Molecular and Cellular Biomedical Sciences

Volume 5, Number 1, March 2021

RESEARCH ARTICLES

Print ISSN: 2527-4384
Online ISSN: 2527-3442

https://www.cellbiopharm.com/ojs/index.php/MCBS

Cell and Biopharmaceutical Institute

Volume 5, Number 1, March 2021 Print ISSN: 2527-4384, Online ISSN: 2527-3442

Molecular and Cellular Biomedical Sciences

PRINCIPAL CONTACT

MCBS OFFICE
Prodia Tower 8th Floor, Jl. Kramat Raya No.150, Jakarta Pusat 10430
Email: mcbs_office@cellbiopharm.com

SUPPORT CONTACT

Nurrani Mustika Dewi
Email: nurranimustika@gmail.com

FOCUS AND SCOPE

Molecular and Cellular Biomedical Sciences (MCBS) is an open access, peer-reviewed journal that supports all topics in Biology, Pathology, Pharmacology, Biochemistry, Histology and Biomedicine in the aspect of molecular and cellular.

MCBS is dedicated to publish review and research articles. The editors will carefully select manuscript to be delivered for peer-reviewing process. Therefore MCBS is committed to present only the valuable and recent scientific findings.

SECTION POLICIES

REVIEW ARTICLE
Review Article should consist of no more than 10,000 words, not including the words in abstract, references, table, figure, and figure legend. The manuscript should have no more than six figures and/or tables in total and no more than 200 references.

RESEARCH ARTICLE
Research Article should consist of no more than 3,500 words, not including the words in abstract, references, table, figure, and figure legend. The manuscript should have no more than six figures and/or tables in total and no more than 40 references.

PEER REVIEW PROCESS

All manuscripts submitted to Molecular and Cellular Biomedical Sciences will be selected and blind peer-reviewed by 2 or more reviewers when necessary, to present valuable and authentic findings. All details will also be reviewed, including appropriate title; content reflecting abstract; concise writing; clear purpose, study method and figures and/or tables; and summary supported by content. The reviewing process will take generally 2-3 months depends on sufficiency of information provided.

Peer-reviewers were selected based on their specialties that fit to the topic. Additional reviewer/s can also be pointed when necessary. Author can suggest reviewer/s that not having publication together within five years and should not be member/s of the same research institution.

PUBLICATION FREQUENCY

Molecular and Cellular Biomedical Sciences is published triannually (in March, July, and November).

OPEN ACCESS POLICY

This journal provides immediate open access to its content on the principle that making research freely available to the public supports a greater global exchange of knowledge.

 Print ISSN: 2527-4384, Online ISSN: 2527-3442

Molecular and Cellular Biomedical Sciences

ARCHIVING

This journal utilizes the LOCKSS system to create a distributed archiving system among participating libraries and permits those libraries to create permanent archives of the journal for purposes of preservation and restoration.

PLAGIARISM SCREENING POLICY

All manuscripts submitted to Molecular and Cellular Biomedical Sciences will be screened for plagiarism by using Grammarly.

CONTENT LICENSING

CONFLICT OF INTEREST POLICY

AUTHOR'S CONFLICT OF INTEREST

At the point of submission, Molecular and Cellular Biomedical Sciences requires that each author reveal any personal and/or financial interests or connections, direct or indirect, or other situations that might raise the question of bias in the work reported or the conclusions, implications, or opinions stated. When considering whether you should declare a conflicting interest or connection, please consider the conflict of interest test: Is there any arrangement that would embarrass you or any of your co-authors if it was to emerge after publication and you had not declared it? Corresponding authors are responsible to confirm whether they or their co-authors have any conflicts of interest to declare, and to provide details of these. The statement includes any information regarding whether the manuscript is under consideration for other publication, or whether you have any patents that relevant to the manuscript. If the manuscript is published, any conflict of interest information will be written in the Conflict of Interest statement.

