ABSTRACT

Sahrul Ramadani. 24020221130028. ***Antidiabetic Activity of Methanolic Extracts of Ramalina sp. and Teloschistes sp. through α-Amylase Inhibition Assay and In Silico Pharmacokinetic Profiling of Their Bioactive Compounds***. *Supervised by* Arina Trilunggani *and* Sri Pujiyanto.

The antidiabetic activity was assessed through α-amylase enzyme inhibition using the dinitrosalicylic acid (DNSA) method at various concentrations ranging from 100 to 1000 ppm. The results showed that the methanol extract of Teloschistes sp. exhibited the highest inhibitory activity at 63.97% at 1000 ppm, which was higher than that of Ramalina sp., with 54.69% inhibition. Functional group characterization using FTIR indicated the presence of phenolic, alcohol, aldehyde, alkene, and vinyl groups. Meanwhile, GC-MS analysis revealed that the methanol extract of Teloschistes sp. was rich in oleic acid and other unsaturated fatty acid compounds, whereas the methanol extract of Ramalina sp. predominantly contained phenolic compounds such as 1-propanone and methyl benzoate ester. Pharmacokinetic evaluation was conducted using the SwissADME server, showing that several compounds complied with Lipinski's Rule of Five and had high drug-likeness scores. The compounds that met the criteria included fluoropropion, ribitol, and arabitol (from Teloschistes sp. metabolites), as well as N,N'-Dimethylpiperazine, fluoropropion, and arabitol (from Ramalina sp. metabolites).

Keywords: *antidiabetic, α-amylase, pharmacokinetics, Ramalina sp., Teloschistes sp.,*