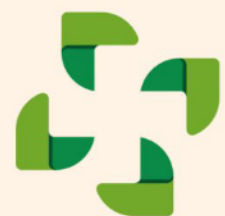




The novel platform will enable regulators and industry to identify, quantify and prevent cardiotoxic co-exposures to industrial chemicals and pharmaceuticals in a cost-effective way.

A European Green Deal  
Striving to be the first climate-neutral continent



**ALTERNATIVE**

**BUILDING THE INNOVATIVE  
PLATFORM FOR DETECTING THE  
CARDIOTOXICITY OF CHEMICALS**

<https://alternative-project.eu/>

Environmental toxicity  
chemical mixtures through  
an innovative platform  
based on aged cardiac  
tissue model



## TARGET AUDIENCES



Policymakers & regulators



Scientific community in the areas of toxicology and biomaterials



National health services in Europe



Environmental & health-related NGOs and citizen initiatives in Europe



Pharma companies and agricultural industry



ALTERNATIVE

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101037090

## PROJECT RESULTS

Improved understanding of the **regulatory utility** of complex **in vitro 3D models** versus simpler 2D models



**Scientific evidence** to enable **prevention and mitigation of co-exposure** to pharmaceuticals and industrial chemicals in the environment and the technosphere



**Improvement** of existing **risk assessment approaches** to reduce the most critical exposures, including setting limit values, assessment of new regulatory approaches such as **Mixture**

## CONTACT DETAILS



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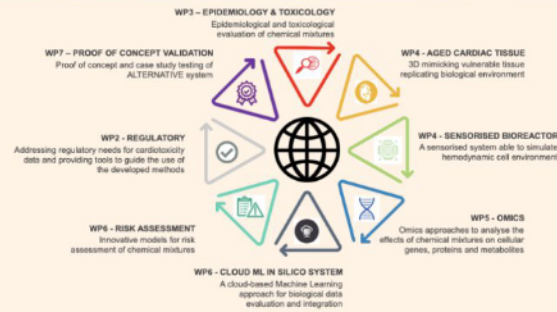


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## CONSORTIUM PARTNERS



## Building the Innovative Platform to Assess the Cardiotoxicity of Chemicals and their bio-transformation products

### NOVEL PLATFORM

ALTERNATIVE novel platform will enable regulators and industry to identify, quantify and prevent cardiotoxic co-exposures to industrial chemicals and pharmaceuticals in a cost-effective way.

### MACHINE LEARNING

The platform will be coupled with a reliable, high-throughput monitoring system based on multi-omics analyses, and integrated into a Machine Learning (ML) risk assessment tool.

The platform will consist of a three-dimensional tissue engineering in-vitro model mimicking the human cardiac tissue.

In addition, ALTERNATIVE will modify the tissue model to reproduce the aged myocardial tissue and elucidate the adverse effects of chemicals on older people.

### DECISION-HELPER

ALTERNATIVE will also provide systematic reviews of high-quality epidemiological studies to support integrated in-vitro and in-silico data, giving a more robust basis for regulatory decisions.

ALTERNATIVE's proof-of-concept validation will be performed on well-known mixtures of pollutants, affecting different environmental compartments, and selected via epidemiological, toxicological and modelling expertise.

### ALTERNATIVE platform will be an Innovative tool

for complying with the current regulation associated with the assessment of chemical compounds. It will be a new instrument to evaluate unpredictable toxicity due to synergistic effects of different chemicals, additionally worsened by the human ageing process.