AUTHOR'S ACKNOWLEDGEMENT

Authors whose manuscripts are submitted for publication must declare all relevant sources of funding in support of the preparation of a manuscript. Molecular and CellularBiomedical Sciences requires full disclosure of financial support as to whether it is from government agencies, the pharmaceutical or any other industry, or any other source. Authors are required to specify sources of funding for the study and to indicate whether or not the manuscript was reviewed by the sponsor prior to submission. This information should be included in the Acknowledgements section of the manuscript. In addition to disclosure of direct financial support to the authors or their laboratories and prior sponsor-review of the paper, corresponding authors will be asked to disclose all relevant consultancies since the views expressed in the contribution could be influenced by the opinions they have expressed privately as consultants. This information should also be included in the Acknowledgments section of the manuscript.

REVIEWER'S CONFLICT OF INTEREST

Reviewers must disclose to editors any conflicts of interest that could bias their opinions of the manuscript, and should recuse themselves from reviewing specific manuscripts if the potential for bias exists. As in the case of authors, silence on the part of reviewers concerning potential conflicts may mean either that such conflicts exist that they have failed to disclose, or that conflicts do not exist. Reviewers must not use information of the manuscript they are reviewing before it is being published, to further their own interests.

PROTECTION OF HUMAN SUBJECT AND ANIMAL IN RESEARCH POLICY

When reporting experiments on human subjects, authors should indicate whether the procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the World Medical Association Declaration of Helsinki. If doubt exists whether the research was conducted in accordance with the said declaration, the authors must explain the rationale for their approach, and demonstrate that the institutional review body explicitly approved the doubtful aspects of the study.

When reporting experiments on animals, authors should be asked to indicate whether the institutional and national guide for the care and use of laboratory animals was followed. Further guidance on animal research ethics is available from the International Association of Veterinary Editors' Consensus Author Guidelines on Animal Ethics and Welfare.

INFORMED CONSENT POLICY

Patients have a right to privacy that should not be violated without informed consent. Identifying information, including names, initials, or hospital numbers, should not be published in written descriptions, photographs, or pedigrees unless the information is essential for scientific purposes and the patient (or parent or guardian) gives written informed consent for publication. Authors should disclose to these patients whether any potential identifiable material might be available via internet as well as in print after publication. Nonessential identifying details should be omitted.

Molecular and Cellular Biomedical Sciences decides that patient confidentiality is better guarded by having the authors archive the consent, and instead providing us with a written statement in the manuscript attesting that they have received and archived written patient consent. When informed consent has been obtained, it should be indicated later in the published article.

ROLE OF JOURNAL EDITOR

Editors of Molecular and Cellular Biomedical Sciences have responsibilities toward the authors who provide the content of the journals, the peer reviewers who comment on the suitability of manuscripts for publication, also toward the journal's readers and the scientific community. Editors are responsible for monitoring and ensuring the fairness, timeliness, thoroughness, and civility of the peer-review and other editorial processes.

Peer review by external reviewers with the proper expertise is the most common method to ensure manuscript quality. However, our editors may sometimes reject manuscripts without external peer review to make the best use of their resources. Reasons for this practice are usually that the manuscript is outside the scope of Molecular and Cellular Biomedical Sciences, does not meet our quality standards or lacks originality or novel information.

Editor Responsibilities toward Authors

- Providing guidelines to authors for preparing and submitting manuscripts
- Providing a clear statement of the Journal's policies on authorship criteria
- Treating all authors with fairness, courtesy, objectivity, honesty, and transparency
- Establishing and defining policies on conflicts of interest for all involved in the publication process, including editors, staff, authors, and reviewers
- Protecting the confidentiality of every author's work
- Establishing a system for effective and rapid peer review
- Making editorial decisions with reasonable speed and communicating them in a clear and constructive manner
- Being vigilant in avoiding the possibility of editors and/or referees delaying a manuscript for suspect reasons
- Establishing a procedure for reconsidering editorial decisions
- Describing, implementing, and regularly reviewing policies for handling ethical issues and allegations or findings of misconduct by authors and anyone involved in the peer review process
- Informing authors of solicited manuscripts that the submission will be evaluated according to the journal's standard procedures or outlining the decision-making process if it differs from those procedures
- Clearly communicating all other editorial policies and standards

