

Review Reminder (20-0508 - Mediterranean Journal of Nutrition and Metabolism)

Dari: mailer@mstracker.com

Kepada: kgs.ahmadi@yahoo.com

Tanggal: Minggu, 1 November 2020 pukul 12.04 WIB

Dear Dr. Ahmadi,

Recently I invited you to review manuscript 20-0508, entitled "Dietary n-9, n-6 and n-3 fatty acids modulate the oxidative stress in brain and liver of mice. Effect of trans fatty acids supplementation."

I have yet to hear from you and would appreciate your response.

A link to accept or decline the manuscript, as well as links to obtain the manuscript and submit your review appear near the bottom of this message.

Thank you for your time.

Sincerely,

Maurizio Battino
Mediterranean Journal of Nutrition and Metabolism

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ABSTRACT:

BACKGROUND: Arachidonic (20:4n-6) and docosahexaenoic (22:6n-3) acids interaction affects brain structure and function.

Unsaturated fatty acids (UFAs) generate oxygenated lipid-derived eicosanoids which modulate the inflammatory response. The presence of trans fatty acids (TFA) in neuronal membranes can favor to generation of pro-oxidant metabolites. **OBJECTIVE:** This study evaluated the effect of TFA supplementation in diets containing different proportions of UFAs, on the oxidative stress (OS) and inflammatory response in brain and liver.

METHODS: CF1 mice were fed diets (16 weeks) with olive (O), corn (C) or rapeseed (R) oils. OS and gene expression of some key hepatic and brain enzymes involved in OS regulation were assessed.

RESULTS: In brain and liver, lipoperoxidation was increased and catalase activity was decreased in C. In brain, glutathione was diminished by supplementation with TFA in all diets and histological sections showed lymphocytes in O and C. In liver, decreased amount of lipid vacuoles and increased of cyclooxygenase-1 (COX-1) and PPAR γ mRNA levels were observed

in R and Rt. IL-1b and IL-6 in serum were augmented in O and Ot.

CONCLUSIONS: Rapeseed oil could have protective effects on the development of OS and inflammation, while TFA supplementation did not showed marked effects on these parameters.

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Review Reminder (20-0508 - Mediterranean Journal of Nutrition and Metabolism)

Dari: mailer@mstracker.com

Kepada: kgs.ahmadi@yahoo.com

Tanggal: Minggu, 22 November 2020 pukul 12.04 WIB

Dear Dr. Ahmadi,

I am writing today in regard to manuscript 20-0508, entitled "Dietary n-9, n-6 and n-3 fatty acids modulate the oxidative stress in brain and liver of mice. Effect of trans fatty acids supplementation," for which you were recently solicited to provide a review.

A decision regarding this manuscript is pending receipt of your input. Timely return of this review would be most appreciated. If you have not already done so, please agree (or decline) to review this manuscript by following the appropriate link below.

A link to the manuscript file and an address at which to submit your review also appear near the bottom of this message.

Thank you for your time.

Sincerely,

Maurizio Battino
Mediterranean Journal of Nutrition and Metabolism

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CONCLUSIONS: Rapeseed oil could have protective effects on the development of OS and inflammation, while TFA supplementation did not showed marked effects on these parameters.

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Review of Manuscript 20-0508 (Mediterranean Journal of Nutrition and Metabolism)

Dari: m.a.battino@univpm.it

Kepada: kgs.ahmadi@yahoo.com

Tanggal: Senin, 23 November 2020 pukul 15.01 WIB

Dear Dr. Ahmadi,

A decision has been reached regarding manuscript 20-0508, entitled "Dietary n-9, n-6 and n-3 fatty acids modulate the oxidative stress in brain and liver of mice. Effect of trans fatty acids supplementation."

The authors have been notified that the paper may be suitable for publication if certain revisions are made. Please visit the Web address below to view the decision letter sent to the authors. Doing so also serves to confirm receipt of this message.

I appreciate your contribution to the peer review process, and look forward to viewing the products of your scholarship in the future.

Sincerely,

Maurizio Battino
Mediterranean Journal of Nutrition and Metabolism

To view the reviews and decision letter, please visit:
<https://mstracker.com/reviews.php?id=158441&rid=178388>

Mediterranean Journal of Nutrition and Metabolism

Reviews of 20-0508

"Dietary n-9, n-6 and n-3 fatty acids modulate the oxidative stress in brain and liver of mice. Effect of trans fatty acids supplementation"

Decision Letter

Please find below a link to the decision and reviewers' comments regarding your submission to Mediterranean Journal of Nutrition and Metabolism.

