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研究报告

马金玲,宋小飞,张亚男,曾锋,牛晓君,伍健东.珠江三角洲地区男性血液中多溴联苯醚暴露水平与精液质量的研究[J].环境科学学报,2015,35(7):2274-2281

珠江三角洲地区男性血液中多溴联苯醚暴露水平与精液质量的研究

Investigation of polybrominated diphenyl ethers level in blood and male semen quality in Pearl River Delta region

关键词: [血液](#) [多溴联苯醚](#) [精液质量](#) [珠江三角洲地区](#)基金项目: [广东省大气环境与污染控制重点实验室开放基金\(No. 2013hj003\)](#)

作者 单位

马金玲 华南理工大学环境与能源学院, 广州 510006

宋小飞 华南理工大学环境与能源学院, 广州 510006

张亚男 中山大学附属第三医院, 广州 510630

曾 锋 中山大学化学与化学工程学院, 广州 510275

牛晓君 华南理工大学环境与能源学院, 广州 510006

伍健东 华南理工大学环境与能源学院, 广州 510006

摘要: 采集了珠江三角洲地区103名成年男性的血液和精液样本,运用冷冻干燥-ASE萃取-GC-MS方法测定了血液中多溴联苯醚(PBDEs)含量,并按照WHO的精子质量检测标准及仪器操作规范检测精液质量,分析了血液中PBDEs与男性精液质量之间的相关性,同时,探讨了不同因素与血液中PBDEs含量之间的关系.结果表明,不同年龄对血液中PBDEs含量的影响未呈现一致的趋势,除BDE-47外,不同体重指数(BMI)人群单个PBDEs含量差异不显著,吸烟者血液中PBDEs含量高于不吸烟者,饮酒者和不饮酒者则与之相反,随着学历升高,PBDEs含量水平未有递增或递减的一致规律,BDE-153、BDE-154和BDE-183含量与精液浓度显著负相关,而PBDEs与精子活动性不相关.因此,血液中PBDEs含量与珠江三角洲地区男性精液质量无显著相关性.

Abstract: The blood and semen samples of 103 adult men in Pearl River Delta region were collected. The concentration of polybrominated diphenyl ethers (PBDEs) in blood was mensurated using freeze-drying-ASE extraction-GC-MS, and semen quality was detected in accordance with WHO testing standards for sperm quality and operation standard of instrument, to analyze the correlation between PBDEs in blood and semen quality, and explore the relationship between the different factors and PBDEs concentrations in blood. The impact of different ages on PBDEs concentrations in blood did not present the same trend. Except for BDE-47, single PBDEs concentration in different BMI groups was not significantly different. PBDEs concentrations in blood for smokers were higher than that for non-smokers, which was contrary to drinkers and non-drinkers. PBDEs concentrations had no consistent law of diminishing or increasing with the increase of educational level. BDE-153, BDE-154 and BDE-183 had significantly negative correlation with sperm concentration, but PBDEs and sperm motility were not correlated significantly. Therefore, PBDEs in blood had no significant correlation with male semen quality in Pearl River Delta region.

Key words: [blood](#) [polybrominated diphenyl ethers](#) [semen quality](#) [Pearl River Delta region](#)

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服务热线: 010-62941073 传真: 010-62941073 Email: hjxxb@rcees.ac.cn

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