

**AKTIVITAS ANTIBAKTERI DERIVAT XILOOLIGOSAKARIDA TERHADAP BAKTERI GRAM POSITIF (*Staphylococcus aureus*) dan BAKTERI GRAM NEGATIF (*Pseudomonas aeruginosa*)**

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**XILOOLIGOSACCHARIDE ; ANTIBACTERIAL ACTIVITY**

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**ABSTRACT**

**ANTIBACTERIAL ACTIVITY OF XILOOLIGOSACCHARIDE DERIVATES TOWARDS GRAM POSITIVE BACTERIA (*Staphylococcus aureus*) and GRAM NEGATIVE BACTERIA (*Pseudomonas aeruginosa*)**

The research is trying to find out the in vitro effect of the Xilooligosaccharide antibacterial activity from various material, those are: Hemicellulose A extract, Hemicellulose B extract, corn cob extract, the filtrate of Xilooligosaccharide fermentation result by *Lactobacillus casei* in 18 hours and Pure Xilooligosaccharide, towards gram positive bacteria (*Staphylococcus aureus*) and gram negative bacteria (*Pseudomonas aeruginosa*).

The research is a laboratorial experimental research using group random design in LB (Luria Bertani) Broth Growing Media which each added by Hemicellulose A extract, Hemicellulose B extract, corn cob extract, the filtrate of Xilooligosaccharide fermentation result by *Lactobacillus casei* in 18 hours and Pure Xilooligosaccharide, in the concentration of 0% (as the control), 25%, 50%, and 75% which then inoculated by gram positive bacteria (*Staphylococcus aureus*) and gram negative bacteria (*Pseudomonas aeruginosa*). The inoculation is done for 24 hours in the temperature of 37° C. Each treatment is repeated 6 times. The absorbance of the liquid growth is measured in 600 nm wavelength and the number of the cells is counted using Dropplate method. The gained data is analyzed statistically using one way ANOVA test in 5% reliability level ( $\alpha = 0.05$ ). To find out which treatment is significant, further test will be done using LSD (Least Significant Difference) Test. The Descriptive Observation is also done towards the result of the liquid growth.

The research result shows that the 0%, 25%, 50%, and 75% addition of Xilooligosaccharide from various material to LB (Luria Bertani) Broth Growing Media for 24 hours give significant interaction effect towards gram positive bacteria (*Staphylococcus aureus*) and gram negative bacteria (*Pseudomonas aeruginosa*). The highest interaction effect is generally shown in the treatment media with the addition of the filtrate of Xilooligosaccharide fermentation result by *Lactobacillus casei* in 18 hours towards gram positive bacteria (*Staphylococcus aureus*) and gram negative bacteria (*Pseudomonas Aeruginosa*). The result of

the Least Significant Difference (LSD) Test shows that the highest interaction effect is seen in the addition of 75% concentration Xilooligosaccharide from various material to LB (Luria Bertani) Broth Media in the 24 hours incubation time gives the best effect.

**Keywords: Xilooligosaccharide, Antibacterial Activity**

