyl and polyfluoroalkyl Substances.* Switzerland: Springer International Publishing 2015:363-418.
- [36] Liew Z, Ritz B, von Ehrenstein OS, Bech BH, Nohr EA, Fei C, et al. Attention deficit/hyperactivity disorder and childhood autism in association with prenatal exposure to perfluoroalkyl substances: a nested case-control study in the Danish National Birth Cohort. *Environ Health Perspect.* **2015**;123(4):367-73.
- [37] Liu Y, Pereira AS, Beesoon S, Vestergren R, Berger U, Olsen GW, et al. Temporal trends of perfluorooctanesulfonate isomer and enantiomer patterns in archived Swedish and American serum samples. *Environ Int.* **2015**;75:215-22.

- [38] Olsen GW, Ley CA. Prostate Cancer and PFOA. *J Occup Environ Med.* **2015**;57(6):e60.
- [39] Olsen GW. PFAS biomonitoring in higher exposed populations. In: DeWitt J, ed. *Toxicological Effects of Perfluoroalkyl and Polyfluoroalkyl Substances*. Switzerland: Springer International Publishing 2015:77-125.
- [40] Shabalina IG, Kramarova TV, Mattsson CL, Petrovic N, Rahman Qazi M, Csikasz RI, et al. The Environmental Pollutants Perfluorooctane Sulfonate and Perfluorooctanoic Acid Upregulate Uncoupling Protein 1 (UCP1) in Brown-Fat Mitochondria Through a UCP1-Dependent Reduction in Food Intake. *Toxicol Sci.* **2015**;146(2):334-43.
- [41] Verner MA, Loccisano AE, Morken NH, Yoon M, Wu H, McDougall R, et al. Associations of Perfluoroalkyl Substances (PFAS) with Lower Birth Weight: An Evaluation of Potential Confounding by Glomerular Filtration Rate Using a Physiologically Based Pharmacokinetic Model (PBPK). *Environ Health Perspect.* **2015**;123(12):1317-24.
- [42] Verner MA, Longnecker MP. Comment on "enhanced elimination of perfluorooctanesulfonic Acid by menstruating women: evidence from population-based pharmacokinetic modeling". *Environ Sci Technol.* **2015**;49(9):5836-7.
- [43] Wu H, Yoon M, Verner M-A, Xue J, Luo M, Andersen ME, et al. Can the observed association between serum perfluoroalkyl substances and delayed menarche be explained on the basis of puberty-related changes in physiology and pharmacokinetics? *Environ Int.* **2015**;82:61-8.
- [44] Zhao W, Zitzow JD, Ehresman DJ, Chang SC, Butenhoff JL, Forster J, et al. Na+/Taurocholate Cotransporting Polypeptide and Apical Sodium-Dependent Bile Acid Transporter Are Involved in the Disposition of Perfluoroalkyl Sulfonates in Humans and Rats. *Toxicol Sci.* **2015**;146(2):363-73.
- [45] Bogdanska J, Sundstrom M, Bergstrom U, Borg D, Abedi-Valugerdi M, Bergman A, et al. Tissue distribution of ³⁵S-labelled perfluorobutanesulfonic acid in adult mice following dietary exposure for 1-5 days. *Chemosphere.* **2014**;98:28-36.
- [46] Butenhoff JL, Kennedy GL, Jung R, Chang SC. Evaluation of perfluorooctanoate for potential genotoxicity. *Toxicol Rep.* **2014**;1:252-70.
- [47] Caverly Rae JM, Frame SR, Kennedy GL, Butenhoff JL, Chang SC. Pathology review of proliferative lesions of the exocrine pancreas in two chronic feeding studies in rats with ammonium perfluorooctanoate. *Toxicol Rep.* **2014**;1:85-91.
- [48] Chang ET, Adami HO, Boffetta P, Cole P, Starr TB, Mandel JS. A critical review of perfluorooctanoate and perfluorooctanesulfonate exposure and cancer risk in humans. *Critical reviews in toxicology.* **2014**;44 Suppl 1:1-81.
- [49] Liew Z, Ritz B, Bonefeld-Jorgensen EC, Henriksen TB, Nohr EA, Bech BH, et al. Prenatal exposure to perfluoroalkyl substances and the risk of congenital cerebral palsy in children. *Am J Epidemiol.* **2014**;180(6):574-81.

- [50] Raleigh KK, Alexander BH, Olsen GW, Ramachandran G, Morey SZ, Church TR, et al. Mortality and cancer incidence in ammonium perfluorooctanoate production workers. *Occup Environ Med.* **2014**;71(7):500-6.
- [51] Yao PL, Ehresman DJ, Rae JM, Chang SC, Frame SR, Butenhoff JL, et al. Comparative in vivo and in vitro analysis of possible estrogenic effects of perfluorooctanoic acid. *Toxicology.* **2014**;326:62-73.
- [52] Albrecht PP, Torsell NE, Krishnan P, Ehresman DJ, Frame SR, Chang SC, et al. A species difference in the peroxisome proliferator-activated receptor alpha-dependent response to the developmental effects of perfluorooctanoic acid. *Toxicol Sci.* **2013**;131(2):568-82.
