



Yayu Evary &lt;yayuevary7@gmail.com&gt;

---

**Fwd: Galley Proof\_13\_ICOPMES-36**


---

**Andi Dian Permana** <andi.dian.permana@farmasi.unhas.ac.id>  
 Kepada: "yayuevary7@gmail.com" <yayuevary7@gmail.com>

7 September 2021 20.13

----- Forwarded message -----

From: **Managing Editor JEBAS** <jebasonline@gmail.com>  
 Date: Wed, 8 Sep 2021 at 05:13  
 Subject: Galley Proof\_13\_ICOPMES-36  
 To: Andi Dian Permana <andi.dian.permana@farmasi.unhas.ac.id>

Dear Author,

Your research article is scheduled to be published in the next issue of the Journal of Experimental Biology and Agricultural Sciences. I am herewith attaching galley proof of the same for your kind perusal. Kindly go through the proof very carefully and point out errors, if any. Please make a list of changes in given format and sent it to me. With this please check once again the correctness of the bibliography. Kindly, note that no further corrections shall be possible after this stage. Corrections, if any, or NIL REPORT must be sent to me within the next two days or earlier if possible. Your prompt response shall allow us to bring the next issue of JEBAS at its scheduled time.

We thank you for considering the JEBAS a suitable medium of publishing your research work. We hope to receive more manuscripts from you in future.

Error should indicate in the following format

S. No	Page Number	Column Number	Paragraph Number	Line Number	Present sentence	Correct sentence (Please highlight the correction )
1						
2						
3.						

**Kindly acknowledge the receiving of the same.**

With warm regards  
 Dr K K Chaudhary

---

**Galley Proof\_13\_ICOPMES-36.pdf**  
 528K

# ANTIOXIDANT ACTIVITY OF FOREST MANGGOSTEEN (*Garcinia hombroniana* Pierre) FRACTION USING DPPH AND ABTS METHOD

**Ismail**

Department of Pharmacognosy and Phytochemistry, Faculty of Pharmacy, Universitas Hasanuddin, Tamalanrea, Makassar, Indonesia

**Mufidah**

Department of Pharmacognosy and Phytochemistry, Faculty of Pharmacy, Universitas Hasanuddin, Tamalanrea, Makassar, Indonesia

**Sukamto S. Mamada**

Department of Pharmacology, Faculty of Pharmacy, Universitas Hasanuddin, Tamalanrea, Makassar, Indonesia

**Amrianto**

Department of Pharmacognosy and Phytochemistry, Faculty of Pharmacy, Universitas Hasanuddin, Tamalanrea, Makassar, Indonesia

**Yayu Mulsiani Evary**

Department of Pharmacognosy and Phytochemistry, Faculty of Pharmacy, Universitas Hasanuddin, Tamalanrea, Makassar, Indonesia

**DOI:** [https://doi.org/10.18006/2021.9\(Spl-2-ICOPMES\\_2020\).S280.S285](https://doi.org/10.18006/2021.9(Spl-2-ICOPMES_2020).S280.S285)

*Garcinia hombroniana*, DPPH, ABTS, Fraction Active Antioxidant

View PDF

## ABSTRACT

---

This study was carried out to determine the active antioxidant fraction of *Garcinia hombroniana* bark extract by the DPPH and ABTS method. Along with this, the study also attempts to identify the class of compounds present in the various extract of *G. hombroniana* by the active fraction. The bark extract of *G. hombroniana* was prepared by the multilevel maceration method by using three solvents including n-hexane, ethyl acetate, and 96% ethanol. Results of study suggested that n-hexane (HSE), ethyl acetate (EASE) and ethanol 96% extract (ESE) have antioxidant activity with IC<sub>50</sub> value of 423 ± 16.72 µg/mL, 284.89 ± 2.7µg/mL, and 10.49 ± 0.19 µg/mL in DPPH assay, while these extracts showed IC<sub>50</sub> value of 560.92 ± 48.86 µg/mL, 430.18 ± 16.65 µg/mL, and 13.92 ± 0.57 µg/mL respectively in ABTS assay. Further, fractionated using vacuum column chromatography revealed the presence of five fractions viz., A, B, C, D, and E. Among these, fractions D showed the highest antioxidant activity with an IC<sub>50</sub> value of 4.83 ± 0.18 µg/mL and 6.82 ± 0.31 µg/mL in DPPH and ABTS assays. Results of the fractioned analysis and qualitative determination showed that the active fraction of *G. hombroniana* contained flavonoid, triterpenoid, alkaloid, and saponin compounds, and antioxidant activities of these extracts might be due to the presence of these active ingredients.