Editor Responsibilities toward Reviewers

- Assigning papers for review appropriate to each reviewer's area of interest and expertise
- Establishing a process for reviewers to ensure that they treat the manuscript as a confidential document and complete the review promptly
- Informing reviewers that they are not allowed to make any use of the work described in the manuscript or to take advantage of the knowledge they gained by reviewing it before publication
- Providing reviewers with written, explicit instructions on the journal's expectations for the scope, content, quality, and timeliness of their reviews to promote thoughtful, fair, constructive, and informative critique of the submitted work

Molecular and Cellular Biomedical Sciences

- Requesting that reviewers identify any potential conflicts of interest and asking that they recuse themselves if they cannot provide an unbiased review
- Allowing reviewers appropriate time to complete their reviews
- Requesting reviews at a reasonable frequency that does not overtask any reviewer
- Finding ways to recognize the contributions of reviewers, for example, by publicly thanking them in the journal; providing letters that might be used in applications for academic promotion; offering professional education credits; or inviting them to serve on the editorial board of the journal
- Making final decision regarding a submission status after receiving review result from reviewers

Editor Responsibilities toward Readers and the Scientific Community

- Evaluating all manuscripts considered for publication to make certain that each provides the evidence readers need to evaluate the authors' conclusions and that authors' conclusions reflect the evidence provided in the manuscript
- Providing literature references and author contact information so interested readers may pursue further discourse
- Requiring the corresponding author to review and accept responsibility for the content of the final draft of each paper
- Maintaining the journal's internal integrity (e.g., correcting errors; clearly identifying and differentiating types of content, such as reports of original data, corrections/errata, retractions, supplemental data, and promotional material or advertising; and identifying published material with proper references)
- Ensuring that all involved in the publication process understand that it is inappropriate to manipulate citations by, for example, demanding that authors cite papers in the journal
- Disclosing all relevant potential conflicts of interest of those involved in considering a manuscript or affirming that none exist
- Working with the publisher to attract the best manuscripts and research that will be of interest to readers

AUTHOR GUIDELINES

1. General Terms

Molecular and Cellular Biomedical Sciences welcomes articles covering all aspects of biomedical sciences. All submitted manuscripts must not be previously published and not under consideration for publication elsewhere. Papers may come from any country but must be written in English. The manuscript may be submitted as review articles, research articles, and short communications. There are no submission and processing charges for this journal.

All manuscripts are subjected to peer review. All submissions must be accompanied by abstracts of the authors' manuscripts on related subjects that are in press or under editorial review. Electronic reprints of related published papers by the author/s or manuscripts in the press also may be helpful to the reviewers.

All manuscripts must be accompanied by a covering letter signed by all author/s. Upon acceptance, author/s must transfer copyright to Cell and BioPharmaceutical Institute (CBPI). Accepted papers become the permanent property of CBPI and may be used according to copyright policy, or for particular purposes, please contact CBPI. It is the author/s' responsibility to obtain permission to reproduce illustrations, tables, etc. from other publication.

2. How to Submit

Authors are required to submit manuscripts electronically by using online journal system cellbiopharm.com/ojs.

3. Requirements of Each Manuscript Type

Review Article: Review Article should consist of no more than 10,000 words, not including the words in abstract, references, table, figure, and figure legend. The manuscript should have no more than six figures and/or tables in total and no more than 200 references.

Research Article: Research Article should consist of no more than 3,500 words, not including the words in abstract, references, table, figure, and figure legend. The manuscript should have no more than six figures and/or tables in total and no more than 40 references.

4. Absract

Provide an abstract of no more than 300 words (for Review Article) or 250 words (for Research Article). Structured-abstract should be followed in writing Research Article.

