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Establishing safe and sustainable pharmaceutical life cycles by design

Contact Us

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Co-funded by the European Union

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#Be greener, be... E TERNAL



Research and innovation contributing to sustainable future access to medicines through full life cycle approaches covering pharmaceutical design, manufacture, use, and disposal



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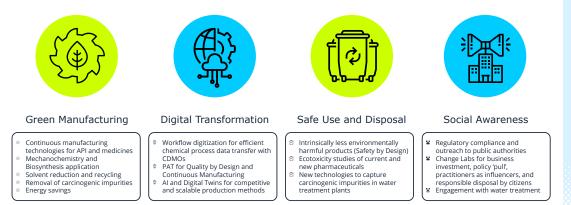
Ongoing access to safe, high quality and effective medicines for citizens and animals is a vital part of fulfilled, equitable living. At the same time, we must avoid any undue impact of pharmaceutical residues on the environment. Indeed, our health and well-being strongly depend on a healthy environment.

About ETERNAL

Boosting reduced environmental impacts of pharmaceutical products throughout their entire life cycle, the ETERNAL project is a four-year HORIZON Research and Innovation Action running until August 2026. It brings together sixteen partners from across Europe united by the motivation to contribute to sustainable development of pharmaceutical manufacture, use and disposal.

Our industry-research-compliance partnership is mobilizing to:

- co-design application-industry oriented R&D and scale-up in six industrial case studies focused on Green Chemistry, Mechanochemistry, and Digitalization as key enabling technologies
- assess the regulatory implications of adopting the innovations to ensure a pathway to compliance
- generate new scientific knowledge on the environmental fate and eco-toxicological effects of pharmaceuticals; and
- catalyze behavioural change, participation and social innovation for reducing the environmental impacts of pharmaceuticals in terms of safe use and disposal.



Innovation enabling...



Reduced use of solvents

Application of greener solvents

Optimized solvent recycle/recovery options for processes with potentially carcinogenic impurities like nitrosamines

Application of mechanochemistry (Holt Melt Extrusion) in the production of pharmaceutical products

with biobased products

More eco-efficient purification/capture routes for solvents and wastewater

Innovative workflow digitalization, PAT and Digital Twin solutions to enable Ouality by Design and Continuous Manufacturing for competitive and scalable methods of production

Project Partners

The ETERNAL consortium brings together complementary knowledge and expertise from academic and specialist research institutes, leading businesses in the pharmaceutical industry, and innovative SME businesses in whole process design, technology/digitalization, environmental engineering, innovation services, and international scientific and regulatory affairs.

