

## ENVIRONMENTAL TOXICOLOGY AND RISK ASSESSMENT

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Importance of environmental toxicology, dose-response relationship, hazard and risk; Routes of exposure, toxico-kinetics, oral route, dermal route, inhalation route, distribution, elimination, absorption and bioavailability; Mechanism of action, endocrine disruption, cytotoxic, enzyme inhibition, reproductive toxicology, teratology, biotransformation and secondary effect; Data sources for exposure risk characterization; Toxicology/epidemiology–Biomarkers; Ecology Trophic levels, BCF (bio concentration factor), BCF modeling, indicator species; Integrated exposure assessment – (case studies); Physiological-based Pharmacokinetic (PBPK) Models EU; Application of statistical and Monte Carlo simulations and other techniques for probabilistic exposure assessment; Risk Characterization, communication and decision making