5. References

- References should be according to the Vancouver system.
- List all authors when there are six or fewer; when there are seven or more, list the first six, followed by "et al.".
- A sequential number of references in the main text. Please follow in detail all examples below:

Article:

Sandra F, Esposti MD, Ndebele K, Gona P, Knight D, Rosenquist M, et al. Tumor Necrosis Factor-Related Apoptosis-Inducing Ligand Alters Mitochondrial Membrane Lipids. Cancer Res. 2005; 65(18): 8286-97.

Book

Murray PR, Rosenthal KS, Kobayashi GS, Pfaller MA. Medical microbiology. 4th ed. St. Louis: Mosby; 2002.

Chapter in a book:

Rosenberg GA. Matrix metalloproteinase and proteolytic opening of the blood-brain-barrier in neuroinflammation. In: deVries E, Prat A, editors. The Blood-brain Barrier and Its Microenvironment Basic Physiology To Neurological Disease. New York: Taylor and Francis Group; 2005. p.335-58.

Dissertation/Thesis/Essay:

Arlauckas SP. Near infrared fluorescent choline kinase alpha inhibitors for cancer imaging and therapy [Dissertation]. Philadelphia: University of Pennsylvania; 2015.

Part of Website/Monograph:

Medline Plus [Internet]. Bethesda: US National Library of Medicine; ©2009. Diabetic Kidney Problems [update 2015 Nov 2; cited 2015 Nov 16]. Available from: https://www.nlm.nih.gov/medlineplus/diabetickidneyproblems.html/.

Conference Paper:

Fledelius HS. Myopia and significant visual impairment: global aspects. In: Lin LLK, Shin YF, Hung PT, editors. Myopia Updates II: Proceedings of the 7th International Conference on Myopia 1998 Nov 17-20, Taipei. Tokyo: Springer; 2000. p.3-17.

6. Unit of Measurement

- Authors can express all measurements in Conventional or International System (SI) units.
- Drug names must use generic names. When proprietary brands are used in research, include the brand name, the name and location (city & country) of the manufacturer in parentheses after the first mention of the generic name.

SUBMISSION PREPARATION CHECKLIST

As part of the submission process, authors are required to check off their submission's compliance with all of the following items, and submissions may be returned to authors that do not adhere to these guidelines.

1. The submission has not been previously published, nor is it before another journal for consideration (or an explanation has been provided in Comments to the Editor).
2. The submission file is in OpenOffice, Microsoft Word, RTF, or WordPerfect document file format. Formatted as standard A4 page setup.
3. Where available, URLs for the references have been provided.
4. The text should be double-spaced with the 1-inch margin on the left and right sides. Use 12-point Times New Roman font.
5. The text adheres to the stylistic and bibliographic requirements outlined in the Author Guidelines, which is found in About the Journal.
6. Running title provided (not more than 8 words).
7. Proof of permission was obtained to reproduce illustrations, tables, etc. from other publication.
8. Complete information about author/s (first, middle, last name), author/s's affiliation, and email address of the corresponding author.
9. All pages are numbered at bottom right.

COPYRIGHT NOTICE

For the submission of a manuscript to Molecular and Cellular Biomedical Sciences, I hereby certify that:

 Print ISSN: 2527-4384, Online ISSN: 2527-3442

Molecular and Cellular Biomedical Sciences

1. I have been granted authorization by my co-author/s to enter into these arrangements.
2. I hereby declare, on behalf of myself and my co-author/s, that:
   - The manuscript submitted is an original work and has neither been published in any other peer-reviewed journal nor is under consideration for publication by any other journal. More so, the work has been carried out in the author/s' lab and the manuscript does not contravene any existing copyright or any other third party rights.
   - I am/we are the sole author/s of the manuscript and maintain the authority to enter into this agreement and the granting of rights to the publisher: The Cell and BioPharmaceutical Institute (CBPI), does not infringe any clause of this agreement.
   - The manuscript contains no such material that may be unlawful, defamatory, or which would, if published, in any way whatsoever, violate the terms and conditions as laid down in the agreement.
   - I/we have taken due care that the scientific knowledge and all other statements contained in the manuscript conform to true facts and authentic formulae and will not, if followed precisely, be detrimental to the user.
   - I/we permit the adaptation, preparation of derivative works, oral presentation or distribution, along with the commercial application of the work.
   - No responsibility is assumed by Molecular and Cellular Biomedical Sciences (MCBS) and CBPI, its staff or members of the editorial boards for any injury and/or damage to persons or property as a matter of products liability, negligence or otherwise, or from any use or operation of any methods, products instruction, advertisements or ideas contained in a publication by MCBS.

