

UNIVERSIDAD DE LA FRONTERA

Facultad de Ingeniería y Ciencias

Doctorado en Ciencias de Recursos Naturales



**STUDY ON PATAGONIAN BLENNY (*Eleginops maclovinus*)
SPERM FUNCTION DURING *IN-VITRO* COLD STORAGE**

**DOCTORAL THESIS IN FULFILLMENT OF
THE REQUIREMENTS FOR THE
DEGREE DOCTOR OF SCIENCES IN
NATURAL
RESOURCES**

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“Study on Patagonian blenny (*Eleginops maclovinus*) Sperm Function during *In-vitro* Cold Storage”

Esta tesis fue realizada bajo la supervisión del Director de tesis, Dr. Jorge Farías Avendaño del Departamento de Ingeniería Química, Facultad de Ingeniería y Ciencias de la Universidad de La Frontera y ha sido aprobada por los miembros de la comisión examinadora.

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Thesis summary

"The focus is on recovering fish stocks, particularly the overexploited Patagonian blenny (*Eleginops maclovinus*), by understanding its sperm's short-term storage ability for artificial propagation. Sperm motility assessment, function, respiration markers, pH, and osmolarity during cold storage are crucial for designing an in-vitro management protocol. Fresh semen from 63 males was stored at 4°C for 14 days, with electron microscopy, motility analysis, and sperm function evaluation. The Cortland solution extended storage to about 7 days, with reactive oxygen species and ATP depletion being significant factors. This study demonstrates the potential for in-vitro collection and storage of Patagonian blenny semen, contributing to species propagation efforts without sacrificing males."