



## INHERIT—INHibitors, Explosives and pRecursor InvesTigation

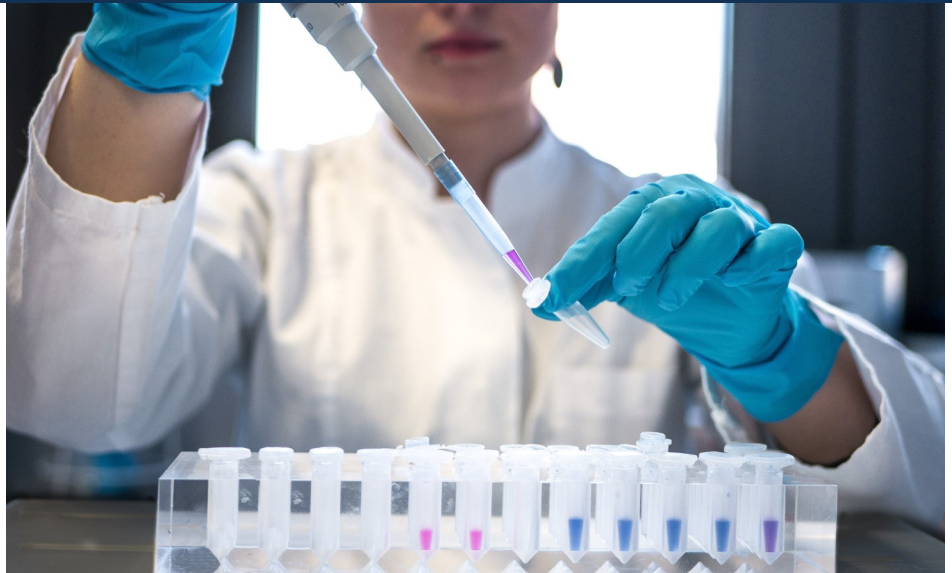
### Editorial by FOI (Coordinator)

#### The challenge

Criminals, including terrorists, constantly seek new ways to develop, deploy and activate dangerous chemicals ((e.g., explosives, neurotoxins, new drugs). The way those chemicals are manufactured and combined, evolves continuously, which makes the specialized work of law enforcement agencies, LEA:s, and reference laboratories in this area a continuous challenge.

#### Concept and approach

Home-made explosives pose a threat to the society. The aim for INHERIT is to make explosive production impossible. This includes restricting the access to the respective precursors and also new methods to ease their detection. INHERIT aims to intervene across the terrorism timeline through technologies that make precursors inert against misuse, easier to detect, and able to yield greater forensic value.



#### The INHERIT Consortium

INHERIT started on June 1, 2021, and is now mid-way in the progress of the 36 month long project. The INHERIT project involves 14 organisations ranging from research and technology departments (RTD:s), law enforcement agencies (LEA:s), universities and small and medium-sized enterprises (SME:s). Besides the consortium there is an supportive Advisory Board for INHERIT that consists of 12 members representing industry, LEA:s, and different governmental agencies from both Europe and North America.

#### General Scene Setter

The research activities in the project are all enclosed and interrelated in what will be developed into INHERIT's evaluation Framework. That is a systematic approach, which involves the INHERIT research and development tasks on explosive precursors and their possible countermeasures (alone and combined) to assess at every stage of the project execution a) the level of knowledge acquired b) how effective the countermeasures are and c) the estimated impact by the implementation. (Cntd in p2)



a) The level of knowledge about the threat is important in terms of new explosive precursors and the feasible ways they can be sourced, transported, stored, and manipulated (manufacture of HME).

b) How effective the countermeasure will be and the risks (environmental, economic and legal) involved are assessed, considering all the knowledge at a). All detailed information on the threat and potential countermeasures as per a) provide the baseline to evaluate the effectiveness and risks, when those are implemented in single or combined manners.

c) The estimated impact of the implementation requires an assessment according to probable occurrence and importance of each INHERIT measure. The framework is not considering any probability but a what-if approach. The impact assessment will take into account the effectiveness and risk assessments and the probabilities and

weights applied to specific measures enabling a feasible impact assessment in case the threat occurs and countermeasures are implemented to some extent.

