



## Scientific Note

# First record of partial albinism in the temperate rocky reefs fish *Acanthistius patachonicus* (*Incertae sedis*) off Southwestern Atlantic Ocean.

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**Abstract.** First record of partial albinism in the temperate rocky reefs fish *Acanthistius patachonicus* (*Incertae sedis*) is reported. This report is the first in the genus *Acanthistius* and for temperate reefs fishes from the southwestern Atlantic.

**Key words:** Fish albinism, temperate rocky reef

**Resumen.** Primer registro de albinismo parcial en *Acanthistius patachonicus* (*Incertae sedis*), pez de arrecifes templados del Océano Atlántico sudoccidental. En el presente trabajo se describe el primer ejemplar parcialmente albino de *Acanthistius patachonicus* (*Incertae sedis*). El ejemplar albino no sólo representa el primer registro para el género *Acanthistius*, sino que además representa el primer registro de un pez albino en arrecifes templados del Atlántico Sudoccidental.

**Palabras clave:** Albinismo en peces, arrecifes templados

The Patagonian grouper *Acanthistius patachonicus* (known locally as mero) Jenyns 1842, is a long-lived temperate rocky reef fish reaching as much as 65 cm found from Brazilian waters (23° S), as a rare species, up to the San Jorge gulf in Argentina (48° S), as one of the most abundant and valuable reef fish. It is captured with trawling nets and long lines and recreationally by hook and line and spear fishing (Figueiredo & Menezes 1980, San Román 1980, Cousseau & Perrota 2000, Galván *et al.* 2005). While historically the genus *Acanthistius* was placed in different subfamilies of the Serranidae family, Smith & Craig (2007) considered it an “*incertae sedis*” genus within the Percoidae order. The *Acanthistius* genus has 10 species (Hutchins 1982, Heemstra & Randall 1986, Pequeño 1989, Anderson *et al.* 2000), and two of them are for the south West Atlantic: *Acanthistius brasiliensis* and *Acanthistius patachonicus*. In Argentina *A. patachonicus* was considered synonym of *A. brasiliensis* up to a recent work of Irigoyen *et al.*

(2008), reestablishing both as separate species. Despite this, most information available for *A. patachonicus* was publicized under the synonym *A. brasiliensis*, confusing information available for both species.

In January of 2009, a partial albinus *Acanthistius patachonicus* specimen was caught in the Golfo Nuevo at 29 m deep with jigging. Jigging is the type of sport fishing consisting of a lead sinker with a hook molded into it and usually covered by a soft body to attract fish. Jigs are intended to create a jerky, vertical motion, and there are very versatile and can be used in both salt water as well as fresh water. Many species are attracted to the lure which has made it popular amongst anglers for years. Specimen was identified according to Menni *et al.* (1984) and Irigoyen *et al.* (2008) and photographed. Total length (LT) and total weight (TW) were recorded.

The material examined was a partial albino *Acanthistius patachonicus* adult, total length (TL) 60

cm and total weight 3.300 g. Unfortunately an albino specimen was not deposited in a scientific collection, only existing photographic record. This temperate rocky fish had a partial albino phenotype with hypomelanism on the entire surface of the body except for the eyes, which had normal pigmentation (Figure 1). In despite of its length, we considered that the fish had more than 40 years old (San Roman 1980, Rubinich 2004), since the largest individuals between 44- 50 cm were aged approximately around 40 years old.



**Figure 1.** Partial albino specimen of *Acanthistius patachonicus*

The normal coloration of these species is dark red, brownish or grey depending on depth and color of the habitat substrate, irregularly shaped dark spots on the body and dorsal and anal fins usually forming dark bands on the sides and irregular vermiculated lines, well defined at all sizes (Figure 2). This coloration is very contrasting with the one found on the partial albino specimen. Albinism is a genetically inherited condition in which the pigment protein melanin is either absent or nonfunctional. Mutations that affect enzymes involved in the metabolism of melanin can inhibit its production, resulting in either partial or complete loss of coloration. Among teleosts fishes, albino individuals have been reported in numerous species (Reum *et al.* 2008). Albino individuals not are common, often presented as having little chance of survival to adulthood due to increased risk of predation and reduces communication between individuals of the same species. This is important particualermente diurnal species and clear waters (Sazima & Pombal, 1986). On the other hand, albinism has little influence in fish with nocturnal habitat or cryptobiotic, since animals with

this kind of life would have reduced the likelihood of being detected by visual predators. Partial albinism seemingly was no handicap in the life of this Patagonian grouper, which was otherwise a morphologically normal adult, aged about more than 40 years.

To our knowledge this is the first report of partial albinism in the genus *Acanthistius* and for temperate reefs fishes from the south western Atlantic. Considering *Acanthistius patachonicus* a specie subject to intensive exploitation (sport and commercial fishing) with a high number of individual captured for centuries without a previous record of partial albinism, this remains an uncommon event not yet detected in most wild fish species, at least regarding to adult individuals.



**Figure 2.** Normal specimen of *Acanthistius patachonicus*

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