- [53] Loccisano AE, Longnecker MP, Campbell JL, Jr., Andersen ME, Clewell HJ, 3rd. Development of PBPK models for PFOA and PFOS for human pregnancy and lactation life stages. *J Toxicol Environ Health A.* **2013**;76(1):25-57.
- [54] Qazi MR, Hassan M, Nelson BD, Depierre JW, Abedi-Valugerdi M. Sub-acute, moderate-dose, but not short-term, low-dose dietary pre-exposure of mice to perfluorooctanoate aggravates concanavalin A-induced hepatitis. *Toxicol Lett.* **2013**;219(1):1-7.
- [55] Qazi MR, Hassan M, Nelson BD, DePierre JW, Abedi-Valugerdi M. Both sub-acute, moderate-dose and short-term, low-dose dietary exposure of mice to perfluorooctane sulfonate exacerbates concanavalin A-induced hepatitis. *Toxicol Lett.* **2013**;217(1):67-74.
- [56] Vanden Heuvel JP. Comment on "associations between PFOA, PFOS and changes in the expression of genes involved in cholesterol metabolism in humans" by Fletcher et al., *Environment International* 57-58 (2013) 2-10. *Environ Int.* **2013**;61:150-3.
- [57] Butenhoff JL, Kennedy GL, Jr., Chang SC, Olsen GW. Chronic dietary toxicity and carcinogenicity study with ammonium perfluorooctanoate in Sprague-Dawley rats. *Toxicology.* **2012**;298(1-3):1-13.
- [58] Butenhoff JL, Chang SC, Olsen GW, Thomford PJ. Chronic dietary toxicity and carcinogenicity study with potassium perfluorooctanesulfonate in Sprague Dawley rats. *Toxicology.* **2012**;293(1-3):1-15.
- [59] Butenhoff JL, Bjork JA, Chang SC, Ehresman DJ, Parker GA, Das K, et al. Toxicological evaluation of ammonium perfluorobutyrate in rats: twenty-eight-day and ninety-day oral gavage studies. *Reprod Toxicol.* **2012**;33(4):513-30.
- [60] Butenhoff JL, Pieterman E, Ehresman DJ, Gorman GS, Olsen GW, Chang SC, et al. Distribution of perfluorooctanesulfonate and perfluorooctanoate into human plasma lipoprotein fractions. *Toxicol Lett.* **2012**;210(3):360-5.
- [61] Chang SC, Noker PE, Gorman GS, Gibson SJ, Hart JA, Ehresman DJ, et al. Comparative pharmacokinetics of perfluorooctanesulfonate (PFOS) in rats, mice, and monkeys. *Reprod Toxicol.* **2012**;33(4):428-40.

- [62] Elcombe CR, Elcombe BM, Foster JR, Chang SC, Ehresman DJ, Butenhoff JL. Hepatocellular hypertrophy and cell proliferation in Sprague-Dawley rats from dietary exposure to potassium perfluorooctanesulfonate results from increased expression of xenosensor nuclear receptors PPARalpha and CAR/PXR. *Toxicology*. **2012**;293(1-3):16-29.
- [63] Elcombe CR, Elcombe BM, Foster JR, Chang SC, Ehresman DJ, Noker PE, et al. Evaluation of hepatic and thyroid responses in male Sprague Dawley rats for up to eighty-four days following seven days of dietary exposure to potassium perfluorooctanesulfonate. *Toxicology*. **2012**;293(1-3):30-40.
- [64] Loccisano AE, Campbell JL, Jr., Butenhoff JL, Andersen ME, Clewell HJ, 3rd. Evaluation of placental and lactational pharmacokinetics of PFOA and PFOS in the pregnant, lactating, fetal and neonatal rat using a physiologically based pharmacokinetic model. *Reprod Toxicol*. **2012**;33(4):468-90.
- [65] Loccisano AE, Campbell JL, Jr., Butenhoff JL, Andersen ME, Clewell HJ, 3rd. Comparison and evaluation of pharmacokinetics of PFOA and PFOS in the adult rat using a physiologically based pharmacokinetic model. *Reprod Toxicol*. **2012**;33(4):452-67.
- [66] Olsen GW, Lange CC, Ellefson ME, Mair DC, Church TR, Goldberg CL, et al. Temporal trends of perfluoroalkyl concentrations in American Red Cross adult blood donors, 2000-2010. *Environ Sci Technol*. **2012**;46(11):6330-8.
- [67] Olsen GW, Ehresman DJ, Buehrer BD, Gibson BA, Butenhoff JL, Zobel LR. Longitudinal assessment of lipid and hepatic clinical parameters in workers involved with the demolition of perfluoroalkyl manufacturing facilities. *J Occup Environ Med*. **2012**;54(8):974-83.
- [68] Olsen GW, Andres KL, Johnson RA, Buehrer BD, Holen BM, Morey SZ, et al. Cohort mortality study of roofing granule mine and mill workers. Part II. Epidemiologic analysis, 1945-2004. *J Occup Environ Hyg*. **2012**;9(4):257-68.
