

Research Article

Identification of Bioactive Compounds from Cocoa Fruit Skin (*Theobroma Cacao* L.) with Variations in Solvent Polarity Properties

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Abstract: Bioactive compounds are chemical compounds formed through metabolic processes in plants, contributing to their beneficial properties. Cocoa fruit, derived from 22 cultivated *Theobroma* species, contains a variety of bioactive compounds that offer several health benefits. Identifying these bioactive compounds in plants can be achieved through extraction using various solvents, depending on their polarity properties. This study aims to explore the content of bioactive compounds in dried cocoa fruit peel (*Theobroma cacao* L.) extract, focusing on variations in solvent polarity. The results of the study showed that the 90% ethanol extract (polar solvent) of cocoa fruit peel contained a range of bioactive compounds, including flavonoids, tannins, alkaloids, and saponins. Ethanol, being a polar solvent, effectively extracted a variety of bioactive compounds due to its ability to dissolve polar substances. This extract is significant due to its wide range of potential health benefits attributed to the presence of flavonoids, tannins, alkaloids, and saponins, all known for their antioxidant, antimicrobial, and anti-inflammatory properties. Additionally, the acetone extract (semi-polar solvent) of cocoa fruit peel also contained alkaloids, flavonoids, tannins, and saponins. Acetone, as a semi-polar solvent, was able to extract a variety of compounds with moderate polarity, making it a versatile solvent for bioactive compound extraction. The presence of alkaloids and saponins in this extract indicates its potential use for various medicinal purposes. On the other hand, the n-Hexane extract (non-polar solvent) of cocoa fruit peel produced primarily alkaloids and terpenoids. Hexane, being non-polar, tends to extract non-polar compounds, which include alkaloids and terpenoids known for their various biological activities. In conclusion, the study demonstrates the varying effectiveness of solvents with different polarities in extracting bioactive compounds from cocoa fruit peel, which can be utilized for health-promoting purposes.

Keywords: Bioactive, Cocoa Fruit Peel, Extraction, Polarity, Solvent.

1. Introduction

Compound bioactive is results from the metabolic processes in plants that produce something compound will but its function No so important in growth and development in plants the (Julianto, 2019) . Compounds bioactive often called compound metabolit secondary . Function from metabolit secondary For prevent growth bacteria , fungi and animals eater plants on a plant as well as maintaining and developing ability reproductive organs owned by plants That himself (Justinus et al ., 2018). Plants are known as the main producers of secondary metabolite compounds that have different high bioactive potentials that are used in the drug and pharmaceutical industry (Jain et al., 2019) .

Plants that contain bioactive compounds include the cocoa plant, where the most widely used part is the fruit. Included in the 22 cultivated *Theobroma* species, this plant is known to have various benefits and advantages (Rosio, 2018). Cocoa fruit (*Theobroma cacao* L.) is usually processed into chocolate, but the cocoa fruit skin is only thrown away as waste in large quantities and is not utilized, therefore cocoa fruit skin waste becomes a problem if it is produced in large quantities and not handled properly (Rachmawaty, 2018).

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Bioactive Compounds In Different Cocoa Theobroma Cacao

JA Banks



Bioactive Compounds In Different Cocoa Theobroma Cacao:

Bioactive Compounds In Different Cocoa Theobroma Cacao Book Review: Unveiling the Power of Words

In a global driven by information and connectivity, the power of words has be more evident than ever. They have the capacity to inspire, provoke, and ignite change. Such could be the essence of the book **Bioactive Compounds In Different Cocoa Theobroma Cacao**, a literary masterpiece that delves deep in to the significance of words and their impact on our lives. Published by a renowned author, this captivating work takes readers on a transformative journey, unraveling the secrets and potential behind every word. In this review, we shall explore the book is key themes, examine its writing style, and analyze its overall effect on readers.

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