



Company: WRC

Knowledge Transfer Partnership: Identifying microplastics to understand their impact on health and environment.

The Water Research Centre Ltd. (WRC), part of the RSK Group, is an independent Centre of Excellence for Innovation and Growth. This project aims to develop risk assessment tools that incorporate New Approach Methodologies (NAMs) alongside traditional desk-based data gathering to assess the potential hazards presented by microplastics.

Challenge

Microplastics are being found everywhere – including in our bodies. Part of WRC's business is working with the scientific community to develop alternatives to animal testing.

WRC working with Queen Mary, will use relevant human tissue and in silico models in this Knowledge Transfer Partnership (KTP). As recommended by the Organisation for Economic Co-operation and Development (OECD), the work will focus on nanolitre-scale, proteomic analysis and advanced imaging systems to identify chemicals that can impact key pathways of human disease. The combined risk assessment and toxicology testing will be the first-of-its-kind for the development of a microplastic risk assessment consulting service in the UK. Methods developed as part of this work will be validated and

recommended to OECD to create global standard protocols for microplastic risk assessment.

The KTP Plan 2023

Water samples collected from different UK locations are processed by filtration and dried for analysis. Microplastics particles will be characterised and stratified based on the size, shape, polymer type and additives using FT-IR Imaging. Identified chemicals will fall in two categories (chemicals with toxicological data in the public domain, and those with no toxicological data) and tested via in silico testing for toxicity predictions.

This project is a new addition to Queen Mary's KTP project portfolio.

What Next?

No reliable microplastics risk assessment is yet in existence. This partnership is an

essential step forward for microplastic methodology and technology worldwide as the need to mitigate microplastic exposure risks to human health and the environment.



The KTP provides an Early Career Researcher like me with a brilliant opportunity to build a relationship with the industry. I look forward to the journey of developing new microplastic risk assessment tools with WRC and the potential outcome of impacting public health within the UK and beyond and for many years to come."



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