- [69] Qazi MR, Nelson BD, DePierre JW, Abedi-Valugerdi M. High-dose dietary exposure of mice to perfluorooctanoate or perfluorooctane sulfonate exerts toxic effects on myeloid and B-lymphoid cells in the bone marrow and these effects are partially dependent on reduced food consumption. *Food Chem Toxicol*. **2012**;50(9):2955-63.
- [70] Raymer JH, Michael LC, Studabaker WB, Olsen GW, Sloan CS, Wilcosky T, et al. Concentrations of perfluorooctane sulfonate (PFOS) and perfluorooctanoate (PFOA) and their associations with human semen quality measurements. *Reprod Toxicol*. **2012**;33(4):419-27.
- [71] Reiner JL, O'Connell SG, Butt CM, Mabury SA, Small JM, De Silva AO, et al. Determination of perfluorinated alkyl acid concentrations in biological standard reference materials. *Anal Bioanal Chem*. **2012**;404(9):2683-92.
- [72] Sundstrom M, Bogdanska J, Pham HV, Athanasios V, Nobel S, McAlees A, et al. Radiosynthesis of perfluorooctanesulfonate (PFOS) and perfluorobutanesulfonate (PFBS), including solubility, partition and adhesion studies. *Chemosphere*. **2012**;87(8):865-71.

- [73] Sundstrom M, Chang SC, Noker PE, Gorman GS, Hart JA, Ehresman DJ, et al. Comparative pharmacokinetics of perfluorohexanesulfonate (PFHxS) in rats, mice, and monkeys. *Reprod Toxicol*. **2012**;33(4):441-51.
- [74] Zobel LR, Olsen GW, Butenhoff JL. Perfluorinated compounds and immunotoxicity in children. *JAMA*. **2012**;307(18):1910; author reply -1.
- [75] Bijland S, Rensen PC, Pieterman EJ, Maas AC, van der Hoorn JW, van Erk MJ, et al. Perfluoroalkyl sulfonates cause alkyl chain length-dependent hepatic steatosis and hypolipidemia mainly by impairing lipoprotein production in APOE*3-Leiden CETP mice. *Toxicol Sci*. **2011**;123(1):290-303.
- [76] Bjork JA, Butenhoff JL, Wallace KB. Multiplicity of nuclear receptor activation by PFOA and PFOS in primary human and rodent hepatocytes. *Toxicology*. **2011**;288(1-3):8-17.
- [77] Bogdanska J, Borg D, Sundstrom M, Bergstrom U, Halldin K, Abedi-Valugerdi M, et al. Tissue distribution of (3)(5)S-labelled perfluorooctane sulfonate in adult mice after oral exposure to a low environmentally relevant dose or a high experimental dose. *Toxicology*. **2011**;284(1-3):54-62.
- [78] Eriksen KT, Sorensen M, McLaughlin JK, Overvad K, Raaschou-Nielsen O. Determinants of Plasma PFOA and PFOS Levels Among 652 Danish Men. *Environ Sci Technol*. **2011**;45(19):8137-43.
- [79] Olsen GW, Ellefson ME, Mair DC, Church TR, Goldberg CL, Herron RM, et al. Analysis of a homologous series of perfluorocarboxylates from American Red Cross adult blood donors, 2000-2001 and 2006. *Environ Sci Technol*. **2011**;45(19):8022-9.
- [80] Sundstrom M, Ehresman DJ, Bignert A, Butenhoff JL, Olsen GW, Chang SC, et al. A temporal trend study (1972-2008) of perfluorooctanesulfonate, perfluorohexanesulfonate, and perfluorooctanoate in pooled human milk samples from Stockholm, Sweden. *Environ Int*. **2011**;37(1):178-83.
- [81] Borg D, Bogdanska J, Sundstrom M, Nobel S, Hakansson H, Bergman A, et al. Tissue distribution of ³⁵S-labelled perfluorooctane sulfonate (PFOS) in C57Bl/6 mice following late gestational exposure. *Reproductive Toxicology*. **2010**;30(4):558-65.
- [82] Elcombe CR, Elcombe BM, Foster JR, Farrar DG, Jung R, Chang SC, et al. Hepatocellular hypertrophy and cell proliferation in Sprague-Dawley rats following dietary exposure to ammonium perfluorooctanoate occurs through increased activation of the xenosensor nuclear receptors PPAR α and CAR/PXR. *Arch Toxicol*. **2010**;84(10):787-98.
- [83] Eriksen KT, Raaschou-Nielsen O, Sorensen M, Roursgaard M, Loft S, Moller P. Genotoxic potential of the perfluorinated chemicals PFOA, PFOS, PFBS, PFNA and PFHxA in human HepG2 cells. *Mutat Res*. **2010**;700(1-2):39-43.
- [84] Hardisty JF, Willson GA, Brown WR, McConnell EE, Frame SR, Gaylor DW, et al. Pathology Working Group review and evaluation of proliferative lesions of mammary gland tissues in female rats fed ammonium perfluorooctanoate (APFO) in the diet for 2 years. *Drug Chem Toxicol*. **2010**;33(2):131-7.

