

RISK-HUNT3R in a nutshell

Establishing a reliable and cost-effective chemical risk assessment strategy based on novel approaches.

p. 2

The modular testing strategy

The RISK-HUNT3R strategy is exposure-led and hypothesis-driven and uses a tiered and iterative approach.

p. 3

RISK-HUNT3R as part of ASPIS

The ASPIS project cluster aims to advance safety assessment of chemicals without the use of animal testing.

p. 4

Efficient navigation requires a map

RISK-HUNT3R has teamed up in ASPIS and with stakeholders in a series of virtual events to identify urgent regulatory needs.

p. 4

RISK-HUNT3R in a nutshell

Establishing a reliable and cost-effective chemical risk assessment strategy based on novel approaches

Scientific advances in in-silico and in-vitro testing have greatly increased the opportunities of these new approach methods (NAMs) for application in chemical safety assessment.

“Despite successful integration of various NAMs in pre-marketing chemical safety testing, the remaining challenges for animal-free approaches in risk assessment have become more evident”, indicates Prof. Hennicke Kamp (BASF).

The RISK-HUNT3R NAM-based strategy for next-generation risk assessment (NGRA) will provide a framework for chemical safety assessment in regulatory acceptance and drive practical application of NGRA. The project was explicitly designed around regulatory expertise. *“This will allow translating the research effort into fit-for-purpose risk assessment frameworks and strategies in a straightforward manner”* reports Dr. Mirjam Luijten (RIVM).

The project will develop, validate and implement integrated approaches to NGRA using innovative, mechanism-based, and human-relevant NAMs. The strategy reflects the NGRA concept: i) exposure-led, ii) hypothesis-driven, and iii) based on testing with NAMs. *“We collected, under one roof, different innovative test systems and cutting-edge in-silico models for hazard identification, and will integrate these with systematic evaluation of human exposure scenarios”,* comments Prof. Marcel Leist (University of Konstanz).

The aim of the project is to better protect citizens against hazardous compounds through non-animal methods while enabling the development of safe and sustainable alternatives in line with the toxic-free environment goal of the European Commission’s Green Deal.

“The integrated testing strategy will provide unprecedented and reliable protection of the human population against chemical-related health effects.”

– Prof. Bob van de Water (Leiden University, coordinator)

Fact sheet

RISK-HUNT3R stands for RISK assessment of chemicals integrating HUman centric Next generation Testing strategies promoting the 3Rs (Replacement, Reduction and Refinement of animal-based models)

The consortium counts 37 partners (24% SME, 16% industry, 55% academia, and 5% regulatory organizations) and runs from 2021 to 2026

Funded budget of €23M from the EC Horizon 2020 programme



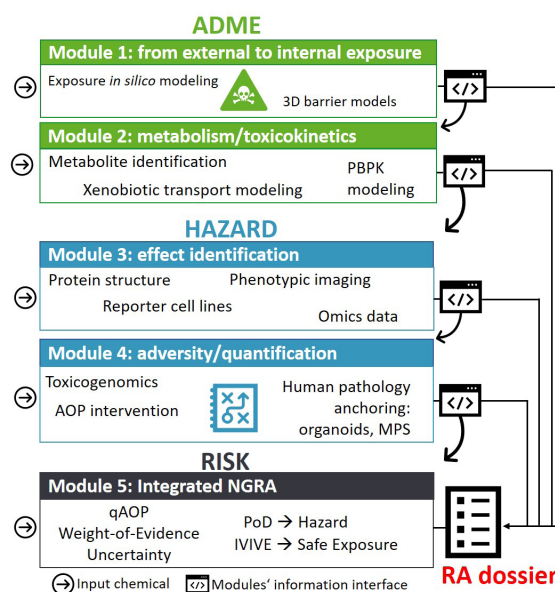
The modular testing strategy

The RISK-HUNT3R strategy is exposure-led and hypothesis-driven and uses a tiered and iterative approach

RISK-HUNT3R will use a tiered and iterative approach for chemical testing. The number of resources allocated to conducting a risk assessment should, to some extent, be determined by the level of concern, like preliminary data on particular hazards or knowledge on wide-spread and high exposure.

RISK-HUNT3R proposes an NGRA framework composed of logical assessment elements that are essential for risk assessment to ensure protection against human systemic health effects, from problem formulation and the exploration of exposure situations (modules 1 and 2) to hazard characterization (modules 3 and 4) and integrated risk assessment (module 5).

