seeable manner or misused. Product risk assessment approaches are based on scientific evidence and sound judgments to the extent practical. The approaches rely less on qualitative measures and theoretical analyses, which may lead to subjective judgments and incorrect conclusions and undermine the credibility of the risk assessment process, the product manufacturer, and possibly government officials charged with protecting consumer health and safety.

T2 环境与生态毒理学

T2.1 生态风险评估与水环境基准研究进展

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摘要：我国环境污染逐渐呈现出复合性、多元性、结构性污染的特点，水环境污染已从地表水延伸到地下水，从一般污染物扩展到有毒有害污染物，形成了点源与面源共存，生活污染和工业排放叠加，新旧污染与二次污染相互复合的态势。主要介绍近年来，在环境与生态毒理学领域，开展以流域水环境特征污染物的生态风险评估、毒理学机制为核心内容的我国水环境质量基准方法如水生生物模式物种筛选、毒理学指标识别及基准阈值数理方法研究进展，增强环境基准与环境标准相关领域的基础研究能力，为环境质量评价、环境风险控制与管理提供科学支持。

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T2.2 东苕溪流域上游地区典型农田土壤滞留功能风险评价

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摘要：越来越多的毒性物质在土壤中积累，可能通过食物链污染粮食和蔬菜，或对生态系统产生潜在影响，甚至土壤污染物也可能通过淋溶、渗漏等方式对地下水及水生生态系统造成威胁。污水灌溉、农药施用导致的农田土壤重金属、农药残留分析和行为特征研究较多，但针对土壤中各种污染物积累的综合效应及生态风险研究则较少。污染土壤对水生环境影响的研究被称为土壤滞留功能评价，是土壤生态风险评价工作的重要组成部分。快速筛选和评价生态毒性的生物学方法包括 SOS/umu 荧光检测实验和 Ames 实验，与化学分析相比生物学方法更为简单快速，测试结果更为直观。东苕溪上游地区都以高密集型畜禽、水产养殖、种植业为主，大量含有抗生素、激素、重金属等的养殖废水通过灌溉方式进入农田；农业种植使用的化肥、农药也不断在农田土壤中累积，导致东苕溪农田土壤可能存在各类物质的复合污染。本研究通过 SOS/umu 实验和 Ames 实验对东苕溪流域上游典型区的菜园土、水稻土、竹林土壤样品滞留功能进行评价，结果显示，菜园土土壤样品的急性生态毒性、潜在生态和遗传毒性研究结果均为阳性；水稻土土壤样品的急性生态毒性为阴性，潜在生态和遗传毒性研究结果为阳性，竹林土壤样品的急性生态毒性、潜在生态和遗传毒性研究结果均为阴性，说明菜园土土壤、水稻土壤部分滞留功能已受到破坏，可能对地下水和水生生态系统造成潜在威胁。

关键词：土壤滞留功能；SOS/umu 实验；Ames 实验；风险评价

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T2.3 Developing a conceptual model and conducting a preliminary risk assessment for a former chemical manufacturing site in Nanjing City, China

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Abstract: Recently DuPont, Nanjing University and BCEG began collaborative work at a former chemical manufacturing site in Nanjing City, China. The goal was to use this as a pilot ortest site to conduct a remediation project. The relatively small former chemical manufacturing site is located adjacent to other chemical manufacturing operations, roadways, a housing development, and community vegetable gardens. Since the project began, old buildings have been razed, several phases of soil and groundwater sampling have been completed, and that work has provided data sufficient to build apreliminary conceptual model and to conduct a screening-level human health risk assessment. While contamination in surficial and sub-surface soils appears to be relatively limited, some contaminants have been found in groundwater samples. Some of the contaminants in groundwater are found at levels above risk-based screening levels suggesting the need for additional investigation to identify source material and understand fate and transport within the subsurface soil and groundwater. In addition, further sampling is underway in the small community gardens to determine if vegetables are being grown in contaminated soil. These current data indicate there will likely be a need to evaluate remedial options that will prevent migration of contaminants through the subsurface, and which will mitigate potential human exposures to contaminants. In this presentation we will discuss the development of the conceptual model, initial results of the risk assessment, and steps to begin evaluating potential remedial options.

T2.4 PI3K/Akt 与 Nrf2-ARE 通路对低剂量 HBCD 诱导的细胞增殖及氧化应激效应的调控作用

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摘要：目的 本研究将明确低剂量六溴环十二烷(HBCD)暴露的生物效应,以 PI3K/Akt 通路与 Nrf2-ARE 通路为主线研究低剂量 HBCD 对细胞增殖及氧化应激的调控机制,并进一步探索 PI3K/Akt 与 Nrf2-ARE 通路在功能上的相互作用。**方法** 以细胞生长及氧化应激效应为切入点,以正常人胚肝细胞(L02)为研究对象,将 L02 细胞暴露于低剂量 HBCD($1\times10^{-7}\sim1\times10^{-11}$ μmol·L^{-1})中,研究低剂量 HBCD 对细胞增殖的影响;通过免疫印迹检测关键信号分子的表达及磷酸化水平,辅以免疫荧光与 EMSA 实验对 Nrf2 的核转位及其转录活性进行检测,并进一步利用 RNA 干扰与 PI3K 抑制剂研究低剂量 HBCD 对细胞增殖及氧化应激的调控机制。**结果** 低剂量 HBCD 可以刺激 L02 细胞的生长,诱导细胞中活性氧自由基(ROS)水平的升高,同时促进细胞增殖核抗原(PCNA)高表达。HBCD 可以通过 PI3K 靶基因 Akt 蛋白上 Ser^{473} 位点