### **INHERIT Strategies**

A precursor can be banned or replaced, such as sodium chlorate as an herbicide. The outcome on the effectiveness of new, alternative precursors to synthesise existing or new HMEs, will support policy makers in their decision on whether or not these alternative precursors should be included in the EU regulation on the marketing and use of explosives precursors.

INHERIT will identify and evaluate new threats. If these new threats are based on precursors and chemical reactions that can be inhibited quite easily, experimental evaluations will be performed to find inhibition com-

pounds or concentration limits, which prevent the synthesis of these explosives. The results will be the basis for potential recommendations to policy makers.

Markers for precursors, such as fertiliser mixtures, aimed at enhanced detection capability, will be explored and their performance tested. If a viable technology can be identified, with the performance of enhancing security, policy makers will be informed by a number of recommendations.

### **Policy Implications**

If research on inhibition and identifying new, not yet restricted, precursors is successful, the EU regulation on marketing and use of explosives precursors needs to be considered for an update. Policy makers will be informed of the outcome of the research results and the assessed effectiveness of emerging countermeasures.

If the capability for markers and detection of precursors such as fertiliser mixtures will be viable and deemed effective and contribute to a new method for the prevention of explosives threats then a possible societal implementation will need to be evaluated from a legal and cost-benefit perspective. Policy makers will be informed of the outcome of the research results and the assessed effectiveness of emerging countermeasures.



## INHERIT at FINEX 2022 Annual Meeting

The INHERIT Project participated at the Forensic International Network for Explosives Investigation (FINEX) Annual Meeting which was held between 8-11 November 2022 in the Hague, The Netherlands.

The INHERIT project partner Netherlands Forensic Institute (NFI) who hosted the event in their premises delivered a keynote presentation regarding INHERIT Project Objectives, Strategies and progress achieved so far.

FINEX meeting is internationally recognized as the primary professional meeting for all aspects of forensic explosives investigation. It provides a forum for high quality international interchange of information, including oral and poster presentations on:



- Pre- and post-explosion chemical analysis
- Technical developments in forensic methodology
- Current research
- Forensic case studies
- Quality

INHERIT presentation led to several relevant discussions and successfully resulted to a follow-up agenda for a potential collaboration with FEL (UK) to share knowledge and best practices.

FINEX meeting also included the annual Business Meeting, results from FINEX Inter-laboratory Comparisons and reports from the FINEX Project Groups, and a workshop.



## INHERIT at Projects to Policy Seminar (PPS) organized by DG HOME

INHERIT Project represented by its Coordinator (FOI) and the Work Package Leader for Dissemination and Exploitation (KEMEA) participated at the Projects to Policy Seminar (PPS) organized by DG HOME and REA C2 unit in Brussels on the 30th of June and the 1st of July 2022 in Brussels, Belgium.

The 3rd PPS was co-organized by DG HOME, the Research Executive Agency (REA), and DG CNECT where Policy makers and project organisers shared knowledge to bring forth new trends and innovation in EU security policy. More than 130 participants from all over Europe attended the Project to Policy

Seminar in which project staff and policy officers continue to build strong relationships, while DG HOME and REA facilitate the exchange between Commission services and the projects involved.

INHERIT representatives presented the outcomes of the project while in the same time conducted round table discussions with EC Officials and other research projects representatives.

The PPS provided the perfect opportunity in between breakout sessions, where participants used the time for networking to connect with colleagues also from other thematic areas. On the second day, the event continued with breakout sessions in the morning followed by plenary sessions on communication, dissemination, and how to make best use of project research results by using the Horizon Booster Service tools.





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