## REFERENCES

---

Archana A, Anubha K (2011) An Overview in Thin Layer Chromatography. International Journal of Pharmaceutical Sciences Research 6: 256-267. DOI: 10.13040/IJPSR/0975-8232.2(2).256-67.

Budilaksono W, Wahdayaningsih S, Fahrurroji A (2014) Antioxidant N-Hexane Fraction from Red Dragon Fruit (*Hycloceres lemairei* Britton dan Rose) Using DPPH Method (1,1-Diphenyl-2-Picrylhydrazil). Jurnal Mahasiswa Farmasi Fakultas Kedokteran UNTAN 1(1): 1-11.

Bernd M, Christian B (2002) Antioxidants as Treatment for Neurodegenerative Disorders. Expert Opinion on Investigational Drugs 543784.11.10.1407.

View PDF

Elzbieta M, Anna W, Roman P, Robert R, Beata P, Helena (2016) The New TLC Method for Separation and Determination of Multicomponent Mixtures of Plant Extracts. *Journal of Analytical Methods in Chemistry* 1-6. Doi: 10.1155/2016/1813581.

Galuh W, Supiani, Yova T (2018) Antioxidant Activity and Toxicity of Puspa (*Schima wallicii*) Leaves Extract from Indonesia. *The Journal of Tropical Life Sciences* 8(2): 151-157.

Klaiklay S, Sukpondma Y, Rukachaisirikul V, Phongpaichit S (2013) Ficedolanostanes and xanthenes from the twigs of *Garcinia hombroniana*. *Phytochemistry* 85:161-166.

Listiyani A, Erla B, Puspitasari N(2017) Antioxidant Activity and Lipoxygenase Enzyme Inhibitory Assay with Total Flavonoids Content from *Garcinia hombroniana* Pierre Stem Bark Extract. *Pharmacognosy Journal* 9 (2):276-279.

Lobo V, Patil A, Phatak A, Chandra N(2010) Free Radicals Antioxidants and Functional Food: Impact on Human Health. *Pharmacognosy Reviews* 4(8): 118-126.

Nargis J, Melati K, Sadiq NK (2014) Phytochemicals from The Bark of *Garcinia homroniana* and Their Biological Activities. *Records of Natural Product* 8(3): 312-316.

Nargis J, Naeem K, Imran K, Amir AK, Sadiq NK (2015) A Bioactive Cycloartane Triterpen From *Garcinia hombroniana*. *Natural Product Research: Formerly Natural Product Letters* 30(12): 1388-1397 DOI : 10.1080/14786419.2015.1060594.

Phongpaichit S, Nikom J, Rungjindamai N, Sakayaroj J, Hutadilok-Towatana N, Rukachaisirikul V, Kirtikara K (2007) Biological Activities of Extract from Endophytic Fungi Isolated from *Garcinia* Plants. *FEMS Immunology & Medical Microbiology* 51(3): 517-525.

Poumorad F, Hosseinimehr SJ, Shahabimajd N (2006) Antioxidant activity phenol and flavonoid contents of some selected Iranian medicinal plants. *African Journal of Biotechnology* 11:1142 1145.

Rajkumar K, Shubarani R, Sivaram V (2015) Phytochemical Screening And Antioxidant Activity Of Leaves And Stem Bark Extracts Of *Garcinia hombroniana* Plant. *International Journal of Pharmaceutical Sciences and Research* 6(9):4016-4021. DOI: 10.1002/ijps.10009.4016-21.

View PDF

Sarker SD, Latif Z, Gray AI (2006) *Natural Products Isolation* Second Edition. United States: Human Press

Sen S, Chakraborty, Sridhar C, Reddy YSR, De B (2010) Free Radicals, Antioxidants, Diseases and Phytomedicines: Currents Status and Future Prospect. *International Journal of Pharmaceutical Sciences Review and Research* 3(1): 91-100.

Silvana H, Cristina A (2020) New Mechanism of Action of Natural Antioxidants in Health and Disease. *Antioxidants* 9:344. DOI: 10.3390/antiox9040344.

Wagner H, Blatt S (1996) *Plant Drug Analysis A Thin Layer Chromatography* Second Edition. Germany: Springer-Verlag Berlin Heidelberg.

