

DETEMINING THE SYNERGY OF EUGENOL-FERULIC ACID AS ANTIDIABETICS AGENTS AS DETERMINED BY α -AMYLASE ASSAY

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ABSTRACT

This experiment was called Determining the Synergy of Eugenol-Ferulic Acid as Antidiabetic Agents as Determined by α -Amylase Assay. The aims of this experiment were to determine the synergistic effect of eugenol with ferulic acid as an α -amylase enzyme inhibitor by *in vitro* testing and determining the inhibition activity of eugenol and ferulic acid using α -amylase as *in vitro* assay.

In this experiment, 4 samples were made to be tested on inhibiting α -amylase enzyme. The first sample used eugenol and ethanol. The second sample used ferulic acid and ethanol. The third sample used a mixture of eugenol and ferulic acid. The fourth sample used quercetin and ethanol. α -Amylase was tested using a 96 well-microplate apparatus. The sample solution was added with enzyme and was added by buffered α -amylase and then added by starch solution. The solution was terminated by HCl and added by iodine complex. The solution was analyzed to 96 well-microplates.

From this experiment, it could be concluded that the synergetic effect to inhibit α -amylase enzymes reached 97% with eugenol and ferulic acid concentration ratio of 1:2 and 1:4. This showed that the synergetic of eugenol and ferulic acid has a good effect to inhibit α -amylase enzymes, but it could not be used as a potential antidiabetic drug, because the inhibition activity percentage was lower than individual eugenol and ferulic acid. Eugenol at 0.5 mM and ferulic acid at 0.25 mM could be used to inhibit α -amylase enzyme since the inhibition activity percentage obtained was high.

Keywords : α - amylase, Antidiabetic Drug, Eugenol derivatives, Ferulic Acid



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