ETERNAL project

New collaborative project to boost reduction of the environmental impact of pharmaceutical products through their entire life cycle

Valencia, 28th September 2022: The ETERNAL project held a successful kick-off meeting in Valencia, Spain on 27th and 28th September. This new four-year EC Horizon Europe Research and Innovation Action will contribute to sustainable development of pharmaceutical manufacture, use and disposal, by using and promoting full life cycle approaches covering design, manufacture, usage, and disposal, assessing the environmental risks of not only active pharmaceutical ingredients and residues or metabolites, but other chemicals and by-products of the production process. In other words, safe and sustainable pharmaceutical lifecycles by design.

This sort of approach is essential to fully consider the types of green manufacturing currently under consideration by the pharmaceutical industry, something reflected in the range and scope of case studies that will be undertaken within the project. Specific application of the risk and life cycle assessment approaches being developed in the project to six ETERNAL case studies is a key element of the project's workplan and will provide industry and policymakers with key examples of how whole life cycle assessment may be used to evaluate the changes in environmental impacts expected due to the introduction of green manufacturing processes.

Funded under the European Union's Horizon Europe Framework Programme (with GA number 101057668) under the destination of maintaining an innovative, sustainable, and globally competitive health industry, ETERNAL will contribute to the broad challenge of maintaining ongoing access to safe, high quality and effective pharmaceutical treatments for citizens and animals whilst ensuring sustainable supply chains and consumption patterns and avoiding undue impacts of pharmaceutical residues on the environment.

To meet this ambition the ETERNAL partners will advance a roadmap of relevant technological innovations - in biocatalysis, carcinogenic impurity capture, substitution of nonrecycled solvents, appropriate treatment of recycled solvents, membrane technology, continuous manufacturing processing and digitalization - towards green production methods and one-step disposal where drugs are fully metabolized in the body and break down immediately and harmlessly in the environment.

Asphalion will provide regulatory guidance to support understanding of the environmental exposure and ecotoxicity during pharmaceuticals development to ensure the solutions are commercially deployable in the future through a compliant by design approach according to applicable regulatory guidelines and technical standards. Due to Asphalion expertise in the regulatory field, Asphalion will also engage with policy makers, regulators and standards bodies to ensure a regulatory framework that enables green innovation.

The project partners will also be working proactively with other specialist researchers using holistic approaches to increase understanding of the environmental impact and toxicity of pharmaceuticals among industry, the research community, and regulators to inform pharmaceutical strategies and

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policies based on scientific evidence. Finally, ETERNAL will seek to create opportunities to catalyze behavioural change by piloting campaigns to inform consumers and patients about safe disposal methods for unused or expired medicines and promote the prescription of sustainable drug options among healthcare practitioners.

The ETERNAL consortium represents a powerful team of sixteen parties bringing together knowledge and perspectives from the EU pharmaceuticals manufacturing value-chain, world-leading academics, specialist research centres and innovative SME. The project is being coordinated by the Instituto Tecnológico del Plástico (AIMPLAS), a leading Spanish Research and Technology Organisation with an active interest in addressing the sustainability challenges facing the health industry.

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