 PDF



# Check for updates

PUBLISHED

2021-09-08

[View PDF](#)

Ismail, Mufidah, Mamada, S. S. ., Amrianto, & Evary, Y. M. . (2021). ANTIOXIDANT ACTIVITY OF FOREST MANGGOSTEEN (*Garcinia hombroniana* Pierre) FRACTION USING DPPH AND ABTS METHOD. *Journal of Experimental Biology and Agricultural Sciences*, 9(Spl-2-ICOPMES\_2020), S280-S285. [https://doi.org/10.18006/2021.9\(Spl-2-ICOPMES\\_2020\).S280.S285](https://doi.org/10.18006/2021.9(Spl-2-ICOPMES_2020).S280.S285)

More Citation Formats

#### ISSUE

[Vol. 9 No. Spl-2-ICOPMES 2020 \(2021\): Volume 9 Issue Spl-2-ICOPMES 2020, September Issue - 2021](#)

#### SECTION

RESEARCH ARTICLES

#### LICENSE



This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](#).

#### ONLINE ISSN

View PDF

## EDITORIAL BOARD

---

### **Editor-in-Chief**

Prof Y. Norma-Rashid  
(University of Malaya, Kuala Lumpur)  
*editor.in.chief.jebas@gmail.com*

### **Co-Editor in Chief**

Dr. Kuldeep Dhama, M.V.Sc., Ph.D.  
NAAS Associate, Principal Scientist, IVRI, Izatnagar India - 243 122  
*co\_eic@jebas.org*

### **Managing - Editor**

#### **Kamal K Chaudhary (India)**

*jebasonline@gmail.com*

#### **Dr. Anusheel Varshney**

University of Salford United Kingdom  
*jebas.managingeditor@gmail.com*

## INDEXING

---

Scopus [Details]

Index Copernicus

UGC-CARE Indexed Journal list Group II Journal SCOPUS [Details]

View PDF

(USDA, United Stats)

## SCOPUS CITE SCORE

---

0.1

2020  
CiteScore

4th percentile

Powered by 

## SCIMAGO JOURNAL RANK

---



## PUBLISHER

---



View PDF

HORIZON PUBLISHER INDIA [HPI]

## INFORMATION

---

For Readers

For Authors

For Librarians

## CURRENT ISSUE

---

ATOM 1.0

RSS 2.0

RSS 1.0

## PAGE VISITORS

---

31672

MAKE A SUBMISSION

View PDF

© Journal of Experimental Biology and Agricultural Sciences



[View PDF](#)



**Journal of Experimental Biology And Agricultural Science**  
**An International Open Access Journal**

[HOME](#) / [Editorial Team](#)

## Editorial Team

### EDITOR-IN-CHIEF

**Prof Y. Norma-Rashid** [[Details](#)]

University of Malaya, Kuala Lumpur  
editor.in.chief.jebas@gmail.com

### CO-EDITOR-IN-CHIEF

**Dr. Kuldeep Dhama, M.V.Sc., Ph.D.** [[Details](#)]

NAAS Associate, Principal Scientist, IVRI, Izatnagar India - 243 122  
co\_eic@jebas.org

### MANAGING-EDITOR

**Kamal K Chaudhary, M. Sc., Ph.D.** [[Details](#)]

Formar Faculty of N.E African University  
jebasonline@gmail.com

**Dr. Anusheel Varshney M.S. (UK); Ph.D (UK)**

University of Salford United Kingdom  
Jebas.managingeditor@gmail.com

## TECHNICAL EDITORS

### **Prof. Dr. Gary Straquadine** [[Details](#)]

Vice Chancellor and Vice Provost

Utah State University – Eastern Campus

Price, Utah 84501 USA

Email: gary.straquadine@usu.edu

### **Hafiz M. N. Iqbal (Ph.D.)** [[Details](#)]

Research Professor

Tecnologico de Monterrey,

School of Engineering and Sciences, Campus Monterrey,

Ave. Eugenio Garza Sada 2501, Monterrey, N. L., CP 64849, Mexico

E-mail: hafiz.iqbal@my.westminster.ac.uk

### **Prof. Dr. Mirza Barjees Baig** [[Details](#)]

Professor of Extension (Natural Resource Management)

Department of Agricultural Extension and Rural Society

College of Food and Agriculture Sciences, King Saud University

P.O. Box 2460, Riyadh 11451

Kingdom of Saudi Arabia

Email: mbbaig@ksu.edu.sa

### **Dr. Mukesh Kumar Meghvansi**

Scientist, Bioprocess Technology Division, Defence R & D Establishment, Gwalior-474002

Email: mk\_meghvansi@yahoo.co.in

**Dr. B L Yadav** [[Details](#)]

Professor and Director Research  
Mewar University, Chittorgarh, Rajasthan, India  
E mail: drblyadav@yahoo.com

