{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}

**Maite Vázquez Luis**, **Elisabet Nebot Colomer**, **Salud Deudero**, Serge Planes, Emilie Boissin, 2021. **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