- [85] Keller JM, Calafat AM, Kato K, Ellefson ME, Reagen WK, Strynar M, et al. Determination of perfluorinated alkyl acid concentrations in human serum and milk standard reference materials. *Anal Bioanal Chem.* **2010**;397(2):439-51.
- [86] Palkar PS, Anderson CR, Ferry CH, Gonzalez FJ, Peters JM. Effect of prenatal peroxisome proliferator-activated receptor α (PPAR α) agonism on postnatal development. *Toxicology.* **2010**;276(1):79-84.
- [87] Qazi M, Abedi MR, Nelson BD, DePierre JW, Abedi-Valugerdi M. Dietary exposure to perfluoroctanoate or perfluorooctane sulfonate induces hypertrophy in centrilobular hepatocytes and alters the hepatic immune status in mice. *International Immunopharmacology.* **2010**;10(11):1420-7.
- [88] Qazi MR, Nelson BD, DePierre JW, Abedi-Valugerdi M. 28-day dietary exposure of mice to a low total dose (7 mg/kg) of perfluorooctanesulfonate (PFOS) alters neither the cellular compositions of the thymus and spleen nor humoral immune responses: Does the route of administration play a pivotal role in PFOS-induced immunotoxicity? *Toxicology.* **2010**;267(1-3):132-9.
- [89] Weaver YM, Ehresman DJ, Butenhoff JL, Hagenbuch B. Roles of rat renal organic anion transporters in transporting perfluorinated carboxylates with different chain lengths. *Toxicol Sci.* **2010**;113(2):305-14.
- [90] York RG, Kennedy GL, Jr., Olsen GW, Butenhoff JL. Male reproductive system parameters in a two-generation reproduction study of ammonium perfluoroctanoate in rats and human relevance. *Toxicology.* **2010**;271(1-2):64-72.
- [91] Bjork JA, Wallace KB. Structure-activity relationships and human relevance for perfluoroalkyl acid-induced transcriptional activation of peroxisome proliferation in liver cell cultures. *Toxicol Sci.* **2009**;111(1):89-99.
- [92] Butenhoff JL, Chang SC, Ehresman DJ, York RG. Evaluation of potential reproductive and developmental toxicity of potassium perfluorohexanesulfonate in Sprague Dawley rats. *Reprod Toxicol.* **2009**;27(3-4):331-41.
- [93] Butenhoff JL, Ehresman DJ, Chang SC, Parker GA, Stump DG. Gestational and Lactational Exposure to Potassium Perfluorooctanesulfonate (K^+ PFOS) in Rats: Developmental Neurotoxicity. *Reproductive Toxicology.* **2009**;27(3-4):319-30.
- [94] Chang SC, Ehresman DJ, Bjork JA, Wallace KB, Parker GA, Stump DG, et al. Gestational and lactational exposure to potassium perfluorooctanesulfonate (K^+ PFOS) in rats: toxicokinetics, thyroid hormone status, and related gene expression. *Reprod Toxicol.* **2009**;27(3-4):387-99.
- [95] Eriksen KT, Sorensen M, McLaughlin JK, Lipworth L, Tjonneland A, Overvad K, et al. Perfluoroctanoate and perfluorooctanesulfonate plasma levels and risk of cancer in the general Danish population. *J Natl Cancer Inst.* **2009**;101(8):605-9.
- [96] Foreman JE, Chang SC, Ehresman DJ, Butenhoff JL, Anderson CR, Palkar PS, et al. Differential hepatic effects of perfluorobutyrate (PFBA) mediated by mouse and human PPAR α . *Toxicological Sciences.* **2009**;110(1):204-11.

- [97] Lieder PH, Chang SC, York RG, Butenhoff JL. Toxicological evaluation of potassium perfluorobutanesulfonate in a 90-day oral gavage study with Sprague-Dawley rats. *Toxicology*. **2009**;255(1-2):45-52.
- [98] Lieder PH, York RG, Hakes DC, Chang SC, Butenhoff JL. A two-generation oral gavage reproduction study with potassium perfluorobutanesulfonate (K+PFBS) in Sprague Dawley rats. *Toxicology*. **2009**;259(1-2):33-45.
- [99] Lundin JL, Alexander BH, Olsen GW, Church TR. Ammonium perfluorooctanoate production and occupational mortality. *Epidemiology*. **2009**;20(6):921-8.
- [100] Olsen GW, Chang SC, Noker PE, Gorman GS, Ehresman DJ, Lieder PH, et al. A comparison of the pharmacokinetics of perfluorobutanesulfonate (PFBS) in rats, monkeys, and humans. *Toxicology*. **2009**;256(1-2):65-74.
- [101] Olsen GW, Butenhoff JL, Zobel LR. Perfluoroalkyl chemicals and human fetal development: an epidemiologic review with clinical and toxicological perspectives. *Reprod Toxicol*. **2009**;27(3-4):212-30.
- [102] Qazi MR, Xia Z, Bogdanska J, Chang SC, Ehresman DJ, Butenhoff JL, et al. The atrophy and changes in the cellular compositions of the thymus and spleen observed in mice subjected to short-term exposure to perfluorooctanesulfonate are high-dose phenomena mediated in part by peroxisome proliferator-activated receptor-alpha (PPAR α). *Toxicology*. **2009**;260(1-3):68-76.
