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Poster 1

Microscopic and molecular screening of myxosporeans in teleost fishes caught from Northeast Atlantic waters

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Abstract

Background: Globally, the demand for fishery resources has increased significantly to meet the nutritional needs of the population. With the continuous increase in aquaculture and the introduction of new species, knowledge of the life cycle of infectious agents is essential, as it is crucial for public health and industry [1]. Myxosporeans are microscopic multicellular parasites belonging to the phylum Cnidaria Hatschek, 1888, which have as hosts fishes from different habitats with wide geographical distribution. They have a complex life cycle involving two hosts: an invertebrate (usually oligochaetes or polychaetes) and a vertebrate, typically fish [2]. **Objective:** This study aimed to expand knowledge of the diversity of myxosporeans parasitizing stocks of teleost species caught from Northeast Atlantic waters, with high commercial value and potential to be introduced into aquaculture, namely *Pagrus caeruleostictus* (bluespotted seabream), *Plectorhinchus mediterraneus* (rubberlip grunt) and *Sarpa salpa* (salema porgy). **Methods:** Specimens were necropsied and a myxosporean survey was carried out in internal and external tissues. Samples of tissue were analysed by light microscopy and, when infected, photographed for morphological characterization and prepared for histology and molecular procedures targeting the 18S rDNA. Positive PCR products were sequenced, and the consensus sequences were analysed by BLAST in MEGA11 software. **Results**: Morphological and molecular analyses revealed the presence of three myxosporean species. In *P. caeruleostictus*, an *Unicapsula* sp. was observed parasitizing the skeletal muscle; in *P. mediterraneus*, a *Lateroacaudata* sp. was found in the anterior and posterior kidney; and in *S. salpa*, a coelozoic parasite of the genus *Ceratomyxa* was present in gallbladder. **Conclusions:** In *P. caeruleostictus* a new occurrence of *Unicapsula pflugfelderi* Schubert, Sprague and Reinboth, 1975, previously described in two sparids species from Mediterranean [3], is reported; in *P. mediterraneus*, a potential new species is described having morphological similarity (inexistence molecular data) with the only other species of the genus *Laterocaudata* found in the gill of a freshwater fish in China [4]. Finally, in *S salpa*, molecular identity was provided for a species of *Ceratomyxa* previously reported in specimens captured from Tunisian waters [5].

Keywords: marine fishes; parasites; Myxozoa

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