

7th International Congress on
Biochemistry and Molecular Biology

Scientific Sessions

April 28 - 29, 2023 |
London, UK



Using a qualitative test to assess COVID-19 severity and long-term persistence of anti-SARS-CoV-2 nucleocapsid IgG antibodies

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Anti-SARS-CoV-2 nucleocapsid IgG antibodies (anti-N IgG) are important for activating antibody-dependent cellular cytotoxicity. Implementing the N-protein in future vaccines could be beneficial. Anti-N IgG sample/cut-off indices (S/C) were measured by using the SARS-CoV-2 IgG qualitative test on the Abbott Architect ci4100. The influence of multiple factors on anti-N IgG serostatus was evaluated including gender, age, disease duration, disease severity, smoking status and vaccination status. Gender did not affect anti-N IgG S/C values ($p=0.513$) and they correlated positively with age ($r=0.07$; $p=0.321$). There was a negative correlation between anti-N S/C IgG and disease duration ($r=-0.02$; $p=0.751$) and between anti-N S/C and months post-recovery ($r=-0.13$; $p=0.101$). Smokers had a significant negative correlation between anti-N S/C IgG and months post-recovery ($r=-0.39$; $p=0.003$). Participants with severe disease had the highest mean (5.29 S/C \pm 3.33 , 95% CI: 3.69-6.89, IQR=5.8), followed by moderate (5.17 S/C \pm 2.77 , 95% CI: 4.43-5.91, IQR=4.5) and mild disease (4.95 S/C \pm 2.78 , 95% CI: 4.06-5.83, IQR=3.9). Asymptomatic participants had the lowest mean (4.86 S/C \pm 2.67 , 95% CI: 4.05-5.66, IQR=3.5). No significant difference was measured between vaccinated and unvaccinated participants

($p=0.091$), since vaccines contain spike protein only. A significant difference was measured when comparing disease severity and different vaccines ($\chi^2=48.567$, $p=0.002$). BNT162b2 was more prevalent in asymptomatic and mild forms of disease with an anti-N S/C mean (2.04 S/C \pm 2.76 , 95% CI: 1.57-2.51, IQR=3.4), whereas BIBBP-CorV was more prevalent in severe disease resulting in a higher mean (3.36 S/C \pm 3.31 , 95% CI: 2.27-4.45, IQR=4.3). Disease severity can be predicted by using a qualitative test. Non-smokers sustained seropositivity longer than smokers. Participants vaccinated with BNT162b2 had lower anti-N IgG S/C values possibly due to more robust protection compared to other vaccines.

Biography

Suad Meshikj graduated from the Faculty of Medicine at University Ss. Cyril and Methodius Skopje in 2018 at the age of 24. Currently he specializes in [medical biochemistry](#) at the Institute for Medical and Experimental Biochemistry, Skopje and works in NIKOB Lab, a private laboratory in Skopje.

Effect of selected preservatives on nutritional indices of *Phaseolus lunatus* (lima beans)

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The Quest for food sustainability as well as maintaining the nutritional value of food crops and products over the years have necessitated the use of both natural and artificial preservatives. This research was undertaken to investigate the effect of selected preservatives on the nutritive indices of *Phaseolus lunatus* (Lima Beans). The *P. lunatus* used for this research was obtained in bags. It was prepared and sent for analysis in laboratory prior to storage with selected preservatives. The selected preservatives were gotten and prepared for the preservation following the standard protocol. The lima beans were divided into airtight vessels and label it group A to D which were preserved with selected preservatives, DDVP (sniper), birds eye pepper, Wood Ash respectively while the group D serving as control and were left untreated with any preservative. The beans mixed with preservative were left to stay for 6 months. Standard methods were used to assess the effect of the preservatives on the proximate constituents, mineral concentrations and amino acid contents respectively of the preserved groups compared with the control. The results showed that Lima beans is rich in essential amino acids with Lysine showing the highest concentration among the essential amino acid for the pepper preserved and was noticed to be same across all the essential amino acids while wood ash preserved group show dis-improvement in amino acid concentration. The observed improvements in some parameters showed that the chemical in some groups are more effective at some aspect while natural preservatives at some other points. Its effectiveness for a longer shelf life and stop or delay the growth of bacteria, suppress the reaction when food comes in contact with oxygen or heat, they also prevent the loss of some essential amino-acids and some vitamins enhance the food flavors and colors. The results of this study showed that some of the selected preservatives used on the lima beans suggested that it could improve the shelf life and improve nutritive values.

