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Co-regulation of Sirt1 and Pin1 contributes to UV A/B-induced skin photo ageing

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Cellular senescence is the hallmark of the ageing. Many characteristic features causing cells to age or senesce are observed during the process of ageing. Factors contributing to ageing may be intracellular or external. One of the most common factors causing cells to age and depict morphological changes characteristic to the ageing is ultraviolet (UVRs) light. In the present study we demonstrated that exposure to UVA and/or UVB light decreased the viability of skin cells (NHDFs and HaCaT cells) in vitro and caused the surviving cells to show symptoms of ageing like increased ROS production, high NO secretion and apoptotic DNA ladder. Expression patterns of two proteins Sirt1 and Pin1 which are critically involved in ageing were also checked in vitro and in vivo. It was found that upon treatment of UVA and/or UVB light, expression of Sirt1 was decreased and Pin1 was increased. However, it was surprising to find that treatment of cells with the compound KSY-PH1, which is presumably a Pin1 inhibitor, caused the expression of Sirt1 to increase significantly. This increase in Sirt1 expression was even more noticeable than treatment with Resveratrol, an established Sirt1 activator. This finding is thus promising for the reason that protective and rejuvenating role of Sirt1 in the process of ageing (especially UV light induced ageing) can be strengthened by the treatment of KSY-PH1. So we assume that KSY-PH1 may delay the ageing and senescence induced by UV irradiation.

Biography

Hussain Mustatab Wahedi finished his Masters in Biosciences at the age of 25 from COMSATS Institute of Information Technology, Islamabad. He has been working in well reputed educational and research institutions over the last few years. He has published 7 papers in international journals and is doing PhD from Gachon University, South Korea.

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