

Insulin and hepatic cholestasis during the early post-embryonic development of gilt-head sea bream,

This work is aimed at demonstrating the influence of insulin in the triggering of hepatic cholestasis in young gilt-head sea bream larvae reared under experimental conditions. The results are based on an immunological assay of insulin and an ultrastructural study of the yolk syncytial layer and the liver. Compared to fed larvae, fasting gilt-head sea bream larvae displayed a substantial increase in insulin level correlated with dysfunction of the yolk syncytial layer and hepatic histopathology. This correlation was verified in larvae reared in sea water containing insulin. Ultrastructural observations suggested that insulin affects lipoprotein secretion by the yolk syncytial layer. The failure of plasmatic lipoproteins would then cause dysfunction of the biliary lipid secretion mechanisms and, hence, trigger hepatic cholestasis. These results in gilt-head sea bream show for the first time the influence of insulin in the triggering of hepatic cholestasis during the early development of a vertebrate.

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