



#### 4. Effect of Pre-treatment Conditions on Black Tilapia Fish Scales for Gelatin Extraction

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##### **Abstract**

Black tilapia (*Oreochromis mossambicus*) fish scales are good sources of gelatin. Fish scales needs to undergo adequate demineralization (pre-treatment) process in order to be a suitable medium for gelatin extraction. The effect of hydrochloric acid (HCl) concentrations (1-5 %) and pre-treatment time (4-20 h) on the raw tilapia scales have been determined. Scanning Electron Microscopy (SEM) analysis was done on the raw scales before and after pre-treatment process. SEM images reveal the pattern of ridges on the scales that fades away at different treatment conditions. Energy Dispersive X-ray Spectroscopy (EDX) results indicate that 3% of HCl with 12 h of treatment time is adequate for demineralization of the fish scales. These were further proved by Fourier Transform Infrared Spectroscopy (FTIR) analysis, where no any inorganic components been detected in the pre-treated scales in comparison to raw scales\

**Keywords:** Fish gelatin; Scales; Pre-treatment; Black tilapia

##### **Acknowledgements**

The authors gratefully acknowledge Ministry of Higher Education, Malaysia for the financial support provided for this research through MyBrain15 (MyPhd) and Research Grant Scheme, MDR Vot 1313.