- [103] Qazi MR, Bogdanska J, Butenhoff JL, Nelson BD, DePierre JW, Abedi-Valugerdi M. High-dose, short-term exposure of mice to perfluorooctanesulfonate (PFOS) or perfluorooctanoate (PFOA) affects the number of circulating neutrophils differently, but enhances the inflammatory responses of macrophages to lipopolysaccharide (LPS) in a similar fashion. *Toxicology*. **2009**;262(3):207-14.
- [104] Tardiff RG, Carson ML, Sweeney LM, Kirman CR, Tan YM, Andersen M, et al. Derivation of a drinking water equivalent level (DWEL) related to the maximum contaminant level goal for perfluorooctanoic acid (PFOA), a persistent water soluble compound. *Food Chem Toxicol*. **2009**;47(10):2557-89.
- [105] Walters MW, Bjork JA, Wallace KB. Perfluorooctanoic acid stimulated mitochondrial biogenesis and gene transcription in rats. *Toxicology*. **2009**;264(1-2):10-5.
- [106] Andersen ME, Butenhoff JL, Chang SC, Farrar DG, Kennedy GL, Jr., Lau C, et al. Perfluoroalkyl acids and related chemistries--toxicokinetics and modes of action. *Toxicol Sci*. **2008**;102(1):3-14.
- [107] Bjork JA, Lau C, Chang SC, Butenhoff JL, Wallace KB. Perfluorooctane sulfonate-induced changes in fetal rat liver gene expression. *Toxicology*. **2008**;251(1-3):8-20.
- [108] Chang SC, Thibodeaux JR, Eastvold ML, Ehresman DJ, Bjork JA, Froehlich JW, et al. Thyroid hormone status and pituitary function in adult rats given oral doses of perfluorooctanesulfonate (PFOS). *Toxicology*. **2008**;243(3):330-9.

- [109] Chang SC, Das K, Ehresman DJ, Ellefson ME, Gorman GS, Hart JA, et al. Comparative pharmacokinetics of perfluorobutyrate in rats, mice, monkeys, and humans and relevance to human exposure via drinking water. *Toxicol Sci.* **2008**;104(1):40-53.
- [110] Das KP, Grey BE, Zehr RD, Wood CR, Butenhoff JL, Chang SC, et al. Effects of perfluorobutyrate exposure during pregnancy in the mouse. *Toxicol Sci.* **2008**;105(1):173-81.
- [111] Fei C, McLaughlin JK, Tarone RE, Olsen J. Fetal growth indicators and perfluorinated chemicals: a study in the Danish National Birth Cohort. *Am J Epidemiol.* **2008**;168(1):66-72.
- [112] Fei C, McLaughlin JK, Lipworth L, Olsen J. Prenatal exposure to perfluorooctanoate (PFOA) and perfluorooctanesulfonate (PFOS) and maternally reported developmental milestones in infancy. *Environ Health Perspect.* **2008**;116(10):1391-5.
- [113] Longnecker MP, Smith CS, Kissling GE, Hoppin JA, Butenhoff JL, Decker E, et al. An interlaboratory study of perfluorinated alkyl compound levels in human plasma. *Environ Res.* **2008**;107(2):152-9.
- [114] Olsen GW, Mair DC, Church TR, Ellefson ME, Reagen WK, Boyd TM, et al. Decline in perfluorooctanesulfonate and other polyfluoroalkyl chemicals in American Red Cross adult blood donors, 2000-2006. *Environ Sci Technol.* **2008**;42(13):4989-95.
- [115] Reagen WK, Ellefson ME, Kannan K, Giesy JP. Comparison of extraction and quantification methods of perfluorinated compounds in human plasma, serum, and whole blood. *Anal Chim Acta.* **2008**;628(2):214-21.
- [116] Tan YM, Clewell HJ, 3rd, Andersen ME. Time dependencies in perfluorooctylacids disposition in rat and monkeys: a kinetic analysis. *Toxicol Lett.* **2008**;177(1):38-47.
- [117] Tao L, Kannan K, Wong CM, Arcaro KF, Butenhoff JL. Perfluorinated compounds in human milk from Massachusetts, U.S.A. *Environ Sci Technol.* **2008**;42(8):3096-101.
- [118] Alexander BH, Olsen GW. Bladder cancer in perfluorooctanesulfonyl fluoride manufacturing workers. *Ann Epidemiol.* **2007**;17(6):471-8.
- [119] Chang SC, Thibodeaux JR, Eastvold ML, Ehresman DJ, Bjork JA, Froehlich JW, et al. Negative bias from analog methods used in the analysis of free thyroxine in rat serum containing perfluorooctanesulfonate (PFOS). *Toxicology.* **2007**;234(1-2):21-33.
- [120] Ehresman DJ, Froehlich JW, Olsen GW, Chang SC, Butenhoff JL. Comparison of human whole blood, plasma, and serum matrices for the determination of perfluorooctanesulfonate (PFOS), perfluorooctanoate (PFOA), and other fluorocompounds. *Environ Res.* **2007**;103(2):176-84.