Volume 5, Number 1, March 2021 Print ISSN: 2527-4384, Online ISSN: 2527-3442

Molecular and Cellular Biomedical Sciences

CONTENT

RESEARCH ARTICLES

Molecular and Cellular Biomedical Sciences

Abstract

DDC 616.398
Nauli F, Nurhasanah, Mahati E, Bahrudin U (Postgraduate Program in Biomedical Sciences, Faculty of Medicine, Universitas Diponegoro, Semarang, Indonesia)

Body Fat Percentage, Waist Circumference and Body Mass Index are Correlated with Nitric Oxide Levels in Young Adults with Central Obesity

Mol Cell Biomed Sci. 2021; 5(1): 1-7

Abstract (English)

Background: Central obesity stands for the corner-stone of cardio-metabolic health, while nitric oxide (NO) is a major regulator of cardiovascular function. To day, the correlation between serum NO metabolites nitrate/nitrite and the obesity components in young adults remains elusive. Thus, this current study was conducted to know the correlation between serum NO metabolites levels and body fat percentage, waist circumference (WC) as well as body mass index (BMI) in young adults with central obesity.

Materials and Methods: A cross-sectional study was conducted in Riau, Indonesia, involving 79 young adults aged 18-25 years, composing of 39 and 40 subjects with and without central obesity, respectively. Anthropometric measurements were performed to assess WC and BMI. Body fat percentage was measured using bioelectrical impedance analysis and serum NO metabolites levels were assessed using Griess methods.

Results: Levels of serum NO metabolites were significant higher in the subjects with central obesity (168.41±12.64 µmol/L) than that of normal subjects (70.57±44.99 µmol/L, p<0.001), but the levels were no significant different between male and female subjects. Serum NO metabolites levels were strongly correlated with total body fat (r=0.618, p<0.001), visceral fat (r=0.733, p<0.001), subcutaneous fat (r=0.547, p<0.001), WC (r=0.717, p<0.001) and BMI (r=0.788, p<0.001).

Conclusions: For young adults in Riau, Indonesia, levels of serum NO metabolites are higher in the central obesity group than that of the normal. In this population, body fat percentage, waist circumference and body mass index are correlated with serum nitric oxide metabolites levels.

Keywords: nitric oxide, body fat percentage, young adults, central obesity

DDC 615.321
Wahdaningsih S, Wahyuono S, Riyanto S, Murwanti R (Department of Pharmacy, Faculty of Medicine, Universitas Tanjungpura, Pontianak, Indonesia)

Lymphocyte Proliferation and Nitric Oxide-Producing Activities of Lupeol Isolated From Red Dragon Fruit (*Hylocereus polyrhizus*) Extract

Mol Cell Biomed Sci. 2021; 5(1): 8-12

Abstract (English)

Background: *Hylocereus polyrhizus* has activities as antimicrobial agent, anti-hypercholesterolemia, anti-diabetic (diabetes mellitus), cardiovascular risk reduction, health supplement, and melanoma cell suppression. The extracts from the peels of *H. polyrhizus* were able to increase phagocytic ability, cell numbers and leukocytes and to influence relative spleen weights in the formation of body immune system in male rats. The fruit peels contained phenolics, flavonoids, carotenoids, and anthocyanins. This study investigated the active compounds of H. polyrhizus peels, which are able to increase immune system of human body.

