INTISARI

Senyawa turunan kurkumin dalam bentuk enon dan dienon aromatis memiliki aktivitas sebagai inhibitor *angiogenesis*. Salah satunya adalah senyawa 2-(4'-hidroksibenzilidena)sikloheksana-1,3-dion yang berdasarkan pengujian secara komputasi memiliki interaksi yang lebih baik terhadap protein MetAP2. Oleh karena itu, senyawa 2-(4'-hidroksibenzilidena)sikloheksana-1,3-dion layak disintesis.

Sintesis 2-(4'-hidroksibenzilidena)sikloheksana-1,3-dion dilakukan dengan mereaksikan sikloheksana-1,3-dion sebanyak 3 mmol dan 4-hidroksibenzaldehid sebanyak 3 mmol dengan katalis kalium hidroksida berdasarkan reaksi kondensasi aldol silang. Senyawa hasil sintesis dianalisis dengan uji organoleptis, kelarutan, titik lebur, KLT dengan fase diam silika gel GF_{254} dan fase gerak n-heksan : etil asetat (3:2), kromatografi gas, serta elusidasi struktur dengan spektrofotometri inframerah dan spektroskopi massa.

Senyawa hasil sintesis berupa serbuk kuning berbau khas dengan rendemen sebesar 1,374%; 1,428%; dan 1,545%, mudah larut dalam metanol, etanol, dan etil asetat; sangat sukar larut dalam kloroform; praktis tidak larut dalam air dan n-heksan. Hasil uji KLT menunjukkan adanya senyawa baru dengan R_f 0,030; 0,073; 0,113; dan 0,153. Uji kemurnian dengan kromatografi gas menunjukkan kemurnian senyawa hasil sintesis sebesar 5,66% dengan titik lebur 158–170˚C. Hasil elusidasi struktur dengan spektroskopi massa dan inframerah menujukkan bahwa senyawa hasil sintesis adalah 2-(4'-hidroksibenzilidena)sikloheksana-1,3-dion.

Kata kunci : 2-(4'-hidroksibenzilidena)sikloheksana-1,3-dion, inhibitor *angiogenesis*, reaksi kondensasi aldol silang

ABSTRACT

The curcumin derivates in the form of enone and dienone aromatic have an activity as angiogenesis inhibitor. One of them is 2-(4'-hydroxybenzilidene) cyclohexane-1,3-dione. Based on the computational test, it has better interaction with MetAP2 protein. That's why 2-(4'-hydroxybenzilidene)cyclohexane-1,3-dione is proper to be synthesized.

The synthesis of 2-(4'-hydroxybenzilidene)cyclohexane-1,3-dione are carried out by reacting 3 mmol of cyclohexane-1,3-dione and 3 mmol of 4-hydroxybenzaldehyde with potassium hydroxide as catalyst based on cross-aldole condensation. The product result was analyzed by organoleptic, solubility, melting point, TLC with silica gel GF_{254} as stationary phase and n-hexane : ethyl acetate (3:2) as mobile phase, and also structure elucidation with infrared spectroscopy and mass spectroscopy tests.

The product resulting from the reaction was yellow powder with specific smell. Its yield value were 1.374%; 1.428%; and 1.545%. It's easily soluble in methanol, ethanol, and ethyl acetate; very difficult soluble in chloroform; practically insoluble in water and n-hexane. The TLC result showed the new products at R_f 0.030; 0.073; 0.113; and 0.153. The purity test by gas chromatography showed 5.66% purity. The melting point was 158–170˚C. The structure elucidation by infrared spectroscopy and mass spectroscopy showed that the compound synthesized is 2-(4'-hydroxybenzilidene)cyclohexane-1,3-dione.

Key words *: 2-(4'-hydroxybenziliden)cyclohexane-1,3-dione, inhibitor angiogenesis inhibitor, cross-aldole condensation reaction*