

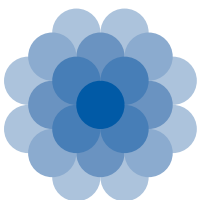


Generalitat
de Catalunya



TECHNOLOGY
PRODUCT
SERVICE

BIOTECHNOLOGY



XRAQ

XARXA DE REFERÈNCIA D'R+D+I EN AQUÍCULTURA
DE LA GENERALITAT DE CATALUNYA

DESCRIPTION AND EXPERIENCE

- ✓ This program is composed by multidisciplinary research groups, with scientists experts in aquaculture, microbiology, pharmacology, biochemistry and physiology. All these fields allow them to face new challenges from different angles.
- ✓ Target species: Seabass (*Dicentrarchus labrax*), Sea bream (*Sparus aurata*), Rainbow trout (*Oncorhynchus mykiss*), Common trout (*Salmo trutta*), zebrafish (*Danio rerio*), and other non-mammalian vertebrates (amphibians).
- ✓ Collaboration with companies: Hipra Laboratories, Lucta, ADL Diagnostics, Balfegó, Rara Avis Biotec...

BENEFITS AND APPLICATIONS

- ✓ Nanostructured recombinant viral antigens production (IPNV, VNNV, VHSV) for developing antiviral vaccines.
- ✓ Liposomes formulation (up to “nano” scale) with suitable tolerance and biodistribution to encapsulate bioactive molecules.
- ✓ Non-toxic, non-stressful and effective systems to protect commercial fish from pathogenic challenges.
- ✓ Automatized mucus/serum samples analysis with a panel of 25 metabolites, enzymes, ions or immunoglobulins. Detect markers for: stress, reproductive state, infections...
- ✓ Biosensors development for metabolites detection.
- ✓ Recombinant cytokines production (regular or nano) soluble in E. coli for being used as immunostimulant, for diagnostic tools or for oral administration (feed formulation)
- ✓ Recombinant viral antigens production (IPNV, VNNV, VHSV) in soluble form to develop diagnoses tools (ELISA).
- ✓ Infection models (adult zebrafish, *P. aeruginosa*, *M. marinum* adults and *A. Hydrophila* larvae) for tests with active compounds (feed, antibiotics, etc.).
- ✓ Bacterial pathogen detection and analysis in tissue and water using 18S PCR.
- ✓ Recombinant hormones for fish reproduction control (synchronicity of gametes generation, quantity and quality)
- ✓ Novel biotechnological approaches for the long-term preservation of germ cells and embryos