Major revision is required and your manuscript will be re-reviewed.

Please revise your manuscript according to ALL the reviewers' suggestions and provide a point-by-point response to the reviews.

Moreover, please, a careful check for English use and grammar is welcome, possibly by a mother-tongue professional.

Your revised manuscript should be submitted to our online submission system (<https://mstracker.com/submit1.php>).

Be sure the manuscript is formatted per our instructions to authors.

When resubmitting please mention the reference number in the cover letter.

Sincerely,

Maurizio Battino
Mediterranean Journal of Nutrition and Metabolism

Reviewer 2

I think this manuscript suitable for publish in this journal

Check the ancillary file please

Ancillary file: [view](#)

Reviewer 5

The present manuscript entitled "Dietary n-9, n-6 and n-3 fatty acids modulate the oxidative stress in brain and liver of mice. Effect of trans fatty acids supplementation" described a research focused on evaluating the possible protective role of different dietary fats rich in unsaturated fatty acids of different families against the harmful effect of trans-fatty acids in brain in relation to oxidative stress and inflammatory response. However, although authors explain the interest of test the effect of fats rich in different amount of n-6 and n-3 PUFA, the use of olive oil that it is rich in MUFA does not seem clearly justified. Moreover discussion of findings in animals fed olive oil-rich diets is very poor. One of the main limitations of the study is that fatty acid of the phospholipids from liver and brains was not evaluated and it would be necessary membrane composition modulation by dietary fats for the mentioned affect, specially taken into account the reduced duration of the study. This aspect should be at least discussed with additional references supporting that nutritional interventions with dietary lipids of similar duration are able to modify circulating

parameters or biological membranes in relation to this issue. Moreover, despite authors explained that they investigated hepatic parameters considering that dietary fatty acids are bioconverted in this tissue and then PUFA are transported to the brain, the relevance of the findings in liver or possible link with findings in brain are not explained taken into account prior statement. Similarly, some differences found between the two tissues in relation to lipid effects have not be discussed. In addition, I have other issue that I think that should be improved before publication.

Major revisions:

- I have several questions regarding the section "Extraction and analysis of RNA and quantification by RT-PCR":
 - Is it possible to know the amount in weight units of cDNA added to QT-PCR reaction mixture ?
 - How many technical replicates were used per sample in QT-PCR reaction?
 - How was the standard curve to test adequate efficiency of QT-PCR reactions constructed?
 - It it possible to justify the use of B-actin as housekeeper gene for the analyzed tissues in similar conditions, at least with one or several references, in discussion or material and methods section?
- Concerning statistical analysis, please specify if the requirements or assumptions of statistical tests used were previously confirmed.
- Authors explain that the sample size was calculated taking into account a minimum test power of 0.08 ($\alpha=0.05$), and a maximum difference between the response of each variable of the control group with respect to the average of the differences with the experimental groups (Cohen, 1988), but what variable finally was the most relevant for sample size determination?
- Authors indicated that "CF1 mice were fed diets (16 weeks) with olive (O), corn (C) or rapeseed (R) oils", please specify olive oil type used since it has been demonstrated a very different effect for health (see PMID: 20303720; PMID: 10694051; PMID: 10416049; PMID: 29141573). This could be also taken into account to discuss the results of previous studies reporting benefits for health of monounsaturated fatty acids-rich foods in comparison with other rich in n-6 or n-3 PUFA (see PMID: 16720718, PMID: 30953048, PMID: 29141573; PMID: 29144994; PMID: 11892994). In relation to this issue, it would be very interesting to know the fatty acid profile of dietary lipid sources used.
- Please subdivide Results section into subsection similar to those used in material and methods to facilitate reading of the manuscript.
- In table 1, Is it possible to add total values of n-6 PUFA and n-3 PUFA?
- Are there previous studies, where expressions of the analyzed genes were modulated? Please, take this into account for discussion
- In agreement with these results, Pase et al. [16] found that supplementation with fish oil, was associated with lower oxidative damage. Where? There are more studies on fish oil effect on inflammation and redox status.
- Please explain what reefers "In another set of animals" in material and methods

Minor revisions:

- In introduction authors described implications of the peroxisome proliferator-activated receptor gamma (PPAR γ), but the relationship with the dietary fats has not been adequately explained.
- When it is stated that "Both fatty acids (FA) are important for biochemical integrity of the brain, playing different roles in the modulation of central nervous system [2,5], please specify what is modulated
- When it is indicated that "Total liver and brain glutathione (GSH) levels (expressed as $\mu\text{mol/g}$ of tissue), were measured according to the method reported by Ellman & Lysko [32]" please

specify if it has been measured reduced glutathione or total glutathione.

