Review of: "Transcriptome and metabolome analyses revealed that narrowband 280 and 310 nm UV-B induce distinctive responses in Arabidopsis"

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Potential competing interests: The author(s) declared that no potential competing interests exist.

In this paper, transcriptomic and metabolomic analyses of UV-B responses of plants to 280 and 310 nm were performed separately. Narrowband (NB) UV lamps successfully induced strict wavelength-dependent responses, especially at each wavelength; it is interesting to note that there is little overlap in the genes whose expression was induced on day 2. The discussion comparing the expression of each gene and the results of the gene ontology analysis with those of the metabolome analysis is also carefully done and convincing with citations. However, questions remain regarding the interpretation of RT-qPCR. The authors state that the expression levels of the three genes tend to increase when the 280 nm LED irradiation exceeds 2.5 μmol, which is not satisfactory. If one were to mention a trend in expression levels, one would also need to mention the difference in UV-B-independent trends in expression levels for each line on day 0. Without a clear correlation between the microarray results and the RT-qPCR results, it would not be suitable for publication; it would be better to add the UVR8 mutant data to the RT-qPCR data, but it would not be absolutely necessary.

Minor points

1. Figure 1 should be added to the following text citation in Discussion.

There were actually few genes with low q-values under 310 nm irradiation, indicating the Arabidopsis response to 310 nm is weak (Supple- mentary Tables S2 and S4).

2. The following text citation in the Discussion should be Figure 5.

Result of transcriptome analysis, expression of catabolic genes, PAOs, was induced by 280 nm UV-LED irradiation (Fig. 3b).