*SINTESIS **O**-(4,6-DI-HIDROKSI-2,3-DI-O-METIL-α-D-GLUKOPIRANOSIL)-(1→4)-O-(2,3,6-TRI-O-METIL-α-D-GLUKOPIRANOSIL)-(1→4)-O-(2,3,6-TRI-O-METIL-1- DODESIL-TIO-β-D-GLIKOPIRANOSIDA) SEBAGAI SUATU PREKURSOR ANALOG SIKLODEKSTRIN*

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INTISARI

Turunan maltotriosa (**1-6)** telah disintesis. Turunan maltotriosa **6** merupakan prekursor dari analog β-siklodekstrin **7**. Ada enam langkah untuk mensintesis turunan maltotriosa **6**, yakni *O*-asetilasi, tioglikosidasi, de-asetilasi, benzilidasi, *O*-metilasi, dan de-benzilidasi. Turunan maltotriosa **1** disintesis dengan natrium asetat anhidrat dan asam asetat anhidrat berdasarkan metode Sakairi dan Kazuhara. Turunan maltotriosa **2** disintesis dengan menggunakan 1-dodekanatio dan boron triflorida dietil eter. Turunan maltotriosa **3** disintesis dengan natrium metoksida dalam metanol 28%. Turunan maltotriosa **4** disintesis dengan asam kamfor sulfonat dan benzaldehida dimetil asetal. Turunan maltotriosa **5** disintesis dengan dimetil sulfat dan natrium hidrida 60%. Turunan maltotriosa **6** disintesis dengan asam asetat 80%. Struktur produk dianalisis dengan *Fourier Transform Infrared (FTIR) Specstroscopy*, ^{1}H-, ^{13}C- *NMR, COSY NMR*, dan *ESI Mass Spectroscopy*.

Hasil penelitian menunjukkan bahwa *O*-asetilasi menghasilkan turunan maltotriosa **1** (95%), tioglikosidasi menghasilkan turunan maltotriosa **2** (54%), de-asetilasi menghasilkan turunan maltotriosa **3** (97%), *O*-benzilidasi menghasilkan produk campuran dari turunan maltotriosa **4**, *O*-metilasi menghasilkan turunan maltoriosa **5** (46%), dan de-benzilidasi menghasilkan turunan maltotriosa **6** (85%).

Kata kunci: sintesis, turunan, maltotriosa, analog, siklodekstrin

SYNTHESIS OF *O*-(4,6-DI-HYDROXY-2,3-DI-*O*-METHYL-α-D-GLUCOPYRANOSYL)-(1→4)-*O*-(2,3,6-TRI-*O*-METHYL-α-D-GLUCOPYRANOSYL)-(1→4)-*O*-(2,3,6-TRI-*O*-METHYL-1-DODECYL-THIO-β-D-GLYCOPYRANOSIDE) AS A PRECURSOR OF CYCLODEXTRIN ANALOGUE

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ABSTRACT

Maltotriose derivatives (**1**–**6**) have been synthesised. Maltotriose derivative **6** is a precursor of β-cyclodextrin analogue **7**. There were six steps to synthesise maltotriose derivative **6**, i.e. *O*-acetylation, thioglycosidation, de-acetylation, benzylidation, *O*-methylation, and de-benzylidation. Maltotriose derivative **1** was synthesised with anhydrous sodium acetate and acetic anhydride based on Sakairi and Kazuhara method. Maltotriose derivative **2** was synthesised with 1-dodecanethiol and boron triflouride diethyl etherate. Maltotriose derivative **3** was synthesised with sodium methoxide in methanol 28%. Maltotriose derivative **4** was synthesised with camphor sulfonic acid and benzaldehyde dimethyl acetal. Maltotriose derivative **5** was synthesised with dimethyl sulfate and sodium hydride 60%. Maltotriose derivative **6** was synthesised with acetic acid 80%. The product structures were analysed by Fourier Transform Infrared (FTIR) Specstroscopy, ^{1}H-, ^{13}C-NMR, COSY NMR, and ESI Mass Spectroscopy.

The result showed that *O*-acetylation reaction produced maltotriose derivative **1** (95%), thioglycosidation reaction produced maltotriose derivative **2** (54%), de-acetylation reaction produced maltotriose derivative **3** (97%), *O*-benzylidation reaction produced a mixture of maltotriose derivatives **4**, *O*-methylation reaction produced maltotriose derivative **5** (46%) and de-benzylidation reaction produced maltotriose derivative **6** (85%).

Keywords: synthesis, maltotriose, derivative, cyclodextrin, analogue