

## **Keratinocyte growth factor alters signaling factors to transform Korean black goat mammary fat pad and mouse adipose stem cells to epithelial lineage**

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Damages in skin, airway, mammary gland, testes, pancreas, intestine and other epithelial wall is very common in today's clinical pathology. Therapeutic use of ASCs from the subcutaneous adipose tissues could be a way to repair the damages in epithelium. We therefore, investigated epithelial differentiation of isolated and characterized mammary fat pad (Korean black goat) and of 3T3L1 mouse adipose stem cells with keratinocyte growth factor (KGF) and bone morphogenetic protein (BMP)-6. KGF successfully induced epithelial-specific genes and related transcript expression in cells from both species. Contrastingly, BMP-6 resulted in down regulation of all epithelial-specific genes and related transcript expressions. KGF upregulated genetic expression of K8, K18, EpCAM, K5, K14, SMN1 and  $\alpha$ -SMA significantly ( $p < 0.05$ /  $p < 0.01$ ). Similarly, significant expressions of several epithelial-specific surface antigens and transcripts were also observed in immunostaining/blot analysis as compared to BMP-6 treated and control cells. Furthermore, ayoub shaklar staining (specific to keratin) of KGF treated cells showed significant ( $p < 0.01$ ) amount of keratin formation evident with the intensity % of stain compared to the control and BMP-6 treated groups. Conclusively, KGF was observed to have potential to differentiate adipose cells to epithelium and therefore this regimen could be used either invitro or invivo to treat epithelial loss in animals and humans.

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