

WP4 – Development of fast screening methods to detect environmental contaminants in seafood.

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Other partners involved: NVI, ICRA, ILVO, IRTA and Polyintell

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Summary

The aim of this work package is the development of new and innovative devices for the rapid screening of priority environmental contaminants identified in WP1 and confirmed in WPs 2 and 3. The final output of this WP consists of new tools to be implemented in the control and monitoring plans of food producers and competent authorities so as to enhance food safety as well as the confidence of consumers in seafood products.

Objectives

1. To develop a sample treatment methods to achieve suitable extracts for direct measurement employing the new developed methods.
2. To produce and supply new materials (antibodies, aptamers, phagees and molecularly imprinted polymers) specifically designed for target environmental contaminants.
3. To set immobilization procedures for the convenient attachment of new developed materials or already existing bioreagents to transducer surfaces.
4. To validate the new developed methodologies with real samples and data from reference analytical methods.
5. To provide new tools to make the assessment of the presence of relevant priority environmental contaminants in seafood products easier and faster.

Tasks

Task 4.1. Development of recognition elements.

Task 4.1.1. Design and synthesis of target molecules.

Task 4.1.2. Antibodies.

Task 4.1.3. Aptamers.

Taks 4.1.4. Phages.

Task 4.1.5. Molecularly imprinted polymers (MIPs).

Task 4.2. Establishment of samplint protocols.

Task 4.3. Development of new detection systems.

Task 4.3.1. Development of immobilization procedures.

Task 4.3.2. Development of immunochemical assays.

Task 4.3.3. Sensors based on Surface Plasmon Resonance (SPR) will be evaluated.

Task 4.3.4. Electrochemical sensors.

Task 4.3.5. Piezoelectric sensors.

Task 4.4. Validation of methodologies.

Task 4.4.1. Bioactivity-based screening of antibiotics.

Task 4.4.2. Validation of new developed methodologies.