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PUBLISHING INFORMATION

Bibliographic information:

Title

Proceedings of the 1st Tarumanagara International Conference on Medicine and Health (TICMIH 2021)

Editors

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[AHSR](#)

Volume

41

ISSN

2468-5739

ISBN

978-94-6239-473-5

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Phytochemical Screening, Total Antioxidant Capacity and Toxicity Test of White Jasmine Flower Extract (*Jasminum sambac*)

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Available Online 1 December 2021.

DOI

<https://doi.org/10.2991/ahsr.k.211130.009> [How to use a DOI?](#)

Keywords

Jasminum sambac; Phytochemical Screening; DPPH; Brine Shrimp Lethality Test

Abstract

Oxidative stress is a state of imbalance of antioxidants and reactive oxygen species levels in the body. Prolonged oxidative stress can cause degenerative diseases, malignancies, or premature aging. This situation can be prevented by antioxidants, compounds that can inhibit the oxidation process. One of the Indonesian plants, namely white jasmine flower, is known to contain a lot of secondary metabolites and have the potential to be antioxidants. Therefore, this research was conducted to determine the content of secondary metabolites, antioxidant potential, and toxicity of white jasmine flowers. Jasmine flower extract was made by maceration method using methanol solvent. Phytochemical screening was carried out in a semi-qualitative manner based on Harborne's book. The total antioxidant capacity test was carried out by the Blois method using DPPH (1,1-diphenyl-2-picrylhydrazyl) solution. Toxicity test was carried out using the BSLT (Brine Shrimp Lethality Test) method. In the phytochemical screening, jasmine flower extract was found alkaloids, flavonoids, cardio glycosides, glycosides, saponins, coumarins, phenolics, quinones, betacyanins, steroids, terpenoids, and tannins. It was found that jasmine flower extract had a total antioxidant capacity ($IC_{50} = 460.24 \mu\text{g/mL}$) which was categorized as weak antioxidant ($200 \text{ ppm} \leq IC_{50} \leq 500 \text{ ppm}$), and the level of toxicity ($LC_{50} = 111.43 \mu\text{g/mL}$) which has cytotoxic properties ($LC_{50} \leq 1000 \text{ ppm}$) and belongs to the moderate toxic category ($100 \text{ ppm} \leq LC_{50} \leq 1000 \text{ ppm}$). In summary, jasmine flower extract has the potential as an antioxidant and has the potential to be an antimetabolic agent.

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Proceedings of the 1st Tarumanagara International Conference on Medicine and Health (TICMIH 2021)

Series

Advances in Health Sciences Research

Publication Date

1 December 2021

ISBN

978-94-6239-473-5

ISSN

2468-5739

DOI

<https://doi.org/10.2991/ahsr.k.211130.009> [How to use a DOI?](#)

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TY - CONF
AU - Vincent Suaputra
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AU - Frans Ferdinal
PY - 2021
DA - 2021/12/01

TI - Phytochemical Screening, Total Antioxidant Capacity and Toxicity Test of White Jasmine Flower Extract (Jasminum sambac)
BT - Proceedings of the 1st Tarumanagara International Conference on Medicine and Health (TICMIH 2021)
PB - Atlantis Press
SP - 45
EP - 51
SN - 2468-5739
UR - <https://doi.org/10.2991/ahsr.k.211130.009>
DO - <https://doi.org/10.2991/ahsr.k.211130.009>
ID - Suaputra2021
ER -

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