Status of LEPR Gene in PCB-exposed Population: A Quick Look

Somiranjan Ghosh¹, Tomas Trnovec², Lubica Palkovicova³, Eric P. Hoffman⁴, Kareem Washington² and Sisir K. Dutta¹*

¹Department of Biology, Howard University, Washington DC, USA
²Department of Pediatrics and Child Health, Division of Genetics and Human Genetics, Howard University College of Medicine, Washington DC, USA
³Department of Environmental Medicine, Slovak Medical University, Bratislava, Slovak Republic
⁴Center for Genetic Medicine, Children’s National Medical Center, Washington, USA

KEYWORDS PCBs. Gene Expression. Leptin Receptor. Obesity

ABSTRACT Earlier, we have reported that Polychlorinated Biphenyls (PCBs) exposure in Slovak population has made differential gene expression that has linked to the possibilities of some diseases and disorder development in the studied population. Here we report that down-regulation of LEPR (Leptin receptor) gene in the 45-month children may have been following consequences in developing obesity later in life. A pilot high-throughput qRT-PCR [Taqman Low Density Array (TLDA)] study in a small population also corroborated the gene-expression results, and their pathways underlying the consequences of the diseases, amid further detailed large-scale population validation. The study shows the opportunity of predicting long-term effects of chemical exposures using selected genomic classifiers may reflect exposure effect and risk from environmental toxicants.