**Dr. K L Meena** [[Details](#)]

Associate Professor, Department of Botany  
MLV Govt. College, Bhilwara, India  
E mail: kanhaiyameena211@yahoo.com

**Dr. Yashpal S. Malik** [[Details](#)]

ICAR – National Fellow  
Indian Veterinary Research Institute (IVRI)  
Izatnagar 243 122, Bareilly, Uttar Pradesh, India  
Email: malikyps@yahoo.com

**Abdulrasoul M. Alomran** [[Details](#)]

Professor of Soil and Water Sciences  
College of Food and Agricultural Sciences  
King Saud University  
Riyadh, Saudi Arabia  
E-mail: alomranrasoul@gmail.com

**ASSOCIATE EDITOR****Dr. Sunil K. Joshi** [[Details](#)]

Faculty & Lab Director, Cellular Immunotherapy  
Division of Pediatrics, Hematology / Oncology and Bone Marrow Transplantation

Department of Microbiology & Immunology  
Member, Sylvester Comprehensive Cancer Center, UM  
University of Miami, Miller School of Medicine  
Batchelor Children's Research Institute, Room 744  
1580 NW 10th Ave., Miami, FL 33136, USA  
Office: 305-243-7393  
Mobile: 757-448-5908  
Email: sunil.joshi@med.miami.edu

**Dr. Vincenzo Tufarelli** [[Details](#)]

Department of Emergency and Organ Transplantation (DETO)  
Section of Veterinary Science and Animal Production  
University of Bari 'Aldo Moro'  
S.P. Casamassima km 3, 70010 Valenzano, Italy  
Email: vincenzo.tufarelli@uniba.it

**Dr. Md. Moin Ansari** [[Details](#)]

Associate Professor-cum-Senior Scientist  
Division of Surgery and Radiology  
Faculty of Veterinary Sciences and Animal Husbandry  
Shuhama, Srinagar-190006, J&K, India  
Email: drmoin7862003@gmail.com

**Prof. Viliana Vasileva, PhD** [[Details](#)]

89 "General Vladimir Vazov" Str.  
Institute of Forage Crops  
5800 Pleven, BULGARIA  
Email: viliana.vasileva@gmail.com

**Prof. Sanjay-Swami, Ph.D. (Soil Science & Agril. Chemistry),**

School of Natural Resource Management,  
College of Post Graduate Studies in Agricultural Sciences,  
(Central Agricultural University),  
UMIAM (Barapani)-793 103, Meghalaya, INDIA  
Email: [sanjay.nrm.cpgsas@cau.ac.in](mailto:sanjay.nrm.cpgsas@cau.ac.in)

**Chiranjib Chakraborty, Ph.D.[[Details](#)]**

Professor, School of Life Science and Biotechnology,  
Adamas University, Kolkata, India

Academic Editor: iScience (Cell press Journal) (IF= 5.458); Handling/Receiving Editor: Infection ,Genetics and Evolution (IF=3.342);

Associate Editor: Frontiers in Bioengineering and Biotechnology (IF= 5.890); Associate Editor: Frontiers in Pharmacology (IF= 5.810)

Profile: <http://community.frontiersin.org/people/ChiranjibChakraborty/18716>

Google Scholar Id: 3m8rwpUAAAAJ

Scopus ID: 56219079200

Orcid ID: 0000-0002-3958-239X

Web of Science Researcher ID: AAV-1132-2021

e-mail: drchiranjib@yahoo.com

**ASSISTANT EDITOR****Dr Ayman EL Sabagh [[Details](#)]**

Assistant professor, Department of Agronomy,  
Faculty of Agriculture, Kafresheikh University, Egypt  
Email: [ayman.elsabagh@agr.kfs.edu.eg](mailto:ayman.elsabagh@agr.kfs.edu.eg)

**Dr. Masnat Al Hiary [[Details](#)]**

Director of the Socio- economic Studies Directorate

Socio-economic Researcher  
National Center for Agricultural Research and Extension (NCARE)  
P.O.Box 639 Baqa'a 19381 Jordan  
Email: masnath@yahoo.com

**Safar Hussein Abdullah Al-Kahtani (Ph.D.)** [[Details](#)]

King Saud University-College of Food and Agriculture Sciences,  
Department of the Agricultural Economics  
P.O.Box: 2460 Riyadh 11451, KSA  
email: SAFARK@KSU.EDU.SA