Conclusion:

Additives and preservatives for a very long time have been of great importance to farmers and food processing industries. Natural methods of preservation usually aim to exclude air, moisture and microorganisms, or to provide environments in which organisms that may result to spoilage cannot survive. In recent time, several inorganic chemicals are used as food preservatives. They are important as it helps to increase shelf life of crops and stop or

delay the growth of bacteria, hinders the reaction when food comes in contact with air, moisture or heat, they also prevent the loss of some essential nutrients and as well enhance the food flavours and colours. It has been reported that chemicals which are used as preservatives have some possible influence to the nutritive indices of foods. Even though natural preservatives have been used over the years, artificially produced chemical like sniper and aluminum phosphide were comparatively studied and compared some of the natural preservatives pepper and wood ash. It was observed that the chemical more effective at some aspect while natural preservatives at some other points.

Keywords:

Nutrition, Preservatives, Preservation, Lima bean, Legumes, Proximate, Minerals.

Biography

Chibuzo Carole Nweze PhD is an Associate Professor of [Biochemistry](#) with [Nasarawa State University](#), Keffi, Nigeria. Her area of interest is in Food, [Nutrition](#), Phyto and Industrial Biochemistry. She has numerous publications in outstanding local and International journals. Her research expertise is majorly on Nutraceuticals and Functional foods where she has carried out studies on many indigenous flora for health and diseases management. She has presented reputable trendy papers in many conferences, Workshops and Seminars globally. She has supervised many undergraduate and postgraduate students in mind blowing current issues in Biochemistry research. She is a professional member of many international academic bodies.

Relation between urine nitrite and contact lens used

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Objective of recent study was to represent relationship between urine nitrite and contact lens. Participant involved in this study were students of BZU, Multan, Pakistan with age of 19-22. 80 students were involved in this study. Urine nitrite caused due to bacterial infection in urinary tract. It concluded from present study that only 4 female showed positive results and 2 of them were using contact lenses. No men showed positive results and they were not using contact lens.

Biography

Muhammad Jahangir Shafi is from Pakistan. He did MSc [Biotechnology](#) from Institute of Molecular Biology and

Biotechnology which is one of the prestigious research institute of [Bahauddin Zakariya University](#), Multan, Pakistan. Where he had learned a lot and also writes research paper and also published them. After it he was doing MS from one of the most prestigious university on the base of research The Islamia University of Bahawalpur, Pakistan. Here he was doing and developing many advanced skills of biotechnology, molecular biology and bioinformatics like Crisper Cas, Gene Therapy, protein engineering, molecular docking protein docking and many more. He wants to bring imaginative new approaches to solving biological problems and work collaboratively to advance knowledge and makes meaningful contribution to our world.

β -estradiol protects against Cu-ascorbate induced oxidative damage of isolated hepatic mitochondria with no possibility of reversal of changes: An in vitro study

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Introduction:

Estra 1,3,5 triene-3,17 β -diol (β -E) is a chemical form of estrogen that mediates the regulation of the activity of female reproductive system. The antioxidant potential of this compound has recently been investigated. We have identified this compound while analysing ethyl acetate partitioned fraction of aqueous bark extract of Terminalia arjuna. In our present work, we attempted to explore the antioxidant potential of aqueous solution of β -E in a chemically defined system.

Procedure:

Isolated goat liver mitochondria were co and post-incubated with increasing concentrations of β -E in presence and absence of Cu-ascorbate at pH 7.4 and 37°C and also in a time-dependent manner.

