

Immunolocalization of morphogen sonic hedgehog in salmon fry (*Salmo salar*)

[Inmunolocalización del morfógeno sonic hedgehog en alevines de salmón (*Salmo salar*)]

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With the purpose of carrying out a diagnosis of the different pathologies that affect the salmon fry stage (*Salmo salar*) and analyze the regeneration phases of the organizational centers and subjacent tissue in case of an amputation, we realized a study that allowed identifying the temporary and spatial location of the Sonic Hedgehog (Shh) morphogen in hatched fry stage. Fifteen salmon fry (*Salmo salar*) were used. They were anesthetized with 5 % benzocaine (BZ-20®, Veterquímica), fixed in 10 % buffered formalin, and embedded in paraffin, Shh polyclonal antibody (Santa Cruz H-160, rabbit) was used diluted at 1/100. They were subsequently rinsed in PBS-1 % Triton and incubated with anti-rabbit conjugated polymer antibody and HRP for 10-15 min. The development was done with DAB (Vector) for 1-5 min. The negative control was incubated without primary antibody. As an internal positive control the notochord was considered. Serial sagittal sections were analyzed consigning tissues and organs marked positively and were described morphologically. The objective of recognizing the spatial and temporal location of Shh was achieved. The notochord, spinal cord neurons and ganglia, the basal layer of the skin and also the lepidotriquias escleroblastos were positively identified for Shh. Finally positivity was also observed in the intestine and renal tubules. The heterogeneity observed in the location of the Shh morphogen suggests its potential use as a marker of regulatory centers in *Salmo salar*, and a potential advantage in the diagnosis of malformations of salmon fry stage, in addition to a better understanding of tissue

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Antibody antiShh

Immunohistochemistry

Salmon fry

Sonic hedgehog