EUROPEAN COMMISSION
DIRECTORATE-GENERAL HUMAN RESOURCES AND SECURITY
Directorate HR.AMC –Account management Centre
HR.DDG. AMC 8

2018-IPR-F-000-9867	**Trainee on physiologically based kinetic modelling for mixture risk assessment**

Position for: Trainee	As the science and knowledge service of the Commission, the mission of Joint Research Centre is to support EU policies with independent evidence throughout the whole policy cycle. The JRC is located in 5 Member States (Belgium, Germany, Italy, the Netherlands and Spain). Further information is available at: http://www.jrc.ec.europa.eu **Short description of activity:** The Chemical Safety and Alternative Methods (F.3) including The European Union Reference Laboratory for alternatives to animal testing (EURL ECVAM), is part of the Directorate F for Health, Consumers and Reference Materials. We develop, evaluate, harmonise and promote innovative methods for the regulatory safety assessment of chemicals. We provide support to a broad range of policy areas including industrial and household chemicals, cosmetics, food, plant protection products, endocrine disrupters and chemical mixtures. Information on the human toxicokinetics of chemicals is crucial in their safety assessment. Toxicokinetics determine what part of the external exposure to a chemical reaches the systemic circulation and potential target organs. Whole-body toxicokinetics can be simulated by in silico physiologically-based kinetic (PBK) models. The traineeship position will give support to ongoing activities in relation to computer-based modelling as an alternative to animal testing. The project will focus on developing and using PBK models for different applications: 1. In vitro to in vivo extrapolation (IVIVE), which will allow extrapolation of biologically effective in vitro concentrations to relevant human in vivo doses; 2. Reverse dosimetry to estimate the human exposure based on human biomonitoring data for various chemicals.

	The trainee's main task will be to collaborate and support the generation of several PBK models in the context of an in-house project on chemical mixtures & human biomonitoring. The initial task will include development of PBK models to understand the absorption, distribution, metabolism and excretion for different classes of chemicals. This will be done by developing the mathematical equations, retrieving the parameters (physiological and anatomical, physicochemical and biokinetic) needed to parameterise the model, and human in vivo data (if available) to evaluate model performance. The research will support the development of case studies illustrating how PBK modelling can be applied in chemical risk assessment. Chemical Safety and Alternative Methods is part of the Directorate General Joint Research Centre (JRC) – Health, Consumers and Reference Materials that is based in Ispra, Italy. For more information visit https://ec.europa.eu/jrc/en/research-topic/alternatives-animal-testing-and-safety-assessment-chemicals and/or http://eurl-ecvam.jrc.ec.europa.eu/ **Qualifications:** Essential: • Master's degree in computational toxicology, computational chemistry, pharmacology, toxicology, chemistry, biology, biotechnology, mathematics, biostatistics, or related fields. • Good level of English (level B2) • Programming skills in R or Berkley Madonna (or similar coding programs) Advantage: • Modelling experience • Understanding of biology and IVIVE approaches • Knowledge of interpretation of in vitro data and/or human biomonitoring **For general eligibility requirements, please read the rules governing the traineeship scheme of the JRC:**

	https://ec.europa.eu/jrc/en/working-with-us/jobs/temporary-positions/jrc-trainees
Unit /Directorate	Directorate F – F.3 – Chemical Safety and Alternative Methods Unit Further information: https://eurl-ecvam.jrc.ec.europa.eu/
Indicative duration **Preferred starting date**	5 months As soon as possible
JRC Site **Country**	Ispra Italy
JRC contact details	**For any technical problems with your application, please contact:** HR-AMC8-RECRUITMENT-TOOLS-SUPPORT@ec.europa.eu