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## The Author Response

# Antiproliferation and Redifferentiation in Thyroid Cancer Cell Line by Polyphenol Phytochemicals

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Thank you for your pointing out some potential discrepancy that some well known thyroid cancer cell lines are not derived from thyroid cell origin in our recent study (1). Schweppe et al. (2) evaluated 40 reported thyroid cancer-derived cell lines using short tandem repeat (STR) and single nucleotide polymorphism (SNP) array analysis. They found some misidentified cell lines in August 2008; the ARO matched the HT-29 colon cancer cell line, and the NPA matched the the M14/MD-MB-435S melanoma cell line (2).

In this report, they already admitted that STR or SNP profiling did not provide any information regarding tissue origin and the result of their study was due to cross-contamination of cell lines.

Actually we started our study from 2004, four years earlier that the submission date of paper from Schweppe et al. and thyroid cancer cell lines (NPA, FRO, ARO) were kindly donated by Dr. Shong, who reported several good articles using these undifferentiated, anaplastic thyroid cancer cell lines which are his major concern of interest (3). We did not deal with cancer cell lines other than F9, thyroid cancer cell lines at that time. Therefore, we thought that our cells were not cross-contaminated with cancer cell lines derived from other cell origin.

In the article of Scheweppe et al. (2), they reported that NPA was identical to M14 cell line and MBA-MB-435S cell line. Before mentioning about the relation between NPA cells and M14/MBA-MB-435S cells, the M14 cell line was not identical to the MBA-MB-435S cell which Hollestelle A and Schutte M (4) revealed in 2009. The M14 cell was originated from human male melanoma and MBA-MB-435S was originated from human female breast cancer. M14/MBA-MB-435S cells have been reported to express only heterozygous BRAF V600E mutations, but NPA cells showed homo/heterozygous BRAF V600E mutations by Scheweppe et al. (2), and they suggested that the difference was due to LOH occurred during culturing. Likewise, ARO cells have been reported to express homo/hemizygous or heterozygous BRAF mutations, but HT-29 cells showed only heterozygous mutation by Scheweppe et al. (2). Therefore, the report that the NPA cell is identical to M14/MBA-MB-435S cell and ARO cell is identical to HT-29 cell was based on their suggestions not on true scientific data.

In conclusion, we insist that the NPA or ARO cells used for our study are of true thyroid undifferentiated, anaplstic thyroid cancer cell origin, and the claims by Scheweppe et al. (2) are due to cross-contaminations during cell passages in the laboratory as they described.

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