

Discipline : Microbiologie - Santé - Environnement

Sujet : Interactions Microplastiques et Pathogènes – Analyse des Transferts et des Conséquences

Acronyme : IMPACT

Mots clés : Cryptosporidium, Microplastics, Contaminants, Health, Environment

Direction de thèse : Favennec Loic

Unité de recherche : UR7510 ESCAPE

Etablissement : Université de Rouen Normandie

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Microplastics (MPs) are ubiquitous in the environment and can persist for decades or centuries. This longevity raises significant concerns regarding both human health and ecological systems. Emerging research indicates that MPs may function as vectors for various pathogens, thereby underscoring the necessity for a comprehensive understanding of their potential impacts. Among these pathogens, *Cryptosporidium*, a protozoan parasite, is particularly alarming due to its association with digestive and respiratory diseases that can become life-threatening, especially for immunocompromised individuals.

The combined exposure to MPs and *Cryptosporidium* presents threat to human health, with the potential to aggravate chronic inflammation, disrupt the gut microbiome, and heighten the risk of cancer in digestive tissues. This cutting-edge, multidisciplinary research project aims to uncover the key mechanisms behind the interaction between MPs and *Cryptosporidium*, which compromise gut health and drive precancerous changes. By combining in-depth environmental studies with targeted experiments on mouse models, we seek to produce insights into how this harmful synergy affects human health.

This project will improve risk assessments related to combined exposures with these contaminants while establishing a scientific basis for public health and environmental policies. Through this approach, we seek to fill a research gap regarding the health impacts of MPs and to guide initiatives focused on mitigating the risks linked to their environmental presence.