Reviewer’s report

Title: Effects of different extracts of Curcumin on TPC1 papillary thyroid cancer cell line

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Reviewer: Seung-Eon Roh

Reviewer's report:

The authors tested anti-tumor activity of the three curcumin extracts by immunoblotting of anti-proliferative, anti-apoptotic and anti-inflammatory proteins. They suggest the reduction of related protein expression and also showed the survival rate is decreased by MTT assay.

Overall, the background was well-explained and the data interpretation is acceptable from the results presented. However, the experimental progress seems to have limitations that I have some major concerns.

Major points:

- Authors should provide acceptable explanation on how the concentration 25uM for the extracts was determined for the three extracts with TPC1 cell line. The reference 21 from method section didn't use same cell line. Or, they are required to show dose kinetics curve for each extract on two or more protein modulation effects.

- In line with this, they performed all the experiments with only TPC-1 cell line. From this, authors argue that the three extracts exert anti-proliferative, anti-apoptotic and anti-inflammatory, claiming the beneficial effect on anti-tumor activity. However, it still remains a possibility that the three extracts are toxic itself that they might kill other normal cells. Moreover, they show the cell viability was decreased by three extracts, but whether it is the same or not on normal cells was not determined. So, they are expected to show non-toxicity of the extracts in non-tumor cells. Even though the in vivo study would be the further study as they indicated in conclusion, what is the importance of this study before the toxicity problem is secured? I suggest that the appropriate control (normal cells such as fibroblast) experiment is included or in vivo study is included in the present study.

Minor points:

- The quantification method needs some more description. Was the band intensity value normalized by B-tubulin band intensity? Clarify this.
- The authors are expected to explain why the effects of the three extracts are different in discussion part.

- The written English is acceptable but there are many omissions of space or punctuations to be corrected.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Unable to assess

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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