{rokbox title=|Tuna larvae :: Image: Authors| thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-first-estimates-metabolic-rate-atlantic-bluefin-tuna-larvae-blanco-et-al-2020-thumb.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-first-estimates-metabolic-rate-atlantic-bluefin-tuna-larvae-blanco-et-al-2020.jpg{/rokbox}

E Blanco, **P Reglero**, A Ortega, A Folkvord, F de la Gándara, A Hernández de Rojas, M Moyano, 2020. **First estimates of metabolic rate in Atlantic bluefin tuna larvae.** J Fish Biol. 2020;1–10.
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Abstract: Atlantic bluefin tuna is an iconic scombrid species with a high commercial and ecological value. Despite their importance, many physiological aspects, especially during the larval stages, are still unknown. Metabolic rates are one of these understudied aspects in scombrid larvae, likely due to challenges associated to larval handling before and during respirometry trials. Gaining reliable estimates of metabolic rates is essential to understand how larvae balance their high growth needs and activity and other physiological functions, which can be very useful for fisheries ecology and aquaculture purposes. This study for the first time: i) estimates the relationship between routine metabolic rate and larval dry weight (mass scaling exponent) at a constant temperature of 26 °C, ii) measures routine metabolic rate under light and darkness, and iii) tests whether the inter-individual differences in routine metabolic rate are related to larval nutritional status (RNA/DNA and DNA/DW). Routine metabolic rate scaled nearly isometrically with body size (b=0.99, 0.60 to 31.56 mg dry weight), in contrast to the allometric relationship observed in most fish larvae (average b=0.87). Our results show no significant differences in larval routine metabolic rate under light and darkness, suggesting similar larval activity levels in both conditions. Size explained most of the variability in routine metabolic rate (97%), and nutritional condition was unrelated to the inter-individual differences in routine metabolism. This study first reports metabolic rates of Atlantic bluefin tuna larvae and discusses the challenges of performing bioenergetic studies with early life stages of scombrids.

Keywords: Atlantic bluefin tuna, larvae, metabolism, nutritional condition, respiration, RMR