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The mode of actions of muscadine extracts on skin health benefits

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Muscadine extract (ME) was uniquely developed as an ingredient for topical skin care cosmetic application. The ME was decolorized, deodorized, and standardized to 9% total polyphenol content. The IC50 of ME activity on elastase was 0.056%, demonstrating 100% inhibition at 0.5% and 1% ME. The IC50 of ME on collagenase activity was 0.28%, demonstrating 69% inhibition at 0.5% ME and 79% at 1% ME. When the antioxidant capacity was measured using DPPH assay, ME at 0.05, 0.1, 0.5, and 1 % showed 1926, 1943, 1944, and 1920 μM Trolox equivalents, respectively. When MatTek EpiDerm tissue was treated with 0.1% and 1% ME prior to the UVB exposure, thymine dimer formation was significantly reduced by 35% and 100%, respectively, while 45% reduction in thymine dimer formation was observed when the tissue was treated with 1% ME after the UVB insult. When keratinocyte cells were treated with 0.01, 0.05, and 0.1% ME before the UVB exposure, cell survival was significantly increased than untreated cells as measured by MTT assay, showing 82%, 88% and 100% cell viability, respectively, as compared to 61% viability in untreated cells. These results suggest that this novel muscadine extract developed for topical skin care cosmetic application may have beneficial effects on skin elasticity and firmness and may have UVB protective effects by reducing the DNA damage, repairing the DNA damage and improving cell survival.

Biography

Sonhee Park has completed her PhD in Nutritional Biochemistry and Post-doctoral fellowship from the Ohio State University. She is a Senior Research Scientist of Shaklee Corporation. She has published 27 papers in refereed journals and book chapters.

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