INTISARI

Indonesia adalah negara dengan prevalensi penderita diabetes tertinggi ke tujuh di dunia. Diabetes dapat dikontrol dengan mencegah hiperglikemia postprandial melalui penghambatan enzim pemetabolisme karbohidrat seperti α-amilase. Ekstrak protein biji lebui dari India diketahui mampu menginhibisi α-amilase saliva manusia dan pankreas *bovine*. Inhibitor α-amilase dapat berupa protein dan senyawa non-protein. Oleh karena itu, perlu dilakukan penelitian untuk menguji aktivitas inhibisi α-amilase dan identifikasi kandungan golongan senyawa non-protein dari biji lebui.

Pemisahan menggunakan metode partisi cair-cair dilakukan terhadap EEBL untuk memperoleh FH-EEBL, FEA-EEBL, dan FA-EEBL. Ekstrak dan fraksi ekstrak diuji aktivitas inhibisi α-amilase secara *in vitro* dengan metode spektrofotometri menggunakan reagen DNS. Efek inhibisi α-amilase ditunjukkan dengan parameter % inhibisi dan IC_{50}. Selanjutnya identifikasi kandungan golongan senyawa dilakukan menggunakan metode Kromatografi Lapis Tipis.

Hasil uji aktivitas inhibisi α-amilase ekstrak dan fraksi ekstrak menunjukkan hasil positif. IC_{50} yang diperoleh antara lain EEBL 190,0543 mg/ml, FH-EEBL 173,0489 mg/ml, FEA-EEBL 9,9820 mg/ml, FA-EEBL 137,1920 mg/ml, dan akarbosa sebagai pembanding 0,0140 mg/ml. Berdasarkan identifikasi kandungan golongan senyawa, EEBL mengandung terpenoid, alkaloid dan flavonoid, FH-EEBL mengandung terpenoid dan alkaloid, FEA-EEBL mengandung flavonoid, alkaloid, terpenoid, tanin, dan FA-EEBL mengandung flavonoid. FEA-EEBL memiliki aktivitas inhibisi α-amilase tertinggi dimana kemungkinan senyawa yang berperan dalam aktivitas inhibisi α-amilase adalah tanin.

Kata kunci : biji lebui (*Cajanus cajan* (L.) Millsp), α-amilase, ekstrak etanol

ABSTRACT

Indonesia is the country with the seventh highest prevalence of diabetics in the world. Diabetes can be controlled by preventing postprandial hyperglycemia by inhibition of carbohidrate metabolizing enzymes such as α-amylase. Extracts protein of pigeonpea seed from India was known to inhibit α-amylase of human saliva and pancreatic bovine. The α-amylase inhibitor may be a protein or a non-protein compound. Therefore, it is necessary to conduct study to test the activity of α-amylase inhibition and the identification of class content of non-protein compounds from pigeonpea seeds.

Separation using the liquid-liquid partition method is performed on EEBL to obtain FH-EEBL, FEA-EEBL, and FA-EEBL. The extract and fraction of the extract tested the activity of α-amylase inhibition in vitro by spectrophotometric method using DNS reagent. The effects of α-amylase inhibition are indicated by the parameters of inhibition and IC_{50}. Furthermore, the identification of group content of the compound was done using Thin Layer Chromatography method.

The results of inhibition activity of α-amylase extract and extract fraction showed positive result. IC_{50} obtained were EEBL 190,0543 mg/ml, FH-EEBL 173,0489 mg/ml, FEA-EEBL 9,9820 mg/ml, FA-EEBL 137,1920 mg/ml, and akarbose as comparison 0,0140 mg/ml. Based on the identification of the class content of the compound, EEBL contains terpenoids, alkaloids and flavonoids, FH-EEBL contains terpenoids and alkaloids, FEA-EEBL contains flavonoids, alkaloids, terpenoids, tannins, and FA-EEBL containing flavonoids. FEA-EEBL has the highest α-amylase inhibition activity in which the possible compound that plays a role in α-amylase inhibition activity is tannins.

Keywords: pigeonpea seeds (*Cajanus cajan* (L.) Millsp), α-amylase, ethanol extract