INTISARI

Salah satu senyawa turunan kurkumin yang berpotensi sebagai inhibitor *angiogenesis* adalah senyawa 2,2´-(1,4 fenilena *bis* (metanililidena)) disikloheksanadion. Senyawa ini memiliki dua sisi aktif (dua gugus *β* diketon) dan sebuah cincin aromatik sehingga diharapkan memiliki aktivitas inhibitor *angiogenesis* yang lebih baik dibanding kurkumin. Penelitian ini termasuk penelitian non eksperimental deskriptif non analitik yang dilakukan dengan mereaksikan 7,46 mmol 1,3-sikloheksanadion dan 3,73 mmol terephthalaldehid berdasarkan reaksi kondensasi aldol silang dengan katalis kalium hidroksida. Senyawa hasil sintesis diuji organoleptis, kelarutan, serta analisis kemurnian dengan uji titik lebur, kromatografi lapis tipis, dan kromatografi gas. Dilakukan juga elusidasi struktur dengan cara spektrofotometri infra merah, dan spektrometri massa.

Hasil sintesis berupa serbuk putih berbau khas dari tiga kali replikasi sebesar 0,695 g; 0,735 g; dan 0,783 g. Senyawa hasil sintesis mudah larut dalam piridin; larut dalam dimetil sulfoksida; agak sukar larut dalam aseton; sukar larut dalam kloroform dan etanol; praktis tidak larut dalam air. Hasil uji KLT menunjukkan senyawa hasil sintesis memiliki bercak tunggal. Uji kemurnian senyawa hasil sintesis dengan kromatografi gas menunjukkan kemurnian 94,06 % dan mempunyai titik lebur 218-220°. Elusidasi struktur dengan spektrofotometri IR dan hasil MS menunjukkan bahwa senyawa hasil sintesis adalah 2,2´-(1,4 fenilena *bis* (metanililidena)) disikloheksanadion.

Kata kunci: 2,2´-(1,4 fenilena *bis* (metanililidena)) disikloheksanadion, inhibitor *angiogenesis*, aldol silang

ABSTRACT

One of curcumin derivates having angiogenesis inhibitor potential is 2,2'-(1,4 phenylene *bis* (methanylylidene)) dicyclohexanedione. The activity of this compound due to is two β diketon's attached to aromatic ring so that the activity of angiogenesis inhibitor are expected have a better than curcumin. This research included non experimental descriptive non analytic research. It is expected that this kind of compound can be synthesized based on cross aldol condensation reaction of 1,3-cyclohexanedione and terephthalaldehyde with potassium hydroxide as catalyst. The synthesis product tested by organoleptic, solubility, and also purity analysis with melting point test, thin layer chromatography, and gas chromatography. The structure of the compound synthesized determined by structure elucidation with infrared spectrophotometry and mass spectrometry. The calculated moles was 7,46 mmol and 3,73 mmol respectively.

The product resulting from this reaction was white powder with specific smell. It's crude product was 0,695 g; 0,735 g; dan 0,783 g. The compound synthesized easily soluble in pyridine; soluble in dimethyl sulfoxide; rather difficult soluble in aceton; difficult soluble in chloroform and ethanol; practically not soluble in water. However, based on TLC analysis, there is no side product and reagent left was detect. It is narrow melting point support the purity of this resulted compound. Similarly, the chromatogram of GC showed 94,06% purity. Structure elucidation based on revealed infrared spectrophotometry and mass spectrometry that the compound was 2,2'-(1,4 phenylene *bis* (methanylylidene)) dicyclohexanedione.

Key words: 2,2'-(1,4 phenylene *bis* (methanylylidene)) dicyclohexanedione, angiogenesis inhibitors, cross aldol