FSL-1 (DIACYLATED LIPOPROTEIN) INDUCED SIGNAL PATHWAYS IN ATOPIC DISEASES-LIKE MODEL

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Background: Atopic diseases such as asthma and atopic dermatitis are characterized by epithelium secretion of thymic stromal lymphopoietin (TSLP), IL33 (interleukin 33) and IL25 (interleukin 25). Nuclear factor κB (NFκB) is known to be involved in the production of numerous inflammatory agents.

Aim & Methods: This research aspired to reveal the factors involved in the signaling pathways in HaCat keratinocytes, which are consequent in secretion of cytokines typical for atopic diseases. Those cytokines' expression was studied by real time PCR, using the stimulator FSL-1 and inhibitors to: TLR2/6 (human anti TLR6 antibody), oxidative stress (N-actylcysteine), p38 MAPkinase (SB202190, SB203580) and IKK2 (IMD0354). IkBα and p38 MAPkinase activation was studied by western blot.

Results: HaCat keratinocytes simulated with 1µgr/ml FSL-1 express higher level of IL33 mRNA (depending on NFκB activation) and higher levels of IL25 mRNA and TSLP mRNA (depending on p38 MAPkinase activation). Endogenous-produced oxidative stress is involved in activation of NFκB and expression of TNFα, IL33 and TSLP.

Conclusions: The mechanisms by which FSL-1 activates the productions of atopy related cytokines are multi-facets signal transduction pathways, involving the p38 MAPkinase and NFκB factors. More studies are needed to elucidate the interaction between these two pathways.