ABSTRACT

Aurora Ananta Valencia. 2026**. Study of Antimicrobial Activity of Nudibranch Symbiont Bacteria Against Bacteria Causing Respiratory Infections**. Under the guidance of Sri Pujiyanto and Ira Handayani

Acute Respiratory Tract Infection (ARI) is one of the diseases that causes morbidity and mortality in all ages and genders. The disease is caused by pathogenic bacteria such as *P. aeruginosa, S. aureus,* and *M. Tuberculosis*. However, many people experience resistance due to misuse of antibiotics. The solution to this problem is to find new sources of antibiotics. One of them is using Nudibranch symbiont bacteria. The purpose of this study was to determine the condition of nudibranch symbiont bacteria grown in several media (MS, MB, and ISP2), to determine the compounds from nudibranch symbiont bacteria, and to determine the types of nudibranch symbiont bacteria. This study used an experimental design with a Completely Randomized Design (CRD). Three bacterial isolates (MHA 13, MHA 16, and 10 EC) were cultivated on three types of media and extracted periodically from day 2 to day 14 to obtain 13 extracts from each isolate. Each extract was tested for its antibacterial activity against *P. aeruginosa, S. aureus*, and *Mycobacterium smegmatis* with a total of 351 data analyzed using SPSS. In addition, there were 4 EC isolates extracted using the maceration method so that 27 additional data were obtained. In the antibacterial test results, the conditions of MHA 13 and 10 EC isolates given different media treatments had significant differences, based on the Kruskal Wallis test, the media with the highest mean rank in MHA 13 isolates was MS media and the 10 EC isolates had the highest mean rank in MB media. In MHA 16 and 4 EC isolates between the treatments there was no significant difference because based on the Kruskal Wallis test it had an α value> 0.05. The results of GCMS obtained several secondary metabolites that have antibacterial, anti-inflammatory, and anti-cancer content. In the molecular identification process using 16S rRNA, MHA 13 and MHA 16 isolates were *Alcaligenes faecalis*, 4EC and 10 EC were *Priesta flexa*

Keywords: GCMS, Nudibranch, Antibacterial Test