- [121] Fei C, McLaughlin JK, Tarone RE, Olsen J. Perfluorinated chemicals and fetal growth: a study within the Danish National Birth Cohort. *Environ Health Perspect.* **2007**;115(11):1677-82.
- [122] Grice MM, Alexander BH, Hoffbeck R, Kampa DM. Self-reported medical conditions in perfluorooctanesulfonyl fluoride manufacturing workers. *J Occup Environ Med.* **2007**;49(7):722-9.

- [123] Newsted JL, Coady KK, Beach SA, Butenhoff JL, Gallagher S, Giesy JP. Effects of perfluorooctane sulfonate on mallard and northern bobwhite quail exposed chronically via the diet. *Environ Toxicol Pharmacol*. **2007**;23(1):1-9.
- [124] Olsen GW, Burris JM, Ehresman DJ, Froehlich JW, Seacat AM, Butenhoff JL, et al. Half-life of serum elimination of perfluorooctanesulfonate, perfluorohexanesulfonate, and perfluorooctanoate in retired fluorochemical production workers. *Environ Health Perspect*. **2007**;115(9):1298-305.
- [125] Olsen GW, Mair DC, Reagen WK, Ellefson ME, Ehresman DJ, Butenhoff JL, et al. Preliminary evidence of a decline in perfluorooctanesulfonate (PFOS) and perfluorooctanoate (PFOA) concentrations in American Red Cross blood donors. *Chemosphere*. **2007**;68(1):105-11.
- [126] Olsen GW, Zobel LR. Assessment of lipid, hepatic, and thyroid parameters with serum perfluorooctanoate (PFOA) concentrations in fluorochemical production workers. *International archives of occupational and environmental health*. **2007**;81(2):231-46.
- [127] Scialli AR, Iannucci A, Turim J. Combining perfluoroalkane acid exposure levels for risk assessment. *Regul Toxicol Pharmacol*. **2007**;49(3):195-202.
- [128] Andersen ME, Clewell HJ, 3rd, Tan YM, Butenhoff JL, Olsen GW. Pharmacokinetic modeling of saturable, renal resorption of perfluoroalkylacids in monkeys--probing the determinants of long plasma half-lives. *Toxicology*. **2006**;227(1-2):156-64.
- [129] Butenhoff JL, Olsen GW, Pfahles-Hutchens A. The applicability of biomonitoring data for perfluorooctanesulfonate to the environmental public health continuum. *Environ Health Perspect*. **2006**;114(11):1776-82.
- [130] Hinderliter PM, Han X, Kennedy GL, Butenhoff JL. Age effect on perfluorooctanoate (PFOA) plasma concentration in post-weaning rats following oral gavage with ammonium perfluorooctanoate (APFO). *Toxicology*. **2006**;225(2-3):195-203.
- [131] O'Brien TM, Carlson RM, Oliveira PJ, Wallace KB. Esterification prevents induction of the mitochondrial permeability transition by N-acetyl perfluorooctane sulfonamides. *Chem Res Toxicol*. **2006**;19(10):1305-12.
- [132] Vanden Heuvel JP, Thompson JT, Frame SR, Gillies PJ. Differential activation of nuclear receptors by perfluorinated fatty acid analogs and natural fatty acids: a comparison of human, mouse, and rat peroxisome proliferator-activated receptor-alpha, -beta, and -gamma, liver X receptor-beta, and retinoid X receptor-alpha. *Toxicol Sci*. **2006**;92(2):476-89.
- [133] Xu L, Krenitsky DM, Seacat AM, Butenhoff JL, Tephly TR, Anders MW. N-glucuronidation of perfluorooctanesulfonamide by human, rat, dog, and monkey liver microsomes and by expressed rat and human UDP-glucuronosyltransferases. *Drug Metab Dispos*. **2006**;34(8):1406-10.
- [134] Butenhoff JL, Gaylor DW, Moore JA, Olsen GW, Rodricks J, Mandel JH, et al. Author reply to Kropp critique. *Regulatory Toxicology and Pharmacology*. **2005**;42(1):146-7.

- [135] Flaherty JM, Connolly PD, Decker ER, Kennedy SM, Ellefson ME, Reagen WK, et al. Quantitative determination of perfluorooctanoic acid in serum and plasma by liquid chromatography tandem mass spectrometry. *J Chromatogr B Analyt Technol Biomed Life Sci.* **2005**;819(2):329-38.
- [136] Hinderliter PM, Mylchreest E, Gannon SA, Butenhoff JL, Kennedy GL, Jr. Perfluorooctanoate: Placental and lactational transport pharmacokinetics in rats. *Toxicology.* **2005**;211(1-2):139-48.
- [137] Luebker DJ, York RG, Hansen KJ, Moore JA, Butenhoff JL. Neonatal mortality from in utero exposure to perfluorooctanesulfonate (PFOS) in Sprague-Dawley rats: dose-response, and biochemical and pharmacokinetic parameters. *Toxicology.* **2005**;215(1-2):149-69.