Results:

Mitochondrial membrane lipid peroxidation, protein carbonylation and reduced glutathione content were found to be significantly altered following incubation with Cu-ascorbate system indicating towards the generation of reactive oxygen species. Decreased NADH autofluorescence, reduced activities of Krebs cycle enzymes, electron transport chain linked enzymes, mitochondrial DNA damage and ATP content confirmed generation of oxidative stress which was further supported by increased activities of Mn-superoxide dismutase and prooxidant enzyme xanthine oxidase. All these parameters were protected from being altered dose-

dependently when increasing concentrations of β -E were co-incubated with liver mitochondria. However, these alterations could not be reversed following post-incubation of the system with β -E. Finally, the results of isothermal titration calorimetry revealed that β -E can prevent the binding of Cu and ascorbic acid with cytochrome c.

Conclusion:

β -E possesses not only a significant antioxidant potential, but also appears to possess binding capability with mitochondrial redox regulating electron carrier proteins to prevent oxidative stress induced mitochondrial dysfunction with no ability to reverse the changes.

Biography

Arnab Kumar Ghosh is presently assistant professor of Department of Applied Biology, School of Biological Science & Technology, Maulana Abul Kalam Azad University of Technology, Kolkata, India. He was former Assistant Professor of Dept. of Biochemistry of Adamas University, Kolkata and Senior Research Associate and Research Associate under CSIR-India at Department of Physiology, University of Calcutta under the supervision of Dr. Debasish Bandyopadhyay, Professor of the same department. He has done PhD at the same laboratory after completion of M.Sc. in Biochemistry at University of Calcutta. He is the life member of Society of Biological Chemists (India) and Indian Science Congress Association (New Biology Section).

April 28 - 29, 2023

London, UK

Journal of Applied Microbiology and Biochemistry

ISSN: 2576-1412 | Volume: 07

Meta-Analysis on efficacy and safety of DI-3-n-butylphthalide as adjunctive therapy for dementia

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Background:

Our previous study has demonstrated that DI-3-n-Butylphthalide (NBP) meliorates cognitive impairments and selectively attenuates phosphorylated tau accumulation by inhibiting neuroinflammation in animal experiments. And, neuroinflammation plays a crucial role in the development of dementia. NBP as a brain-protective drug has shown a multitarget neuroprotective function and used for the adjunctive treatment of vascular dementia. However, the clinical effect of butylphthalide as an adjuvant treatment has not been comprehensively evaluated. Therefore, we evaluated the clinical efficacy and safety of BNP in the treatment of cognitive dysfunction, such as vascular dementia, through meta-analysis. Methods: In this systematic review, we searched 8 databases (Cochrane Library, Embase, PubMed, Sino-Med, Web of Science, China National Knowledge Infrastructure (CNKI), China Science and Technology Journal Database (VIP), and WanFang data) to obtain qualified randomized controlled trials (RCTs) from their inception to December 2022. And the required data of included studies will be collected. Cochrane risk of bias assessment tool was used to evaluate the quality of studies. Data analysis was performed using ReviewManager 5.4.1. Subgroup analysis and sensitivity analysis will also be performed. Results: Meta-analysis results showed that compared with the control group, the MMSE score and ADL score of BNP had statistically significant differences, and there was no statistically significant difference in the occurrence of adverse reactions. All studies had no serious adverse reactions. Conclusion: BNP can improve the scores of MMSE and ADL in patients with vascular dementia, and has good security.

Recent Publications

1. Chen X, He JL, Liu XT, et al. DI-3-n-butylphthalide mitigates stress-induced cognitive deficits in mice through inhibition of NLRP3-Mediated neuroinflammation. *Neurobiol Stress* 2022;20:100486.

2. Arranz AM, De Strooper B. The role of astroglia in Alzheimer's disease: pathophysiology and clinical implications. *Lancet Neurol* 2019;18:406-414.

