

{rokbox title=|Pictures of *P. nobilis* (a) and *P. rudis* (b) :: Image: Authors|
thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-natural-hybridization-pinna-rudis-pinna-nobilis-vazquet-et-al-2021-thumb.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-natural-hybridization-pinna-rudis-pinna-nobilis-vazquet-et-al-2021.jpg{/rokbox}

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[Natural](#)

[hybridization between pen shell species:](#)

[Pinna rudis](#)

[and the critically endangered](#)

[Pinna nobilis](#)

[may explain parasite resistance in](#)

[P. nobilis](#)

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Abstract: Recently, *Pinna nobilis* pen shells population in Mediterranean Sea has plummeted due to a Mass Mortality Event caused by an haplosporidian parasite. In consequence, this bivalve species has been included in the IUCN Red List as “Critically Endangered”. In the current scenario, several works are in progress to protect

P.

nobilis

from extinction, being identification of hybrids (

P. nobilis

x

P. rudis

) among survivors extremely important for the conservation of the species. Morphological characteristics and molecular analyses were used to identify putative hybrids. A total of 10 individuals of each species (

P. nobilis

and

P. rudis

) and 3 doubtful individuals were considered in this study. The putative hybrids showed shell morphology and mantle coloration intermingled exhibiting both

P. nobilis

and

P. rudis

traits. Moreover, the analyses of 1150 bp of the 28S gene showed 9 diagnostic sites between

P. rudis

and

P. nobilis

, whereas hybrids showed both parental diagnostic alleles at the diagnostic loci. Regarding the multilocus genotypes from the 8 microsatellite markers, the segregation of two *Pinna* species was clearly detected on the PCoA plot and the 3 hybrids showed intermediate positions. This is the first study evidencing the existence of hybrids *P. nobilis* x *P. rudis*, providing molecular methodology for a proper identification of new hybrids. Further studies testing systematically all parasite-resisting isolated

P. nobilis

should be undertaken to determine if the resistance is resulting from introgression of

P. rudis

into

P. nobilis

genome and identifying aspects related to resistance.

Keywords: Hybrid, Pinnidae, Bivalves, Critically endangered species, Molecular identification, Mediterranean Sea