Materials and method: *In vitro* assay was applied to examine the active compounds, identified as lupeol, obtained from isolated extract of red dragon fruit for their lymphocyte proliferation and nitric oxide (NO)-producing activities. Lymphocyte proliferation assay was performed with 3-4.5-dimethylthiazol-2-yl)-2.5-diphenyltetrazolium bromide (MTT) method. The cell control was lymphocyte cell suspension in RPMI medium added with phytohaemaglutinine (PHA). The NO measurement was conducted with nitric solvent and Greiss reagent.

Results: The ANOVA analysis of the average optical density (OD) of lymphocyte proliferation showed that the addition of isolated lupeol at the concentrations of 6.25, 12.5, 25, 50 and 100 µg/mL were able to improve lymphocyte proliferation and activate the NO production in the rats with treatment of positive control.

Conclusion: Isolated lupeol at concentrations of 6.25, 12.5, 25, 50 and 100 µg/mL revealed significant difference with medium control and cell control. It was able to increase effects on lymphocyte proliferation and NO production. Therefore, the lupeol which was isolated might have high potential to be an immunostimulant.

Keywords: Hylocereus polyrhizus, lupeol, lymphocyte proliferation, nitric oxide production

Volume 5, Number 1, 2021 Print ISSN: 2527-4384, Online ISSN: 2527-3442

Molecular and Cellular Biomedical Sciences

DDC 612.665
Jusup I, Batubara L, Ngestiningsih D, Fulyani F, Paveta DA, Bancin PTLA (Department of Medical Biology and Biochemistry, Faculty of Medicine, Universitas Diponegoro, Semarang, Indonesia)
Association between Malondialdehyde, GSH/GSSG Ratio and Bone Mineral Density in Postmenopausal Women
Mol Cell Biomed Sci. 2021; 5(1): 13-7
Abstract (English)
Background: Osteoporosis is one of chronic degenerative diseases especially in postmenopausal women, characterized by a decreased bone mass due to imbalance activity between osteoblasts and osteoclasts. Recently, oxidative stress is believed to play an important role in osteoporosis pathogenesis. Oxidative stress is commonly considered as the consequence of an imbalance between pro and antioxidants species, which results in damage in the affected tissue. Malondialdehyde (MDA) is frequently used as a biomarker of oxidative stress in many health problems since MDA is produced at high levels during lipid peroxidation. Meanwhile, glutathione is well known as one of antioxidant which against oxidative stress by preserving its homeostasis in the reduced form of glutathione sulfhydryl (GSH) and the oxidized form of glutathione disulphide (GSSG). This study was aimed to determine the association between MDA, GSH/GSSG ratio and bone mineral density (BMD) in postmenopausal women.
Materials and method: We conducted a cross-sectional study in 40 postmenopausal women. MDA and GSH/GSSG ratio were assessed by enzyme-linked immunosorbent assay (ELISA). Bone mineral density (BMD) was obtained from secondary data. The statistical analysis was conducted using Spearman rho's correlation test.
Results: Based on the test, we didn't found significant correlation between MDA and BMD (r=-0.054, *p*=0.741), but we found significant moderate correlation between GSH/GSSG ratio (r=0.436, *p*=0.005) and BMD in postmenopausal women.
Conclusion: There was no correlation between MDA and BMD in postmenopausal women. However, there was significant moderate correlation between GSH/GSSG ratio and BMD in postmenopausal women.
Keywords: MDA, GSH/GSSG ratio, BMD, osteoporosis