3. Solé-Guardia G, Custers E, de Lange A, et al. Association between hypertension and neurovascular inflammation in both normal-appearing white matter and white matter hyperintensities. *Acta Neuropathol Commun* 2023;11:2.

4. Fan X, Shen W, Wang L, Zhang Y. Efficacy and Safety of DL-3-n-Butylphthalide in the Treatment of Poststroke Cognitive Impairment: A Systematic Review and Meta-Analysis. *Front Pharmacol* 2021;12:810297.

5. He Z, Zhou Y, Lin L, et al. DI-3-n-butylphthalide attenuates acute inflammatory activation in rats with spinal cord injury by inhibiting microglial TLR4/NF-κB signalling. *J Cell Mol Med* 2017;21:3010-3022.

Biography

Xue-Ting Liu is in Department of Neurology, Affiliated Zhong Da Hospital, School of Medicine, Southeast University, China. He has published more than 25 papers in reputed journals and has been serving as an editorial board member of repute. His research interest are Chronic sleep deprivation; Cognitive impairment; Intestinal dysbiosis; Intestinal/blood-brain barrier; Microbiota-gut-brain axis; NLRP3 inflammasome.

Received: 19-01-2023 | Accepted: 21-01-2023 | Published: 06-05-2023

April 28 - 29, 2023

London, UK

Journal of Applied Microbiology and Biochemistry

ISSN: 2576-1412 | Volume: 07

Comparing the impact of SGLT2 inhibitors and GLP-1 agonists on lipid profile among the patients with type 2 diabetes

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Pushen Capsule is a traditional Chinese medicines compound functioning as 'stimulating blood circulation to remove blood stasis', which widely used to treat hyperlipidemia. Recent clinical research showed that Pushen Capsule ameliorated cognitive function in patients with vascular mild cognitive impairment.

Aim of the Study:

Explore the potential mechanism of Pushen Capsule in Vascular dementia (VaD) using network pharmacology analysis and experimental verification.

Materials and Methods:

Active ingredients and its related targets of Pushen Capsule, and VaD-related targets were searched from the public databases. Core targets, potential functions and mechanisms of Pushen Capsule on VaD were predicted by protein-protein interaction (PPI), Gene Ontology (GO) and Kyoto Encyclopedia of Genes and Genomes (KEGG) analysis. In vivo experiments were conducted to demonstrate the potential mechanisms of Pushen Capsule in treatment of VaD.

Results:

155 active ingredients and its 273 related targets of Pushen Capsule, 1035 VaD-related targets were selected from the public databases. 147 common targets of Pushen Capsule against VaD were obtained. The PPI network, GO and KEGG enrichment analysis revealed some of core targets and signaling pathways are related to inflammation. Experiments results showed that Pushen

Capsule treatment largely alleviated hippocampal glial activation, accelerated the polarization of activated microglia from M1 to M2 phenotype and reduced associated inflammatory factors expression to protect against VaD-induced neuronal loss, synaptic protein reduction and cognition defects in a dose-dependent manner. Moreover, Pushen Capsule reduced mRNA expression of NF- κ B p65, and STAT1.

Conclusion:

Our study demonstrates that Pushen Capsule alleviates hippocampal neuroinflammation to protecting against VaD-induced cognitive impairment in a dosedependent manner. The neuroprotective effect of Pushen capsule on VaD might be regulated by NF- κ B, and JAK-STAT pathway.

Keywords:

Pushen Capsule, Vascular dementia, network pharmacology, experimental verification, neuroinflammation

Biography

Yun Liu is in Department of Neurology, Affiliated ZhongDa Hospital, School of Medicine, Southeast University, China. He has published more than 25 papers in reputed journals and has been serving as an editorial board member of reputed. His research interest are [elderly epilepsy](#), [glycolipid metabolic](#), logistic regression, AED, Chronic sleep deprivation; Cognitive impairment; Intestinal dysbiosis; Intestinal/blood-brain barrier; [Microbiota-gut-brain axis](#).

Received: 25-02-2023 | Accepted: 27-02-2023 | Published: 06-05-2023