ABSTRAK

Fitri Yati Sa'diah, 1182080019, 2022: Pengembangan Lembar Kerja Berbasis Inkuiri Terbimbing Pada Analisis Metabolit Sekunder Ekstrak Etanol Kunyit *(Curcuma longa)* dengan Penambahan Kefir

Metabolit sekunder dapat mengalami biotransformasi atau proses perubahan senyawa menjadi turunannya yang strukturnya berbeda dari senyawa asalnya akibat aktivitas metabolisme suatu mikroorganisme. Metabolit sekunder termasuk dalam konsep abstrak dengan contoh konkrit, sehingga untuk merepresentasikannya diperlukan lembar kerja yang sesuai. Bahan alam yang digunakan yaitu rimpang kunyit yang mengandung banyak metabolit sekunder. Penambahan kefir pada ekstrak kunyit akan mempengaruhi kandungan metabolit sekunder dalam ekstrak kunyit karena kefir memiliki banyak kandungan probiotik seperti bakteri asam laktat. Tujuan penelitian yaitu mendeskripsikan, menganalisis validasi serta kelayakan lembar kerja, dan menganalisis perubahan struktur molekul metabolit sekunder ekstrak kunyit dengan penambahan kefir. Metode yang digunakan adalah *Design Based Research*. Hasil validasi diperoleh nilai r_{hitung} 0,72 sehingga lembar kerja dikategorikan valid. Lembar kerja telah sesuai dengan tahapan pada pembelajaran inkuiri terbimbing sehingga layak digunakan sebagai media pembelajaran. Analisis perubahan struktur molekul pada metabolit sekunder ekstrak kunyit dengan penambahan kefir yaitu terdapat senyawa asal *6-(3-Hydroxy-4-methylphenyl)-2-methylhept-2-en-4-one* yang mengalami biotransformasi menjadi senyawa *6-(2-Hydroxy-4-methylphenyl)-2-methylhept-2-en-4-one.*

Kata kunci: Metabolit sekunder, biotransformasi, ekstrak kunyit, lembar kerja berbasis inkuiri terbimbing, kefir

ABSTRACT

Fitri Yati Sa'diah, 1182080019, 2022: *Development of Guided Inquiry-Based Worksheets on Secondary Metabolite Analysis of Turmeric (Curcuma longa) Etanol Extract with Addition of Kefir*

Secondary metabolites can undergo biotransformation or the process of changing a compound into its derivatives whose structure is different from the original compound due to the metabolic activity of a microorganism. Secondary metabolites are included in an abstract concept with concrete examples, so an appropriate worksheet is needed to represent them. The natural material used is turmeric rhizome which contains many secondary metabolites. The addition of kefir to turmeric extract will affect the content of secondary metabolites in turmeric extract because kefir contains many probiotics such as lactic acid bacteria. The research objectives were to describe, analyze the validation and feasibility of worksheets, and analyze changes in the molecular structure of secondary metabolites of turmeric extract with the addition of kefir. The method used is Design Based Research. The results of the validation obtained the value of rcount 0.72 so that the worksheet is categorized as valid. The worksheet is in accordance with the stages of guided inquiry learning so that it is suitable for use as a learning medium. Analysis of changes in the molecular structure of the secondary metabolites of turmeric extract with the addition of kefir, namely the original compound 6-(3-Hydroxy-4-methylphenyl)-2-methylhept-2-en-4-one which underwent biotransformation into 6-(2-Hydroxy) -4-methylphenyl)-2-methylhept-2-en-4-one.

Keywords: *Secondary metabolites, biotransformation, turmeric extract, guided inquiry-based worksheets, kefir*