Author’s response to reviews

Title: Protective effect of AVS073, a poly herbal formula, against UVA-induced melanogenesis through a redox mechanism involving glutathione-related antioxidant defense

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Version: 3 Date: 16 June 2013

Author’s response to reviews: see over
Dear Editor,

I wish to submit my revised manuscript to be considered for publication as a Research Article in *BMC Complementary & Alternative Medicine*.

‘Protective effect of AVS073, a polyherbal formula, against UVA-induced melanogenesis through a redox mechanism involving glutathione-related antioxidant defense’

This work assessed antimelanogenic effects and redox mechanisms of a traditional Thai herbal formula, Ayurved Siriraj Brand Wattana (AVS073), and gallic acid, a phenolic compound present in the formula extracts, in association with modulation of glutathione (GSH)-related antioxidant defenses including GSH, glutathione S-transferase (GST) and \( \gamma \)-glutamate cysteine ligase catalytic (\( \gamma \)-GCLC) and modifier (\( \gamma \)-GCLM) subunit using G361 human melanoma cells irradiated with UVA. We demonstrated for the first time that AVS073 extracts exerted inhibitory effects on UVA-mediated melanogenesis in G361 cells through improving the redox state by upregulation of GSH and GST at the cellular and molecular level. Pharmacological activity of the polyherbal formula would be attributed to combined action of different phenolic compounds present in the formula.

We have addressed the editorial point and included an Authors’ contributions section in our manuscript as follows;

**Authors’ contributions**

UP designed the study, analyzed the data and wrote the manuscript. TP and VT performed the experimental studies of cellular melanogenesis and antioxidant defense. JW and RP carried out the chromatographic fingerprint analysis. PA wrote the manuscript. TL conceived the study and provided the herbal samples. All authors read and approved the final manuscript.

Yours sincerely,

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