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## Dioxin-like POPs: Induced aryl hydrocarbon receptor transactivity in the Danish pregnant women

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Human exposure to lipophilic persistent organic pollutants (POPs) including polychlorinated dibenzo-*p*-dioxins/furans (PCDDs/PCDFs), polychlorinated biphenyls (PCBs) and organochlorine pesticide is ubiquitous. The individual is exposed to a complex mixture of POPs being life-long beginning during critical developmental windows. Exposure to POPs elicits a number of species- and tissue-specific toxic responses, many of which involve the aryl hydrocarbon receptor (AhR). We aimed to assess the actual level of dioxin-like activity in serum of 806 Danish pregnant women collected during 2011-2013. The bioaccumulated lipophilic serum POPs were extracted by solid phase extraction and clean-up on Supelco multi-layer silica column and florisil column. The integrated AhR transcriptional activity in the serum fraction was determined using the Hepa 1.12cR mouse hepatoma cell line carrying an AhR-luciferase reporter gene and expressed as pg TCDD equivalent (TEQ) per gram lipid after adjusted for the serum lipid. The AhR transactivity data was evaluated for possible association to the serum levels of 14 PCB congeners, 10 organochlorine pesticides and/or lifestyle factors. The preliminary results showed that 91.3% samples elicited agonistic AhR transactivity. The median level of AhR transactivity was 195 pg TEQ/g lipid. Pearson correlation analysis showed a weak positive correlation between dioxin-like activity and PCB 105. No significant correlation between serum dioxin-like activity and pregnant women age, gestational day at blood draw, BMI, smoking status and social economic status were observed.

### Biography

Manhai Long obtained her PhD degree in Medicine in 2007 from Aarhus University and works as Associate Professor of Human Toxicology at the Faculty of Health, Aarhus University, Denmark. She has participated in several international and national projects. She has published more than 30 papers in the international journals and has been serving as peer reviewer of several international journals.

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