-In results section it is indicated that "The levels of MDA, CAT and GSH in brain and liver are shown in Table 3", but parameters measured in relation to antioxidant enzymes was activity

-Author suggest that "regarding GSH levels, the variation of this parameter can be related as a signal of oxidative damage or as protection against its production". Explain this better and add references if possible.

- In discussion, authors said "The type of dietary fat (O, C or R) more than the TFA supplementation produced the greatest changes" changes respect than...?

-It seems that some information is lost between the two sentences present in this fragment "Our present results show that serum interleukin were augmented after TFA supplementation depending on the type of dietary fatty acid. IL-1b and IL-6 were increased in O vs. C and R diets" and also in the following fragment "Their respective shorter-chain polyunsaturated fatty acid (PUFA) precursors which cannot be synthesized de novo in vertebrate tissues, linoleic acid (LA, 18:2n-6) and γ -linolenic acid (ALA, 18:3n-3) are nutritionally essential [4]."

- In sentence "OS and gene expression of some key hepatic and brain enzymes involved in OS regulation were assessed" OS regulation does not seem a correct term since Oxidative stress is not a process.

-Please review this sentence "Serum IL-1b and IL-6 levels were greater in animals fed olive oil (O and Ot) than in those fed C and R diet (IL-1b) and C and R oils (IL-6)"

-To quantify the liver and brain lipid peroxidation (LPO), malondialdehyde (MDA) was measured using the thiobarbituric acid method reported by Ohkawa et al. [31]. LPO was expressed as nmol MDA/g of tissue.

-When results of QRT-PCR are described, I think that is not necessary to use the term "relative" prior to "gene expression", although it seems adequate to use the term "relative mRNA levels".

-These sentences in Discussion are not clear "Only O diet supplemented with TFA decreased this parameter" "There was no change in PPAR γ relative gene expressions between different diets" "In a previous study, we have observed that the retention of TFA in brain of mice fed O, C and R diets supplemented with TFA, was 0.56-0.96% and the lowest percentage was observed in animals fed Rt diet [17]" please review them.

-In sentence "Thus, we could hypothesize that a minimum incorporation of TFA in brain neuronal membranes may be sufficient to cause oxidative stress and to produce inflammation, and these effects could be modulated by the type of unsaturated FA in the diet" I think that it could be better "to promote inflammation" or "to promote a inflammatory response" instead of "to produce inflammation"

-In the sentence "This study evaluated the effect of TFA supplementation in diets containing different proportions of UFAs, on the oxidative stress (OS) and inflammatory response in brain and liver", I think "on the oxidative stress (OS)" is not adequately expressed.

-In the sentence "It is possible that the decreased observed after TFA supplementation will occur as a preventive effect of LPO induced by these isomers". What isomer are?

- I don't understand the relevance of the sentence "The biochemical integrity of the brain and the nervous system modulation is affected by the n-6/n-3 ratio [2,5]" in its current position



Mediterranean Journal of Nutrition and Metabolism

COUNTRY

Netherlands



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Media Ranking in
Netherlands

