

Does food quality influence thermoregulatory behavior in the intertidal fish *Girella laevis*?

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Abstract

Algal and invertebrate species are less abundant towards higher zones of the intertidal, where the greatest variations in physical environmental conditions occur. Mobile predators such as fishes that inhabit high intertidal rockpools are thus exposed to wide variations in physical conditions and to a low abundance and quality of food. We used an aquarium with a temperature gradient in the laboratory to assess whether dietary quality differences modify temperature preferences of *Girella laevis*, one of the most abundant transitory fishes inhabiting rocky shores along the coast of Chile. Our results indicate that food quality clearly modifies temperature preferences in this species. Animals fed on high quality bivalves selected intermediate temperatures (16–18°C) while those fed on lower quality algae selected lower temperatures (10–12°C). Control fish not subjected to the temperature gradient did not select portions of the aquarium differentially. The thermal selectivity of *G. laevis* in relation to the optimization of digestive processes and mechanisms of energy conservation are discussed.

Keywords: Food quality; Intertidal fish; Thermal gradient; *Girella laevis*