

Manuscript Title

Variation in Selected Chemical Element Contents Associated with Malignant Tumors of Human Thyroid Gland

Author(s)

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Summary

The manuscript was received on January 02, 2018 and was peer reviewed by four reviewers and an editor.

The initial recommendation of Major Revision was made on February 21, 2018.

The first revision was submitted on March 05, 2018 and was re-evaluated by the editor.

The manuscript was accepted for publication on March 23, 2018.

Peer Review Comments

Peer Reviewer 1:

I think that the article can be Accepted with minor revision.

The topic of the paper is under the scope of the Journal.

This paper in this Journal allows introducing the Neutron Nuclear Activation Analysis as a technique at the service of oncology, written in a way that it is readable and easy to understand.

It is correct from the analytical point of view.

Some remarks:

1. the references are many but there are a lot of the author: this could be good because a reader has all the production under control but it could important to report the last publications on this argument.

2. It is not reported the Nuclear Reactor used for the activation.

For the other points reported in the "Reviewer Checklist": from my point of view are all OK.

Peer Reviewer 2:

Submitted comments as an attachment (declined to publish comments)

Peer Reviewer 3:

Reviewers can use the below checklist to evaluate the manuscript on different grounds, besides their usual review. All the checks are not mandatory; reviewers are free to use it in any form in their review.

Note: Please remove all information from your review based on which you could be identified, for example your name, affiliation, properties, etc.

General: 1—3 Yes

1. Is the topic of the paper under the scope of the journal?
2. Is the topic of research worthy of investigation?
3. Does the work add anything new to the existing literature in the field?

Presentation: 1—3 Yes

1. Does the title correctly reflect the content of the paper?
2. Has the paper been logically constructed?
3. Is the paper readable and easy to understand?
4. Is the paper grammatically correct and free from typos/language errors?
Three typos were found and should be corrected: header: Potassium should be Potassium; paragraph: limitations: "...chemical element (Br, Ca..." should be "...chemical elements (Br, Ca..."; paragraph: limitations: "...was not allow us..." should be "was not allowed..." or even better: "...sample size was relatively small and prevented investigations..."

Abstract:

1. Does the abstract present an accurate synopsis of the paper? **yes**

Introduction and Aims:

1. Is the introduction appropriate to the paper's subject? Yes
2. Is the introduction too long or too short? Appropriate
3. Does the introduction review the literature correctly and adequately? Yes
4. Is the aim of the study clearly stated? Yes

Methods:

1. Is the design of the study consistent with the aim of the study? Yes
2. Is the sample size sufficient to represent the population? Small sample size, however, difficult to increase
3. Is the methodology correctly and adequately described? Yes
4. Are the statistical tests used correctly and clearly described? OK
5. Are there any ethical objections on the study? If yes, has the approval been taken from concerned ethics committee? No objections

Results: all OK

1. Are the results presented in a clear manner (with the use of tables and graphs)?
2. Are the statistical tests used appropriate?

3. Are the results statistically significant?
4. Is the sample size too small to justify and generalize the findings?

Discussion: all OK

1. Does the discussion appropriately explain the results?
2. Does the discussion appropriately compare and discuss the results of the present study with other published results?

Conclusions: all OK

1. Do the conclusions accurately infer the results of the study?
2. Are the conclusion clearly mentioned?
3. Are there any limitations of the study, which might have influenced the study outcomes?

Acknowledgements:

1. Is there any source of funding? No indication
2. Are the sources of funding appropriately acknowledged? --
3. Is there any statement on how each author should've or must've contributed to the paper? There is no information about names of author, their number or their contribution. The paper was sent blinded.
4. Are there any conflicts of interests? unknown

References:

1. Are the references accurate, up to date, and relevant? Yes

General comments:

Any comments specific to the manuscript or any section of manuscript can be included in comments.

The paper describes measurements in thyroid tissue using INAA, which is known to be an absolute determination method, i.e. probably less prone to some errors. In the discussion section, the authors discuss differences in results to other studies and hypothesize that such difference could result from lacks in quality control in cited studies. I would recommend to support such statement by hints whether means of QC were used in cited studies, and if so, which means and how successful they performed e.g. when analyzing reference materials.

The authors also should explain the selection of elements since INAA could provide a wider element spectrum

When looking into table 3 it appears that for control samples the reported values correspond roughly with literature vales for Br, Ca,I, Mg, Mn, however for cancer samples only for I and Mn, while there significant deviation appears specifically now for Br, Ca.

On a first view it is not explained, why there is discrepancy to literature data in cancer samples but none in controls. How do the authors explain this?

The general analytical explanation of missing QC would hold for both sample types but not selecting only one type.

Peer Reviewer 4:

Please, see below my check list reflecting the requested review evaluation of the paper titled:

Chemical elements in thyroid cancer. My recommendation: manuscript need major revision.

General:

- Is the topic of the paper under the scope of the journal?
RE: Yes
- Does the paper conform to the guidelines to authors of the concerned journal?
RE: May be
- Is the topic of research worthy of investigation?
RE: Yes
- Does the work add anything new to the existing literature in the field?
RE: Yes

Presentation:

- Does the title correctly reflect the content of the paper?
RE: It need to be rephrased, like running title
- Has the paper been logically constructed?
RE: I m not sure
- Is the paper readable and easy to understand?
RE: It need to be revised and reconstructed, results need to be elaborated
- Is the paper grammatically correct and free from typos/language errors?
RE: ok

Abstract:

- Does the abstract present an accurate synopsis of the paper?
RE: ok
- Is the abstract in accordance with the journal guidelines?
RE: ok

Introduction and Aims:

- Is the introduction appropriate to the paper's subject?
RE: ok
- Is the introduction too long or too short?
RE: ok
- Does the introduction review the literature correctly and adequately?
RE: ok
- Is the aim of the study clearly stated?
RE: ok

Methods:

- Is the design of the study consistent with the aim of the study?
RE: Yes
- Is the sample size sufficient to represent the population?
RE: Yes

- Is the methodology correctly and adequately described?
RE: Yes but it need complementary methods to support the generated data ...
- Are the statistical tests used correctly and clearly described?
RE: ok
- Are there any ethical objections on the study? If yes, has the approval been taken from concerned ethics committee?

Results:

- Are the results presented in a clear manner (with the use of tables and graphs)?
RE: Nop
- Are the statistical tests used appropriate?
RE: ok
- Are the results statistically significant?
RE: Think so
- Is the sample size too small to justify and generalize the findings?
RE: Nop

Discussion:

- Does the discussion appropriately explain the results?
RE: Not well organized
- Does the discussion appropriately compare and discuss the results of the present study with other published results?
RE: need revision

Conclusions:

- Do the conclusions accurately infer the results of the study?
RE: ok
- Are the conclusion clearly mentioned?
RE: ok
- Are there any limitations of the study, which might have influenced the study outcomes?

Acknowledgements:

- May be missed
- Is there any source of funding?
RE: Nop
- Are the sources of funding appropriately acknowledged? N/A
- Is there any statement on how each author should've or must've contributed to the paper?
RE: Nop
- Are there any conflicts of interests?
RE: ????

References:

- Are the references as per the format given in author guidelines of the journal?
RE: ok
- Are the references accurate, up to date, and relevant?
RE: It looks like