SUBJECT AREA AND CATEGORY

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Nutrition and Dietetics

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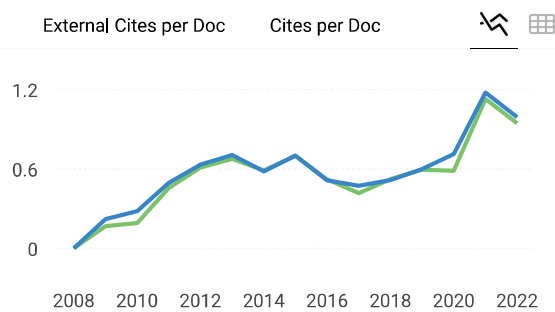
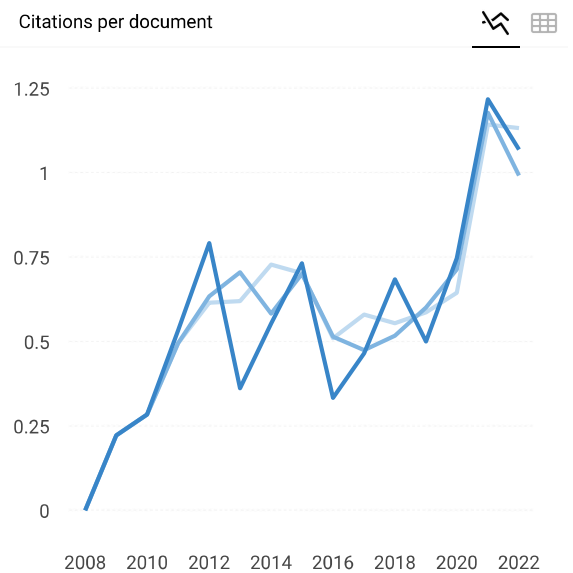
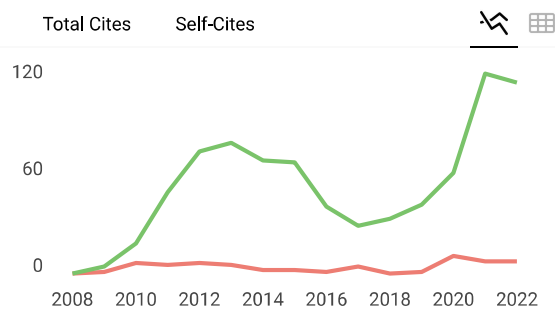
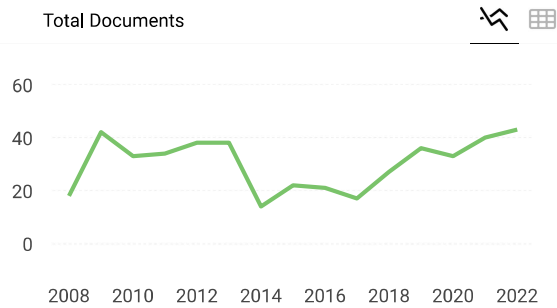
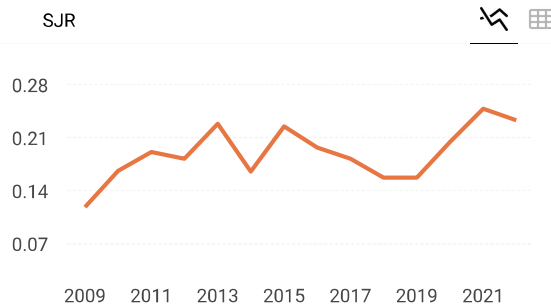
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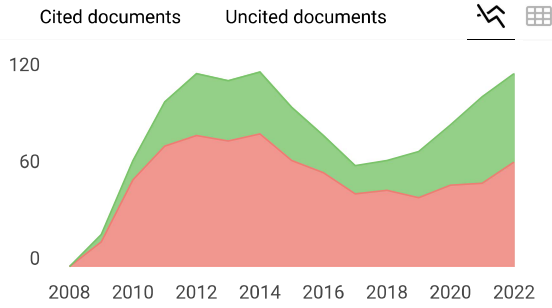
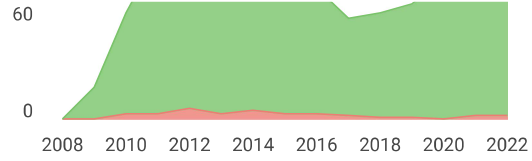
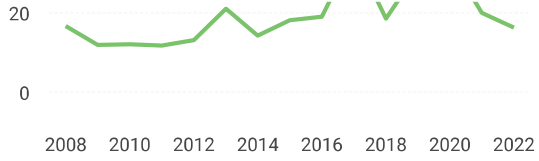
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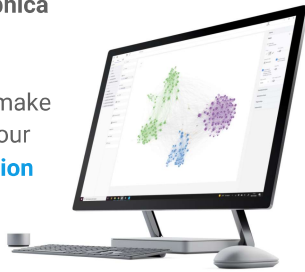
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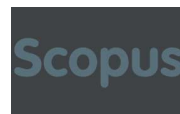
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