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05/06/2008 10:53 AM To
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cc

bcc

Subject
Study: Immunologic Biomarkers in Relation to Exposure Markers of PCBs and Dioxins in Flemish Adolescents (Belgium)

Sierra Club
May 6, 2008

Stephen Johnson
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460
Resource Conservation and Recovery Act (RCRA) Docket Center
Via electronic submission at <rcra-docket@epa.gov
Docket ID No.: EPA-HQ-RCRA-2008-0123
Re: Study: Immunologic Biomarkers in Relation to Exposure Markers of PCBs and Dioxins in Flemish Adolescents (Belgium)

Dear Administrator Johnson:

The Sierra Club is submitting a series of additional public comments on the EPA's Proposed TSCA Import Exemption
rule for Veolia to import up to 40 million pounds of PCBs for incineration including references to numerous studies
of Health Problems from PCBs including children's health.

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Immunologic Biomarkers in Relation to Exposure Markers of PCBs and Dioxins in Flemish Adolescents (Belgium)

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Abstract
In this study, we investigated 17- to 18-year-old boys and girls to determine whether changes in humoral or cellular immunity or respiratory complaints were related to blood serum levels of polychlorinated biphenyls (PCBs) and dioxin-like compounds after lifetime exposure in Flanders (Belgium). We obtained blood samples from and administered questionnaires

to 200 adolescents recruited from a rural area and two urban suburbs. Physicians recorded medical history and respiratory diseases. We measured immunologic biomarkers such as differential blood cell counts, lymphocyte phenotypes, and serum immunoglobulins. As biomarkers of exposure, we determined the serum concentrations of PCBs (PCB 138, PCB 153, and PCB 180) and dioxin-like compounds [chemical-activated luciferase expression (CALUX) bioassay]. The percentages of eosinophils and natural killer cells in blood were negatively correlated with CALUX toxic equivalents (TEQs) in serum ($p = 0.009$ and $p = 0.05$, respectively). Increased serum CALUX TEQs resulted in an increase in serum IgA levels ($p = 0.05$). Furthermore, levels of specific IgEs (measured by radioallergosorbent tests) of cat dander, house dust mite, and grass pollen were also significantly and negatively associated with the CALUX TEQ, with odds ratios (ORs) equal to 0.63 [95% confidence interval (CI), 0.42-0.96], 0.68 (0.5-0.93), and 0.70 (0.52-0.95), respectively. In addition, reported allergies of the upper airways and past use of antiallergic drugs were negatively associated with CALUX TEQs, with ORs equal to 0.66 (0.47-0.93) and 0.58 (0.39-0.85), respectively. We found a negative association between IgGs and marker PCBs in serum ($p = 0.009$). This study shows that immunologic measurements and respiratory complaints in adolescents were associated with environmental exposure to polyhalogenated aromatic hydrocarbons (PHAHs). The negative correlation between PHAHs and allergic responses in adolescents suggested that exposure may entail alterations in the immune status. Key words: biomonitoring, biomarkers, CALUX, immunotoxicity, polychlorinated biphenyls. Environ Health Perspect 110:595-600 (2002). [Online 26 April 2002]

http://ehpnet1.niehs.nih.gov/docs/2002/110p595-600vandenheuvel/abstract.html

The Child Health Problems from PCBs suggest that the community of Port Arthur, Texas is being used as a dumping for incineration such as the request to import 40 million pounds of PCBs by Veolia even though a portion of the PCBs will be emitted as unburned air pollution and new dioxins and dibenzofurans formed in the cooling stack gases. Yet Veolia does not accurately measure and monitor all stack emissions of PCBs, dioxins and dibenzofurans as well as related dioxin-like chemicals from its facility.

Sincerely,

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