Each module is an independent and self-informative element of which output information translates to the next module via interfaces. The modular safety testing approach of RISK-HUNT3R is designed to provide



alerts for most, if not all, potentially relevant adverse effects concerning STOT (specific target organ toxicity), DNT (developmental neurotoxicity), and NGC (non-genotoxic carcinogenicity).

[:::][:::][:::][:::][:::][:::][:::][:::]

Press review

“A framework for chemical safety assessment incorporating new approach methodologies within REACH” by Ball et al. 2022 (PMID: 35103819).

As part of the ECE-TOC Transformational Programme, the paper includes contributions from RH3R and its advisory board.

It describes a stepwise implementation framework for NAMs in chemical risk

assessment.

Technical progress of in-silico and in-vitro methods has been made, but fitting new technology into the existing regulatory systems is proving to be difficult.

The authors highlight that it is time to capitalise on the long-term investments in NAMs.

NAMs are not just based on their technological merits, but also introduce new concepts to safety evaluation.

The implementation of a

tiered approach described in the publication would pinpoint the most effective way to generate the necessary information and to assess safety. But in absence of an effective push strategy, conservative opinions will prevail. “There is a need to step forward and this step should be driven by the regulatory agencies and by public understanding.”

RISK-HUNT3R as part of ASPIS

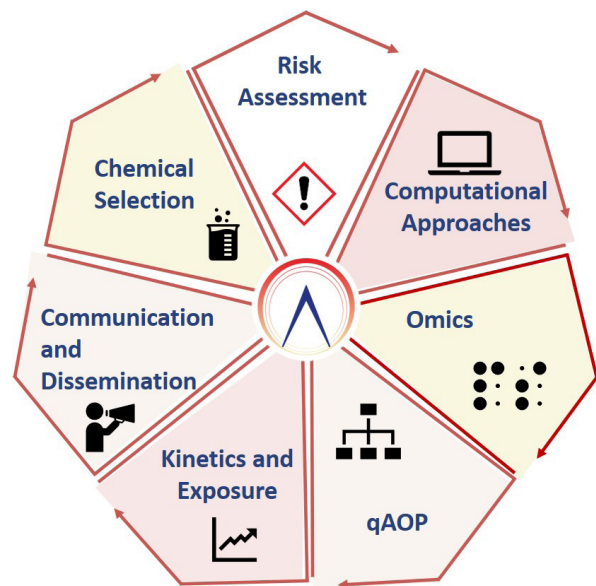
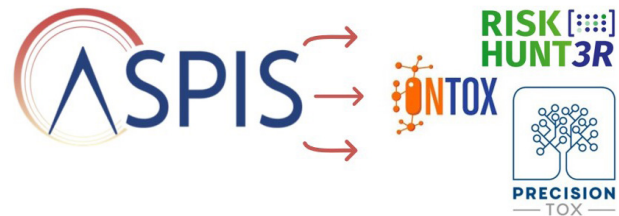
The ASPIS project cluster aims to advance safety assessment of chemicals without the use of animal testing

ASPIS brings together the three consortia funded under the European Commission's call for projects advancing the safety assessment of chemicals without the use of animal testing: RISK-HUNT3R, PrecisionTox and ONTOX.

The cluster represents more than 70 institutions across 16 European countries and the U.S. delivering on a €60 million investment in providing timely answers about chemical impact on human health. It combines efforts by organizing joint workshops, sharing data and tools, collaboratively mapping findings, disseminating results through their networks, and working together toward regulatory uptake of NAMs.

ASPIS is powered by seven Working Groups:

- risk assessment;
- chemical selection;
- computational approaches;
- omics;
- quantitative AOP (qAOP)
- kinetics and exposure
- communication & dissemination.



Efficient navigation requires a map

RISK-HUNT3R has teamed up in ASPIS and with stakeholders in a series of virtual events to identify urgent regulatory needs

RISK-HUNT3R aims to deliver integrative strategies for NGRA, with a focus on chronic systemic health effects. These strategies will be tailored to different industry sectors and thus different regulations. They will be developed through various cycles of optimization, using a mapping of regulatory needs and existing decision trees as a starting point. This mapping

exercise was discussed at the workshop “Current and future regulatory needs for chemical risk assessment” and will be presented at the mini-symposium “Orienteering for regulatory needs” (March 14, 2022). Together with the experts from ASPIS, participants will further consolidate the regulatory needs for specific health effects.

