Observation of the Bile Canaliculi of Puntius javanicus Liver affected by Copper

Abstract

Investigation on in vivo effects of copper (Cu) on the ultrastructure of P. javanicus liver was carried out using transmission electron microscopy (TEM). The addition of sublethal concentration of 5 mg/L of Cu caused abnormalities on the bile canaliculi (BC) including dilation and elongation compared to control and at lower concentrations of copper with a normal round shape form. Findings from this study support an alternative histological assessment of the effects of Cu concentration on P. javanicus liver.