Screening and selecting of indigenous gastrointestinal bacteria and nipah worm fecal pellets are very important before being applied as probiotics. Previous studies have successfully isolated 10 bacterial isolates that have cellulolytic and proteolytic abilities from intestinal and fecal pellets of nipah worm. The purpose of this study was to determine the pathogenicity of all isolates against nipah worms in vitro and in vivo. Testing of pathogenicity in vitro was carried out on blood agar and DNase agar, while in vivo testing was carried out by injecting 0.1 ml of bacterial suspension into the nipah worm body which was then cultured for 14 days. The results showed that only 10% (3 from 30 isolates) of all isolates were suspected having pathogenic activity. Isolates NBrF6, NBrF9, and NBrC4 had been isolated from hemolysis activity in blood agar and lysed DNA on DNase agar medium. In vivo pathogenicity tests through injection into gastrointestinal cavity showed that isolates NBrF6, NBrF9 and NBrC4 had LD50 at the suspension dose of 10-3 bacterial cells. USD0 reached for 5, 8 and 20 days, respectively. Symptoms of infection that appeared most dominantly in nipah worms were wounds on the surface of the body, broken body segments, and pale.

Keywords: pathogenicity, gastrointestinal bacteria, nipah worm, Namalycastis

1. Introduction

Previous research results showed the proteolytic and cellulolytic activity of 31 bacterial isolates that were successfully isolated from fecal pellets, isolates that having cellulolytic and proteolytic abilities from intestinal and fecal pellets of nipah worm. The purpose of this study was to determine the pathogenicity of all isolates against nipah worms in vitro and in vivo. Blood agar and DNase agar media were used to test the pathogenicity of isolates in vitro. Wounds on the surface of the body and broken body segments were observed in vivo. The purpose of this study was to determine the pathogenicity of all isolates against nipah worms in vitro and in vivo. Blood agar and DNase agar media were used to test the pathogenicity of isolates in vitro. Wounds on the surface of the body and broken body segments were observed in vivo. The purpose of this study was to determine the pathogenicity of all isolates against nipah worms in vitro and in vivo. Blood agar and DNase agar media were used to test the pathogenicity of isolates in vitro. Wounds on the surface of the body and broken body segments were observed in vivo.

2. Methods

(a) Pathogenicity test of bacterial isolated

(b) Blood agar and DNaseagar media were used to test the pathogenicity of isolates in vitro. Wounds on the surface of the body and broken body segments were observed in vivo. The purpose of this study was to determine the pathogenicity of all isolates against nipah worms.

3. Result

Pathogenicity of all isolates was determined by testing their cellulolytic and proteolytic activity. The results showed that 10% of the total number of potential bacteria have a tendency to be pathogenic. Clear area of blood agar and hemolysis of blood agar show the presence of bacterial hemolysis. Worms showing that NrBF6, NrBF9 and NrBC4 should be lethal effect of the number of bacteria started from the lowest dose (10^3 cells/ml). LD50 generally occurred in increments a dose of final bacteria ranging from 10^3 to 10^8 cells/ml. The bacteria isolates (NrBF6, NrBF9 and NrBC4) were able to kill 50% of the total number of nipah worms. The results of this study also showed that some of the bacterial isolates used were lethal to the test worms. The isolates that were lethal to the test worms were NrBF6, NrBF9, and NrBC4.

4. Discussion

The proteolytic and cellulolytic activity of 10 types of isolates from bacterial pathogen isolates is the ability to cause damage to the host’s body. The results showed that 10% of the total number of potential bacteria have a tendency to be pathogenic. Clear area of blood agar and hemolysis of blood agar show the presence of bacterial hemolysis. Worms showing that NrBF6, NrBF9 and NrBC4 should be lethal effect of the number of bacteria started from the lowest dose (10^3 cells/ml). LD50 generally occurred in increments a dose of final bacteria ranging from 10^3 to 10^8 cells/ml. The bacteria isolates (NrBF6, NrBF9 and NrBC4) were able to kill 50% of the total number of nipah worms. The results of this study also showed that some of the bacterial isolates used were lethal to the test worms. The isolates that were lethal to the test worms were NrBF6, NrBF9, and NrBC4.

5. Conclusion

Three isolates of bacteria NBF6, NBF9, and NBF8, which have potential to be probiotic, also have pathogenic properties through infection of zoonotic disease and diarrhea. The risk of pathogenic bacteria even though the bacteria are isolated from the digestive system of the host can be harmful. The proteolytic potential of bacteria can be beneficial or detrimental. Therefore, further studies are needed on preventive techniques for proteases that harm host cells.

References: