

Research line: Management and valorization of fish wastes and discards. Industrial processes and by-product applications

Research group: Seafood Biochemistry Group + Group of Recycling and Valorization of Wastes (REVAL)

Objectives:

Identification and quantitation of by-products and fish discards suitable to be used in biomedical, cosmetic and functional food applications. Development of industrial processes for obtaining bioactive compounds with economic interest that promotes the valorisation of these wasted materials.

Bioactivity tests for biomolecules obtained from fish by-products and discards.

Description of main targets and Process:

Discards:

- Small crustaceans discarded by trawlers in the coast of Galicia and North of Portugal (*Polybius henslowii*, *Munida* spp., *Macropipus tuberculatus*, *Liocarcinus depurator*)
- Sea cucumber discarded by trawlers in Gran Sole and coast of Galicia and North of Portugal (*Stichopus regalis*)
- Small sharks, rays and chimaera (chondrichthye fishes) discarded by trawlers in the coast of Galicia and North of Portugal (*Scylorhynchus canicula*, *Galeus* spp., etc.)

By-products:

- Skins and cartilages of chondrichthyes (*Prionace glauca*, *Scylorhynchus canicula*, etc.)
- Squid Pens (*Illex argentinus*, *Dosidicus gigas*)
- Viscera from chondrichthyes

Process:

Isolation and characterisation of collagen and gelatines from skins

Isolation and characterisation of elastin from fish tissues

Isolation and characterisation of chondroitin sulphate from cartilages and tegument of sea cucumber

Isolation and characterisation of chitosan from crustaceans and squid pens

Recovery of proteins and peptones from viscera to use as nitrogen source of microbial growths

Bioactivities:

Antioxidant properties of collagen/gelatine hydrolyzates and chondroitin sulphate samples

Antihypertensive properties of collagen/gelatine hydrolyzates

Antimicrobial properties of chitin/chitosan and chondroitin sulphate samples

Stimulation of collagen synthesis in fibroblast culture by collagen hydrolyzates

