

**IN-VITRO α -AMYLASE INHIBITION POTENTIAL OF
ANTI-HYPERGLYCEMIC PLANTS USED BY SUNGAI
ETHNIC AT KOTA KINABATANGAN, SABAH**

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ABSTRACT

IN VITRO α -AMYLASE INHIBITION POTENTIAL OF ANTI-HYPERGLYCEMIC PLANTS USED SUNGAI ETHNIC AT KOTA KINABATANGAN, SABAH

Hyperglycemia is a common disease that is caused by excess amount of blood sugar levels. It can infect human regardless of age and gender. The current drugs used for treatment of hyperglycemia have high cost to the consumer. There are many plants in the world that can be used as natural anti-hyperglycemic agent that have not been well discovered by Sungai ethnic in Kota Kinabatangan, Sabah. In this study, interview session was undergone at Kampung Sukau, Kampung Bilit and Kampung Suan Lamba in order to identify medicinal plants used by Sungai ethnic. There are five medicinal plant species identified as the anti-hyperglycemic plants such as *Clinacanthus nutans*, *Cosmos caudatus*, *Momordica charantia*, *Morinda citrifolia* and *Moringa oleifera*. Data collection using snowball technique during interview session. Sample plants were collected from study sites and the sample were preserved by using ethanol and pressing technique. The relative frequency citation was used as the references to informants who cited uses of these plants. In this study, the range of Relative frequency citation from 0.05 to 0.16 as the low value range. This range is divided to three of low value categories; high value, middle value and low value. To test the α -amylase inhibition for all samples, starch and α -amylase used as substrate and enzyme respectively. Five different concentration of samples were used which are 20 μ g/mL, 40 μ g/mL 60 μ g/mL 80 μ g/mL and 100 μ g/mL. Two different solvents were used which are methanol and water. Methanol crude extract and water crude extract showed positive α -amylase inhibition activity. *Momordica charantia* has a high potential to be anti-hyperglycemic plant. Methanol crude extract are seen to be most potent α -amylase inhibitor as it has high inhibition at high concentration which is 75.8% inhibition at 100 μ g/mL, followed by water crude extract which is 68.21% at 100 μ g/mL.