ABSTRAK

Analisis biotransformasi metabolit sekunder pada ekstrak metanol jahe emprit dengan penambahan kefir termasuk ke dalam konsep abstrak dengan contoh konkrit, sehingga diperlukan lembar kerja berbasis inkuiri terbimbing untuk mengaplikasikannya. Tujuan penelitian ini yaitu untuk mendeskripsikan tampilan lembar kerja berbasis inkuiri terbimbing, menganalisis hasil uji validasi lembar kerja berbasis inkuiri terbimbing, menganalisis hasil uji kelayakan lembar kerja berbasis inkuiri terbimbing, serta menganalisis biotransformasi metabolit sekunder ekstrak metanol jahe emprit dengan penambahan kefir. Metode penelitian yang digunakan yaitu *Design Based Research* (DBR) dengan menggunakan model EDDIE hingga tahap *development* saja. Lembar kerja ini telah dikembangkan sesuai dengan tahapan model pembelajaran inkuiri terbimbing, serta mendapatkan hasil r_{hitung} pada uji validasi dan uji kelayakan berturut-turut sebesar 0,88 dan 0,92. Hasil analisis biotransformasi metabolit sekunder ekstrak metanol jahe emprit dengan penambahan kefir menggunakan instrumen *Gas Chromatography – Mass Spechtrometry* (GCMS) menunjukkan adanya perubahan struktur molekul senyawa asal (*β-bisabolene*) menjadi senyawa baru (*Isobisabolene*). Hal tersebut menunjukkan lembar kerja ini dinyatakan valid dan layak digunakan sebagai media pembelajaran.

Kata kunci: *Lembar kerja, inkuiri terbimbing, biotransformasi, metabolit sekunder, jahe emprit, kefir.*

ABSTRACT

Biotransformation analysis of secondary metabolites in methanol extract of emprit ginger with the addition of kefir is an abstract concept with concrete examples, so a guided inquiry-based worksheet is needed to apply it. The aim of this research is to describe the appearance of a guided inquiry-based worksheet, analyze the validation test results of a guided inquiry-based worksheet, analyze the feasibility test results of a guided inquiry-based worksheet, and analyze the biotransformation of secondary metabolites of methanol extract of emprit ginger with the addition of kefir. The research method used is Design Based Research (DBR) using the EDDIE model up to the development stage only. This worksheet has been developed in accordance with the stages of the guided inquiry learning model, and obtained r-calculation results in the validation test and feasibility test of 0.88 and 0.92 respectively. The results of the biotransformation analysis of secondary metabolites from the methanol extract of emprit ginger with the addition of kefir using a Gas Chromatography - Mass Spechtrometry (GCMS) instrument showed that there was a change in the molecular structure of the original compound (β-bisabolene) into a new compound (Isobisabolene). This shows that this worksheet is declared valid and suitable for use as learning media.

Keywords: *Worksheets, guided inquiry, biotransformation, secondary metabolites, emprit ginger, kefir.*