

Abstract of Presentation

Presentation Title:

Atopic dermatitis and associated hematological malignancies arise from loss of Notch signaling in the skin

Abstract :

The Notch pathway is essential for proper epidermal differentiation during embryonic skin development. We demonstrate that postnatal epidermis-specific inactivation of Notch signaling induces the development of a severe form of atopic dermatitis (AD) in mice. Likewise, patients suffering from AD, but not psoriasis or lichen planus, have a marked reduction of Notch receptor expression in the skin. Loss of Notch in keratinocytes leads to an activation of NF- κ B signaling which in turn induces the production of Thymic stromal lymphopoietin (TSLP), a cytokine deeply implicated in the pathogenesis of AD. We genetically demonstrate that TSLP is responsible for the AD as well as the development of a cell non-autonomous G-CSF induced myeloproliferative disorder (MPD) in mice. In summary, Notch signaling in adult skin controls local and systemic inflammatory responses; its loss leads to AD and cell non-autonomous hematological malignancies.