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# Can a genomic chip in Galician mussels lead to improved seafood traceability?

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By Responsible Seafood Advocate

## Genomic chip guarantees authenticity, leading to hopes of improved seafood traceability and prevention of food fraud

A research team has developed an innovative genomic chip that guarantees the authenticity of Galician mussels. It will serve to distinguish the geographical origin of mussels cultivated in Galicia from other locations, leading to improved seafood traceability and food fraud prevention.

“Tracing the geographical origin of this species is crucial to developing and implementing management strategies to mitigate invasion and protect the sustainable exploitation of native species,” said Ane del Río, an AZTI researcher and expert in food integrity.

As part of the European SEATRACES project, which seeks to improve the traceability of mussels and prevent possible food fraud, the study analyzed more than 200 samples of mussels from different geographical origins. In total, researchers identified 17 specific markers, making it possible to distinguish the geographical origin of the mussels with a high degree of accuracy.

On the basis of these genetic markers, researchers at AZTI worked together with the University of



A new genomic chip guarantees the authenticity of Galician mussels, leading to improved seafood traceability and food fraud prevention. Photo courtesy of AZTI.

Santiago de Compostela (USC) to develop a genetic chip with the genetic profile of the Mediterranean mussel species *Mytilus galloprovincialis*. The chip offers producers and expert researchers a powerful genomic tool to identify, validate and assess complex genetic traits in this species.



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“Producers can use these genetic markets to certify the origin of their products and boost consumer confidence,” said del Río “For their part, food authorities can use this information to ensure compliance with traceability and food safety regulations.”



## In the fight against seafood fraud, the technology behind trace element fingerprinting is maturing

Analysis of trace chemical elements can reveal where farmed seafood comes from. Standardization of traceability tools and techniques is improving the process.



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World aquaculture production of mussels reached 2.11 million tons in 2018, with an approximate value of \$4.5 million, according to figures published in 2020 by the United Nations Food and Agriculture Organization (FAO). In the European Union, these mollusks represent 34 percent of total aquaculture production. Galicia, responsible for more than 97 percent of the aquaculture in Spain, is the leading producer among EU member states of one of the two main species – the Galician (or Mediterranean) mussel.

Guaranteeing origin and traceability is especially important in the case of mussels due to their importance in international trade and the long distances between where they are produced and consumed.

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