

New study reveals first ever method to genetically identify all 8 tuna species

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A new paper published October 27 in *PLoS ONE*, the online, open-access scientific journal, unveils for the first time a method to accurately distinguish between all eight tuna species from any kind of processed tissue using genetic sequencing.

Tunas are among the most economically valuable and yet the most endangered commercially exploited fish in the world.

Identification of these species in traded forms, which are typically dressed, gilled and gutted, or loin and belly meat, and either fresh or frozen, is a highly complex process - which may hamper conservation efforts on trade controls.

The paper, 'A Validated Methodology for Genetic Identification of Tuna Species (Genus *Thunnus*)', co-authored by Dr Jordi Viñas, a fish genetics specialist at Girona University in Spain and Dr Sergi Tudela, Head of Fisheries of WWF Mediterranean, proposes for the first time ever a genetic method for the precise identification of all eight recognized species of tuna.

The analysis of the DNA sequence variability of two unlinked genetic markers, one a hypervariable segment of the [mitochondrial genome](#) and the other a nuclear gene, enables full discrimination between all eight tuna species.

"This methodology will allow the identification of tuna species of any

kind of tissue or type or presentation - including sushi and sashimi," said Dr Jordi Viñas of Girona University. "The differentiation between different tunas, even those with highly similar genes, is now possible."

"Our findings are particularly relevant for the highly overfished, overtraded - and hence endangered Atlantic bluefin tuna, for which there is a growing campaign to impose a temporary ban on international trade," added co-author Dr Sergi Tudela of WWF. "There will now be no trace of doubt when seeking to identify chilled or frozen tuna flesh at port or point of sale."

More information: Viñas J, Tudela S (2009) A Validated Methodology for [Genetic](#) Identification of Tuna Species (Genus Thunnus). [PLoS ONE](#) 4(10): e7606. [doi:10.1371/journal.pone.0007606](https://doi.org/10.1371/journal.pone.0007606)

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