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PROTEOMICS STUDY ON KELOID FIBROBLAST; HSP 70 AND ITS EFFECT ON EXPRESSION OF MATRIX METALLOPROTEINASE-2,9

Won Jai Lee[1], Jong Eun Lee[2]

[1]*Department of Plastic & Reconstructive Surgery, Yonsei University of College of Medicine, Seoul, Korea, Republic of,*
[2]*Department of Anatomy, BK21 Project foe Medical Science, Yonsei University of College of Medicine, Seoul, Korea, Republic of*

Introduction: Keloids are benign fibrous tumor of the dermis with abnormal fibroblastic proliferations. Mechanisms for keloid formation include alterations in growth factors, collagen turnover, tension alignment, and genetic and immunologic contributions, but exact mechanisms have not been demonstrated yet. Keloid-derived fibroblasts have different characteristics compared to normal dermal fibroblasts. In this study, we investigated relationship between characteristic proteins differently expressed in keloid-derived fibroblasts using proteomic tools, expression of heat shock protein 70 (Hsp70) and MMPs expression, and evaluated the alteration of Hsp 70 in hypoxic injury.

Methods: To investigate characteristic proteins differently expressed in keloid-derived fibroblasts, 2-dimensional electrophoresis was performed with fibroblasts derived from normal and keloid tissue. To confirm change of Hsp 70 expression *in vivo & in vitro*, we have performed immunohistochemical staining (in vivo) and immunoblot analysis (in vitro). And then to evaluate the effects of hypoxic injury on the expression of the Hsp 70 and MMP-2, 9, immunoblot analysis of Hsp 70 and MMP-2, 9 after hypoxic injury (7, 24, and 48 hrs) in the keloid-drived fibroblasts and normal dermal fibroblasts were done.

Results: The 29 differently expressed proteins were observed in keloid-derived fibroblasts and among them, 26 proteins were identified with MALDI-TOF-MS including heat shock protein(Hsp) 70, Hsp 27, endoplasmic reticulum protein 29 precursor, and vimentin. Among them, Hsp 70 was up-regulated in keloid-derived fibroblast compared to normal human dermal fibroblast. Immunoblot showed that keloid-derived fibroblast expressed higher level of Hsp70 compared to normal dermal fibroblast. Immunohistochemical stain showed expression of higher level of Hsp 70 and lower level of MMP-2, 9 in keloid tissue compared to peripheral normal tissue dermal layer. We examined the influence of Hsp 70 on expression and activity of matrix metalloproteinase-2, 9 (MMP-2, 9). Immunoblot showed that Hsp 70 over-expression by hypoxia (during 7, 24, and 48 hrs) suppressed MMP-2, 9.

Discussion: These results indicate that highly expressed Hsp 70 on keloid fibroblast may play a role in regulating (suppression) MMP-2, 9. But, its exact role in pathogenesis of keloid have not been explained. Further functional analysis should be conducted to find out whether Hsp 70 is directly associated with pathogenesis of keloid such as collagen accumulation and degradation.

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USE OF A SILVER DRESSING* TO TREAT A HISTOPLASMOSIS CAPSULATUM INFECTED LEG WOUND IN A PATIENT WITH AIDS

Michael Miller

The Wound Healing Center, Terre Haute, Indiana, United States

The fungus causing Histoplasmosis grows naturally in soil in some areas of the United States, mostly in the midwestern and southeastern states and along the Ohio and Mississippi River valleys. It thrives in soil that is enriched with bat or bird droppings. Histoplasmosis is spread through the air. If soil containing the histoplasmosis fungus is disturbed, the fungus spores get into the air. People can breathe in the spores and get Histoplasmosis. The usual presentation is in the form of a lung infection with symptoms including tiredness, fever, chills, chest pains, and a dry cough. Disseminated Histoplasmosis results in a variety of serious symptoms and can involve all body organs though the literature does not identify skin infection A review of the literature identifies this as the first reported case of a Histoplasmosis infection in a deep tunneling leg wound which was successfully treated to complete healing using the Silverlon Fabric (Argentum Medical, LLC., Williowbrook, IL, USA).

* Silverlon