- [138] Luebker DJ, Case MT, York RG, Moore JA, Hansen KJ, Butenhoff JL. Two-generation reproduction and cross-foster studies of perfluorooctanesulfonate (PFOS) in rats. *Toxicology.* **2005**;215(1-2):126-48.
- [139] Olsen GW, Huang HY, Helzlsouer KJ, Hansen KJ, Butenhoff JL, Mandel JH. Historical comparison of perfluorooctanesulfonate, perfluorooctanoate, and other fluorochemicals in human blood. *Environ Health Perspect.* **2005**;113(5):539-45.
- [140] Butenhoff JL, Kennedy GL, Jr., Hinderliter PM, Lieder PH, Jung R, Hansen KJ, et al. Pharmacokinetics of perfluorooctanoate in cynomolgus monkeys. *Toxicol Sci.* **2004**;82(2):394-406.
- [141] Butenhoff JL, Kennedy GL, Jr., Frame SR, O'Connor JC, York RG. The reproductive toxicology of ammonium perfluorooctanoate (APFO) in the rat. *Toxicology.* **2004**;196(1-2):95-116.
- [142] Butenhoff JL, Gaylor DW, Moore JA, Olsen GW, Rodricks J, Mandel JH, et al. Characterization of risk for general population exposure to perfluorooctanoate. *Regul Toxicol Pharmacol.* **2004**;39(3):363-80.
- [143] Kennedy GL, Jr., Butenhoff JL, Olsen GW, O'Connor JC, Seacat AM, Perkins RG, et al. The toxicology of perfluorooctanoate. *Critical reviews in toxicology.* **2004**;34(4):351-84.
- [144] Lau C, Butenhoff JL, Rogers JM. The developmental toxicity of perfluoroalkyl acids and their derivatives. *Toxicol Appl Pharmacol.* **2004**;198(2):231-41.
- [145] O'Brien TM, Wallace KB. Mitochondrial permeability transition as the critical target of N-acetyl perfluorooctane sulfonamide toxicity in vitro. *Toxicol Sci.* **2004**;82(1):333-40.
- [146] Olsen GW, Church TR, Larson EB, van Belle G, Lundberg JK, Hansen KJ, et al. Serum concentrations of perfluorooctanesulfonate and other fluorochemicals in an elderly population from Seattle, Washington. *Chemosphere.* **2004**;54(11):1599-611.
- [147] Olsen GW, Burlew MM, Marshall JC, Burris JM, Mandel JH. Analysis of episodes of care in a perfluorooctanesulfonyl fluoride production facility. *J Occup Environ Med.* **2004**;46(8):837-46.
- [148] Olsen GW, Church TR, Hansen KJ, Burris JM, Butenhoff JL, Mandel JH, et al. Quantitative evaluation of perfluorooctanesulfonate (PFOS) and other fluorochemicals in the serum of children. *J Children's Health.* **2004**;2:53-76.

- [149] Perkins RG, Butenhoff JL, Kennedy GL, Jr., Palazzolo MJ. 13-week dietary toxicity study of ammonium perfluorooctanoate (APFO) in male rats. *Drug Chem Toxicol.* **2004**;27(4):361-78.
- [150] Shipley JM, Hurst CH, Tanaka SS, DeRoos FL, Butenhoff JL, Seacat AM, et al. trans-activation of PPARalpha and induction of PPARalpha target genes by perfluorooctane-based chemicals. *Toxicol Sci.* **2004**;80(1):151-60.
- [151] Thibodeaux JR, Hanson RG, Rogers JM, Grey BE, Barbee BD, Richards JH, et al. Exposure to perfluorooctane sulfonate during pregnancy in rat and mouse. I: maternal and prenatal (Erratum to Toxicol Sci 2003; 74; 369-381). *Toxicol Sci.* **2004**;82(1):359.
- [152] Xu L, Krenitsky DM, Seacat AM, Butenhoff JL, Anders MW. Biotransformation of N-ethyl-N-(2-hydroxyethyl)perfluorooctanesulfonamide by rat liver microsomes, cytosol, and slices and by expressed rat and human cytochromes P450. *Chem Res Toxicol.* **2004**;17(6):767-75.
- [153] Alexander BH, Olsen GW, Burris JM, Mandel JH, Mandel JS. Mortality of employees of a perfluorooctanesulphonyl fluoride manufacturing facility. *Occup Environ Med.* **2003**;60(10):722-9.
- [154] Lau C, Thibodeaux JR, Hanson RG, Rogers JM, Grey BE, Stanton ME, et al. Exposure to perfluorooctane sulfonate during pregnancy in rat and mouse. II: postnatal evaluation. *Toxicol Sci.* **2003**;74(2):382-92.
- [155] Olsen GW, Burris JM, Burlew MM, Mandel JH. Epidemiologic assessment of worker serum perfluorooctanesulfonate (PFOS) and perfluorooctanoate (PFOA) concentrations and medical surveillance examinations. *J Occup Environ Med.* **2003**;45(3):260-70.
- [156] Olsen GW, Logan PW, Hansen KJ, Simpson CA, Burris JM, Burlew MM, et al. An occupational exposure assessment of a perfluorooctanesulfonyl fluoride production site: biomonitoring. *AIHA J* (Fairfax, Va). **2003**;64(5):651-9.
