

Peer Review

Review of: "New Insight into Erythema Reduction Induced by Quercetin–Metal Ion Chelates"

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The manuscript presents the synthesis and experimental characterization of two chelates between quercetin (Q), with Fe^{2+} and Cu^{2+} . Complexes were analyzed in 2-propanol at 50% and 80%. The results showed that chelation was carried out in the benzoyl group with Cu^{+2} , while with Fe^{+2} it occurs in the cinnamoyl group, resulting in fluorescence emission at 530 nm and 425 nm, respectively. The authors stated that the anti-inflammatory properties of Q enhance with the chelation with Fe^{+2} and Cu^{+2} , having benefits in skin treatment.

Experimental spectroscopic techniques, including UV-Vis spectroscopy, for excitation and emission, were used to characterize the complexes. The aim is to demonstrate the effect of the metal ions Cu^{+2} and Fe^{+2} on the absorbance and fluorescence properties of Q.

I consider the topic included in the manuscript original and relevant, especially in the area of organic molecules-metal ions chelates and their pharmacological applications. The manuscript contains interesting information; however, the methodology and results should be better presented. The article lacks a methodology section describing the instrumentation and apparatus used. Therefore, the manuscript has some improvements to be published in the Qeios journal. I suggest some changes and improvements as follows:

Revisions:

In Results:

1. Why was 2-propanol selected as a solvent? Were previous solubility tests carried out?
2. Why were the mixtures with 50% and 80% 2-propanol chosen?
3. What were the instruments used in each experimental characterization?

4. What parameters were used in the statistical study?

5. How was the erythema experiment performed?

The information mentioned should be described in one section named Methodology or Materials and Instrumentation.

In Conclusions:

In the Abstract and in the Introduction, the authors mention that “involve chelation offers a better understanding of the mechanism of chelate action,” however, the chelation mechanism is not analyzed in this work. Could the authors give a conclusion or some insights about the chelation mechanism according to the observed results?

Declarations

Potential competing interests: No potential competing interests to declare.