




IMP

TOX



A scientific project to
**UNDERSTAND THE HEALTH EFFECTS
OF MICRO- AND NANOPLASTICS**
with a focus on allergic disease

THE PROBLEM

Micro- and nanoplastics (MNPs) are tiny plastic particles that form when larger items of plastic degrade, or are manufactured and added to commercial products, such as synthetic textiles, cosmetics or paints.

These minuscule pieces can be found anywhere on earth including our bodies as they enter our organism through food, water and air;

yet we currently do not have the tools to characterise and quantify them with precision, nor do we understand how they affect human health.



THE PROJECT

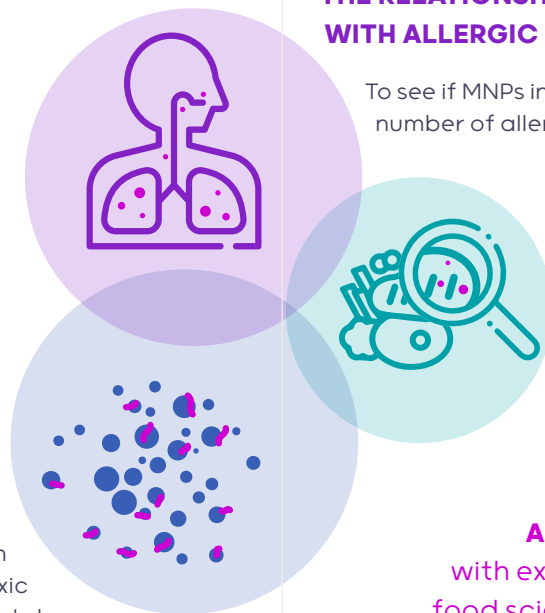
*“In Imptox we intend to untangle the multifaceted relationship of exposure routes, risks and health impacts of MNPs, while **focusing in particular on allergic disease.**”*

Tanja Ćirković Veličković

Imptox Coordinator,
University of Belgrade, Faculty of Chemistry

EVALUATING THE ROLE OF MNPS AS VECTORS FOR CONTAMINANTS

To understand the interaction and the health impact of MNPs combined with potentially toxic biotic and abiotic materials, including metals, allergens and pathogenic bacteria and their toxins.



UNDERSTANDING THE RELATIONSHIP OF MNPS WITH ALLERGIC DISEASE

To see if MNPs in food and air can increase the number of allergic people or worsen their allergies.

IMPROVING EXPOSURE ASSESSMENT

To understand the level of exposure to micro- and nanoplastics in food, water and air.

We are
A MULTIDISCIPLINARY TEAM OF SCIENTISTS
with expertise in a wide range of fields including
food sciences, allergy, immunology, biomedicine,
chemistry, bioinformatics and others.



THE WORKPLAN

MNPS IN FOOD AND AIR

We plan to quantify and characterise MNPs in seafood and coastal aerosol and to investigate the accumulation of nanoplastics in plants irrigated with water containing NPs.

MNPS AND CONTAMINANTS

We intend to evaluate the impact of potentially harmful microplastics cargo material on human health. This includes the study of microbial colonisation on the surface of MPs to assess a possible promotion of antibiotic resistance and virulence within microbial communities.

NEW TOOLS

We aim to develop and optimise analytical tools for MNP detection and characterisation beyond the current state-of-the-art. This will include the production of model MNPs and the design of methods to quantify and track MNPs in complex matrices.

IN VITRO AND IN VIVO TESTING

We will carry out *in vivo* and *in vitro* studies to understand cellular and systemic responses to MNP exposure with and without allergen cargo.

CLINICAL STUDIES

We will conduct clinical studies with children living in cities and by the seaside to determine links between MNP exposure and allergic disease.





OUTREACH & GUIDANCE

We plan to deliver data and its ramifications to help decision makers, risk assessors and regulators safeguard our air, water and food supply.

For that purpose we plan to work closely with Non-Governmental Organizations, stakeholders from industry and business, policymakers, scientists and our fellow CUSP projects.

SYNERGIES IN ACTION

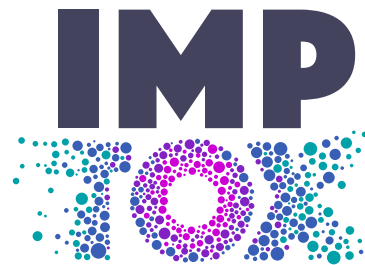
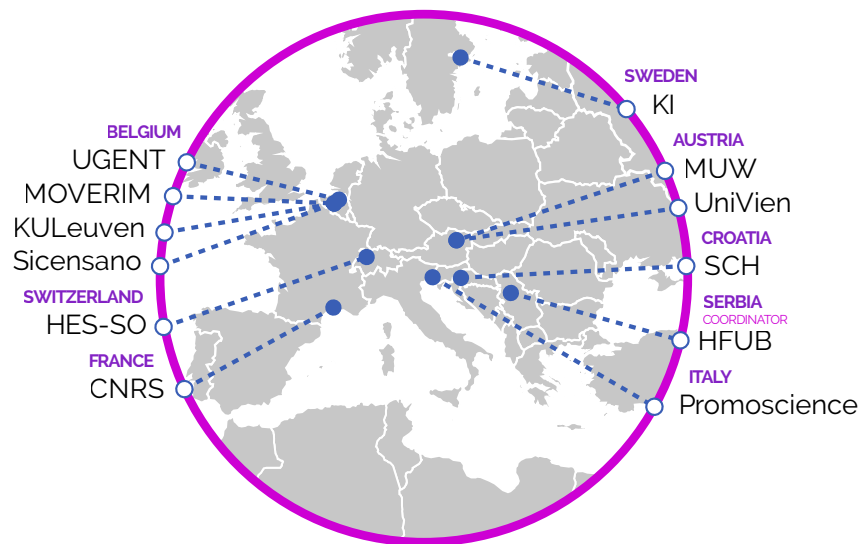
Imptox is one of five Horizon 2020 projects that form [The European Research Cluster to Understand the Health Impacts of Micro- and Nanoplastics, CUSP](#).

CUSP's scientific results will contribute to the European Strategy for Plastics in a Circular Economy, the Bioeconomy Strategy, the REACH restrictions on intentionally added MNPs and future regulatory frameworks.



THE TEAM

A multidisciplinary consortium of **12 partners**
from **8 European countries**.





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