- [157] Olsen GW, Church TR, Miller JP, Burris JM, Hansen KJ, Lundberg JK, et al. Perfluorooctanesulfonate and other fluorochemicals in the serum of American Red Cross adult blood donors. *Environ Health Perspect.* **2003**;111(16):1892-901.
- [158] Olsen GW, Hansen KJ, Stevenson LA, Burris JM, Mandel JH. Human donor liver and serum concentrations of perfluorooctanesulfonate and other perfluorochemicals. *Environ Sci Technol.* **2003**;37(5):888-91.
- [159] Seacat AM, Thomford PJ, Hansen KJ, Clemen LA, Eldridge SR, Elcombe CR, et al. Erratum to "sub-chronic dietary toxicity of potassium perfluorooctanesulfonate in rats" [Toxicology 183 (2003) 117-131]. *Toxicology.* **2003**;192:263-4.
- [160] Seacat AM, Thomford PJ, Hansen KJ, Clemen LA, Eldridge SR, Elcombe CR, et al. Sub-chronic dietary toxicity of potassium perfluorooctanesulfonate in rats. *Toxicology.* **2003**;183(1-3):117-31.

- [161] Thibodeaux JR, Hanson RG, Rogers JM, Grey BE, Barbee BD, Richards JH, et al. Exposure to perfluorooctane sulfonate during pregnancy in rat and mouse. I: maternal and prenatal evaluations. *Toxicol Sci.* **2003**;74(2):369-81.
- [162] Berthiaume J, Wallace KB. Perfluorooctanoate, perflourooctanesulfonate, and N-ethyl perfluorooctanesulfonamido ethanol; peroxisome proliferation and mitochondrial biogenesis. *Toxicol Lett.* **2002**;129(1-2):23-32.
- [163] Butenhoff J, Costa G, Elcombe C, Farrar D, Hansen K, Iwai H, et al. Toxicity of ammonium perfluorooctanoate in male cynomolgus monkeys after oral dosing for 6 months. *Toxicol Sci.* **2002**;69(1):244-57.
- [164] Hansen KJ, Johnson HO, Eldridge JS, Butenhoff JL, Dick LA. Quantitative characterization of trace levels of PFOS and PFOA in the Tennessee River. *Environ Sci Technol.* **2002**;36(8):1681-5.
- [165] Luebker DJ, Hansen KJ, Bass NM, Butenhoff JL, Seacat AM. Interactions of fluoroochemicals with rat liver fatty acid-binding protein. *Toxicology.* **2002**;176(3):175-85.
- [166] Seacat AM, Thomford PJ, Hansen KJ, Olsen GW, Case MT, Butenhoff JL. Subchronic toxicity studies on perfluorooctanesulfonate potassium salt in cynomolgus monkeys. *Toxicol Sci.* **2002**;68(1):249-64.
- [167] Starkov AA, Wallace KB. Structural determinants of fluoroochemical-induced mitochondrial dysfunction. *Toxicol Sci.* **2002**;66(2):244-52.
- [168] Case MT, York RG, Christian MS. Rat and rabbit oral developmental toxicology studies with two perfluorinated compounds. *Int J Toxicol.* **2001**;20(2):101-9.
- [169] Olsen GW, Burris JM, Burlew MM, Mandel JH. Plasma cholecystokinin and hepatic enzymes, cholesterol and lipoproteins in ammonium perfluorooctanoate production workers. *Drug Chem Toxicol.* **2000**;23(4):603-20.
- [170] Olsen GW, Burris JM, Mandel JH, Zobel LR. Serum perfluorooctane sulfonate and hepatic and lipid clinical chemistry tests in fluoroochemical production employees. *J Occup Environ Med.* **1999**;41(9):799-806.
- [171] Olsen GW, Gilliland FD, Burlew MM, Burris JM, Mandel JS, Mandel JH. An epidemiologic investigation of reproductive hormones in men with occupational exposure to perfluorooctanoic acid. *J Occup Environ Med.* **1998**;40(7):614-22.
- [172] Gilliland FD, Mandel JS. Serum perfluorooctanoic acid and hepatic enzymes, lipoproteins, and cholesterol: a study of occupationally exposed men. *Am J Ind Med.* **1996**;29(5):560-8.
- [173] Gilliland FD, Mandel JS. Mortality among employees of a perfluorooctanoic acid production plant. *J Occup Med.* **1993**;35(9):950-4.
- [174] Johnson JD, Gibson SJ, Ober RE. Cholestyramine-enhanced fecal elimination of carbon-14 in rats after administration of ammonium [¹⁴C]perfluorooctanoate or potassium [¹⁴C]perfluorooctanesulfonate. *Fundam Appl Toxicol.* **1984**;4(6):972-6.

- [175] Griffith FD, Long JE. Animal toxicity studies with ammonium perfluorooctanoate. Am Ind Hyg Assoc J. **1980**;41(8):576-83.
- [176] Ubel FA, Sorenson SD, Roach DE. Health status of plant workers exposed to fluorochemicals--a preliminary report. Am Ind Hyg Assoc J. **1980**;41(8):584-9.