DDC 616.853
Sidiartha IGL, Suwarba IGNM, Wati DK, Subanada IB (ediatric Nutrition and Metabolic Disease Division, Department of Child Health, Faculty of Medicine, Universitas Udayana/Sanglah General Hospital, Denpasar, Bali, Indonesia)
The Effect of Carnitine Supplementation on Blood Ammonia Level in Epilepsy Children Treated with Valproic Acid: A Randomized Controlled Trial
Mol Cell Biomed Sci. 2021; 5(1): 18-21
Abstract (English)
Background: Long-term use of valproic acid is associated with a high level of blood ammonia related to carnitine deficiency. This study investigates the effect of carnitine supplementation on blood ammonia levels in children with epilepsy who have been treated with valproic acid for more than six months.
Materials and Methods: This was a randomized, double-blind, placebo-controlled trial study where children with epilepsy who were treated with valproic acid were randomly allocated to the carnitine supplementation and control group. All children were followed for month, and then measured for blood ammonia level. Blood ammonia levels of both groups were compared using an Independent t-test with a significant of $p<0.05$.
Results: Total of 32 children with epilepsy were enrolled as subjects in this study, with 16 children in carnitine group, and 16 children in control group. Among the subjects, 50% were male and 50% were female, with a mean age of 6.5 years old. The average duration of epilepsy in the carnitine and control group were 41.7 months and 36.9 months, respectively ($p=0.419$). The duration of valproic acid therapy in the carnitine and control group were 33.1 months and 27.6 months, respectively ($p=0.483$). The level of blood ammonia in carnitine and control group were 44.6 mg/dL and 81.4 mg/dL, respectively ($p=0.007$).
Conclusion: The level of blood ammonia in a carnitine group was significantly lower than in a control group. It is recommended to give carnitine supplementation in epileptic children treating with long-term valproic acid.
Keywords: ammonia, carnitine, epilepsy, seizure, valproic acid

DDC 616.81
Pinzon R, Wijaya VO, Paramitha D (Faculty of Medicine, Duta Wacana Christian University, Yogyakarta, Indonesia)
Vitamin D Status and Cognitive Performance of Post Stroke Patients
Mol Cell Biomed Sci. 2021; 5(1): 22-6

Molecular and Cellular Biomedical Sciences

Abstract (English)
Background: The prevalence of post-stroke cognitive impairment (PSCI) ranges from 20-80%. Some studies found that vitamin D deficiency was common in stroke patients, yet the relationship with cognitive performance remains unclear. The study aimed to investigate the relationship between levels of vitamin D and cognitive performance in post-stroke patients.
Materials and Methods: This was a cross-sectional study with 20 post-ischemic stroke patients. Vitamin D levels were measured using enzyme-linked fluorescent assay (ELFA). The cognitive performance was assessed by computerized mini-mental state examination (MMSE) and clock drawing test (CDT). The relationship between vitamin D levels and cognitive tests were performed using paired T-test.
Results: Vitamin D insufficiency (<30 ng/mL) was experienced by all of the study subjects (100%), with the mean±SD of vitamin D level was 13.75±4.06 ng/mL. More than 70% subjects had cognitive impairment. Based on MMSE, patients with cognitive impairment had lower vitamin D levels, compared with those patients with normal cognition (13±4.38 *vs.* 16±2.44 ng/mL, $p<0.001$). In CDT examination, patients with cognitive impairment had slightly higher vitamin D levels, compared with those patients with normal cognition (13.93±4.25 *vs.* 13.33±3.93 ng/mL, $p<0.001$).
Conclusion: The insufficiency of vitamin D on post-ischemic stroke patients appears to generate a bigger chance of PSCI occurrence. Physicians should be aware of vitamin D status of post-stroke patients, especially in the older population.
Keywords: vitamin D levels, post-stroke cognitive impairment, risk factors