**Dr Ruchi Tiwari** [[Details](#)]

Assistant Professor (Sr Scale)  
Department of Veterinary Microbiology and Immunology,  
College of Veterinary Sciences,  
UP Pandit Deen Dayal Upadhyay Pashu Chikitsa Vigyan Vishwavidyalay Evum Go-Anusandhan Sansthan (DUVASU),  
Mathura, Uttar Pradesh, 281 001, India  
Email: ruchi.vet@gmail.com

**Dr. ANIL KUMAR (Ph.D.)** [[Details](#)]

Asstt. Professor (Soil Science)  
Farm Science Centre (KVK)  
Booh, Tarn Taran, Punjab (India) - 143 412  
Email: anilkumarhpkv@gmail.com

**Akansha Mishra** [[Details](#)]

Postdoctoral Associate, Ob/Gyn lab  
Baylor College of Medicine  
1102 Bates Ave, Houston Tx 77030  
Email: akansha.mishra@bcm.edu; aksmisra@gmail.com

**Dr. Muhammad Bilal**[\[Details\]](#)

Associate Professor

School of Life Science and Food Engineering,  
Huaiyin Institute of Technology, Huaian 223003, China

Email: [bilaluaf@hotmail.com](mailto:bilaluaf@hotmail.com)

**Dr. Izabela Michalak**[\[Details\]](#)

Associate Professor

Faculty of Chemistry, Department of Advanced Material Technologies,  
Wroc?aw University of Science and Technology, Wroc?aw 50-370, Poland

Email: [izabela.michalak@pwr.edu.pl](mailto:izabela.michalak@pwr.edu.pl)

**Dr. Senthilkumar Natesan**

Associate Professor

Department of Infectious Diseases, Indian Institute of Public Health  
Gandhinagar, Opp to Airforce station HQ, Lekawada, Gandhinagar, Gujarat - 382042, India

Email: [snatesan@iiphg.org](mailto:snatesan@iiphg.org)

**Dr. Jehangeer Rehman Quereishi**

Associate Professor - Botany

Govt. Bangure College, Deedwana.

Email: [quereishi.jrq660@gmail.com](mailto:quereishi.jrq660@gmail.com)

**Mr. Ram Bahadur Khadka (Microbiologist)**[\[Details\]](#)

Assistant Professor (Pokhara University)

Crimson College of Technology (CCT)

Butwal-13, Rupandehi, Lumbini Province, Nepal

Email: [rambahadurkhadka00@gmail.com](mailto:rambahadurkhadka00@gmail.com)

**Prof. A. VIJAYA ANAND**[\[Details\]](#)

Professor

Department of Human Genetics and Molecular Biology

Bharathiar University

Coimbatore – 641 046

**Dr. Phetole Mangena**[\[Details\]](#)

Department of Biodiversity, School of Molecular and Life Sciences,

Faculty of Science and Agriculture, University of Limpopo, Republic of South Africa

Private Bag X1106, Sovenga, 0727

Email: Phetole.Mangena@ul.ac.za ; mangena.phetole@gmail.com

**ONLINE ISSN**

---

2320 8694

**EDITORIAL BOARD**

---

**Editor-in-Chief**

Prof Y. Norma-Rashid

(University of Malaya, Kuala Lumpur)

*editor.in.chief.jebas@gmail.com***Co-Editor in Chief**

Dr. Kuldeep Dhama, M.V.Sc., Ph.D.

NAAS Associate, Principal Scientist, IVRI, Izatnagar India - 243 122

*co\_eic@jebas.org*

### **Managing - Editor**

**Kamal K Chaudhary (India)**

*jebasonline@gmail.com*

**Dr. Anusheel Varshney**

University of Salford United Kingdom

*jebas.managingeditor@gmail.com*

## **INDEXING**

---

Scopus [Details]

Index Copernicus

UGC-CARE Indexed Journal list Group II Journal SCOPUS [Details]

AGRICOLA DATABASE (NAL-USDA, United Stats)

CABI – (UK)

## **SCOPUS CITE SCORE**

---

**0.1**

2020  
CiteScore

4th percentile

Powered by **Scopus**

## SCIMAGO JOURNAL RANK

---



## PUBLISHER

---



HORIZON PUBLISHER INDIA [HPI]

## INFORMATION

---

For Readers

For Authors

For Librarians

## CURRENT ISSUE

---

ATOM 1.0

RSS 2.0

RSS 1.0

## PAGE VISITORS

---

31673

MAKE A SUBMISSION

---

©Journal of Experimental Biology and Agricultural Sciences

---