A peer-reviewed version of this preprint was published in PeerJ on 28 March 2017.

View the peer-reviewed version (peerj.com/articles/3116), which is the preferred citable publication unless you specifically need to cite this preprint.

Montes M, Rico JM, García-Vazquez E, Borrell Pichs YJ. 2017. Molecular barcoding confirms the presence of exotic Asian seaweeds (*Pachymeniopsis gargiuli* and *Grateloupia turuturu*) in the Cantabrian Sea, Bay of Biscay. PeerJ 5:e3116 https://doi.org/10.7717/peerj.3116

PeerJ Preprints NOT PEER-REVIEWED

TITLE:

Molecular barcoding of red algae in the Cantabrian Sea reveals the presence of exotic Asian seaweeds (*Pachymeniopsis gargiuli, Grateloupia imbricata* Holmes *and Grateloupia turuturu* Yamada).

AUTHORS:

Marcos Montes[1, 2], Jose Manuel Rico[2], Eva García-Vazquez[1], Yaisel J. Borrell Pichs[1]

[1]Biología Funcional, University of Oviedo, Oviedo, Asturias, Spain

[2]Biología de Organismos y Sistemas (BOS), University of Oviedo, Oviedo, Asturias, Spain

Introduction of exotic species may cause serious consequences for marine ecosystems. On the shores of the Cantabrian Sea (North of Spain) there is no routine examinations of seaweeds combining molecular and morphological methods for early detection of exotic species and thereby to assess in early stages their establishment and expansion processes as a result of anthropogenic activities (e.g.: shipping, aquaculture, etc). In this work we conducted molecular barcoding (COI and RbcL genes) of red algae collected in Asturias, Bay of Biscay (Gijón and Candás harbours). The results reveal the presence of the exotic Asian seaweeds (*Pachymeniopsis gargiuli, Grateloupia imbricata* Holmes and *Grateloupia turuturu* Yamada). This study constitutes the first report where the presence of these Asian algae in this area of the Bay of Biscay is confirmed. The work demonstrates the success in combining morphological and genetic methods in the early detection of exotic algae and proposes that the "molecular barcoding" must be made primarily using the Rbcl gene. The COI Databases are still incomplete and imprecise to obtain successful results in red algae species-level identifications.