DDC 615.321
Abiola TS, David OO, Olatunde FE (Department of Biochemistry, Bowen University of Iwo, Nigeria)
Effect of Tannin-Rich Extract of *Chasmanthera dependens* on Piroxicam-induced Liver Damage in Male Wistar Rats
Mol Cell Biomed Sci. 2021; 5(1): 27-36
Abstract (English)
Background: Piroxicam is one of the nonsteroidal anti-inflammatory drugs used as antipyretic, analgesic and anti-inflammatory drug often used for the relief of nonspecific fever condition and in arthritis. This study investigated the protective potential of tannin-rich extract of *Chasmanthera dependens* (TRECDS) against piroxicam-induced hepatotoxicity in male Wistar rats.
Materials and Methods: Thirty two rats were divided into four groups. Group 1 received normal saline and served as the control group, group 2 were given 20 mg/kg piroxicam only, while groups 3 and 4 were given 20 mg/kg piroxicam with the addition of 200 and 400 mg/kg of tannin-rich extract of *Chasmanthera dependens*, respectively. All rats were treated orally once daily for ten days.
Results: Administration of piroxicam caused liver atrophy demonstrated by significant rise in serum alanine aminotransferase (ALT), alkaline phosphatase (ALP), aspartate aminotransferase (AST), gamma-glutamyl transferase (GGT), glucose-6-phosphate dehydrogenase (G6PDH) levels of albumin (ALB), bilirubin (BIL), total cholesterol (TCHOL), triglyceride (TRIGS) and low-density lipoprotein (LDL). Piroxicam also decreased high-density lipoprotein (HDL) level, enzymatic and nonenzymatic antioxidant levels significantly ($p>0.05$) with attendant increase in oxidative stress indices in the liver of rats compared with control group. Histological assessment reveled severe damaged to the liver of rats. However, co-administration with TRECDS reversed these observations as evidenced in the histological results.
Conclusion: The findings of this study showed that exposure of rats to piroxicam provoked damage to the liver via oxidative damage and TRECDS has the potential of ameliorating the damage.
Keywords: hepatotoxicity, piroxicam, *Chasmanthera dependens*, oxidative stress

DDC 618.88
Serudji J, Irawati N, Mose JC, Ali H, Yusrawati (Fetomaternal Division, Department of Obstetrics and Gynecology, Faculty of Medicine, Universitas Andalas, Padang, Indonesia)
Elevated Serum Reactive Oxygen Species Level Predicts Early Abortion
Mol Cell Biomed Sci. 2021; 5(1): 37-40
Abstract (English)
Background: Impaired trophoblast invasion is associated with early abortion. The calorie needed for the trophoblast cell (TC) invasion is mainly met by adenosine triphosphate (ATP) produced in the mitochondria. Reactive oxygen species (ROS), byproduct of ATP synthesis, plays an important role in cellular physiology, but a high level of ROS may result in deoxyribonucleic acid (DNA) damage or cell dysfunction, thereby impaired TC invasion leading to early abortion. The study aims to determine elevated serum ROS level to predicts early abortion.
Materials and method: This was an observational study with a cross-sectional design. Fifty subjects with gestational age less than 12 weeks, consist of 25 early abortions and 25 normal pregnancies subjects, were included in this study. Clinical examination and diagnosis

Molecular and Cellular Biomedical Sciences

are carried out in 2 Hospitals and 5 Public Health Centers in Padang. Examination of ROS levels was carried out by enzyme-linked immunosorbent assay (ELISA) in the Biomedical Laboratory, Faculty of Medicine, Universitas Andalas. The Mann-Whitney test was used to analyze the difference of serum ROS levels, with a significance level of 0.05.
Results: The subjects of the two study groups were equivalent in terms of age, gestational age, and gravidity (p=0.051, p=0.453, and p=1.000). The median ROS levels were found to be 1.36 (1.02-26.30) ng/mL in the early abortion and 1.20 (0.43-2.75) ng/mL in the normal pregnancy (p=0.003).
Conclusion: There is a significant difference between ROS levels in early abortion and normal pregnancy.
Keywords: ROS, early abortion, normal pregnancy

Volume 5, Number 1, 2021 Print ISSN: 2527-4384, Online ISSN: 2527-3442

Molecular and Cellular Biomedical Sciences

Thank to Reviewers

We thank the following reviewers for their contributions in this number:

Anna Meiliana
Deviana Soraya Riu
Elmy Saniathi
I Gusti Ayu Trisna Windiani
Miftakh Nur Rahman
Nunuk Aries Nurulita
Purwanto
Rina Triana
Rivan Danuaji
Ruth Maduma
Trilis Yulianti
Tutik Harjianti
Wira Gotera

Print ISSN: 2527-4384

Online ISSN: 2527-3442

Molecular and Cellular Biomedical Sciences

Volume 5, Number 1, March 2021

Information of this journal can be accessed at: https://CellBioPharm.com/ojs/index.php/MCBS