STURGEoNOMICS

Genome-based approaches for improvement of aquaculture in two marine sturgeon species: Atlantic sturgeon (*Acipenser oxyrinchus*) and Beluga (*Huso huso*)

COFASP ERA-net

MarineBiotech

PROJECT FACTSHEET

JOINT CALL COFASP – ERA-MBT

DECEMBER 2016

ABSTRACT

This project will use whole genome-based approaches for the improvement of aquaculture in two marine sturgeon species: Atlantic sturgeon (*Acipenser oxyrinchus*) and Beluga (*Huso huso*), characterized by large size, fast growth and relatively compact genomes.
Based on advanced preliminary work, the first common objective is to generate high quality genomes for *H. Huso* and *A. oxyrinchus*. The second objective is to characterize the genetic sex determination, using genomics and gonadal transcriptomics to prepare future molecular biotechnological tools for commercial aquaculture (female-biased breeding, meat, caviar) and species conservation. The third objective is to improve aquaculture breeding and re-stocking using population genomics, specifically elucidating the genomic substructure of native Atlantic sturgeons and re-stocking populations and of the remaining Beluga stocks from the Danube. This will avoid inbreeding in aquaculture and improve genetic make-up and broodstock management for ongoing restoration programs of endangered sturgeons and for sustainable fishery. The fourth objective is to experimentally extract genomics-derived candidate genes related to target traits (growth, disease resistance, sex determination) in captive-bred offspring using whole genome information (positively selected genes) and transcriptome (RNAseq) analyses in order to improve management strategies and breeding for commercial and conservation-related aquaculture.

More information can be found on the COFASP website.

Sector:

- Aquaculture

Topic:

- Genome based approach to genetic improvement of aquaculture species

Total costs*:
€ 1.829.400

Funding granted*:
€ 856.800

Duration:
3 years (2017-2019)

** Exact amount may change after completion of national contracts*

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