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Titel des Beitrags: Immunomodulatory mediators from pollen enhance the migratory capacity of dendritic cells and license them for Th2 attraction.

Abstract: The immune response of atopic individuals against allergens is characterized by increased levels of Th2 cytokines and chemokines. However, the way in which the cytokine/chemokine profile is matched to the type of invading allergen, and why these profiles sometimes derail and lead to disease, is not well understood. We recently demonstrated that pollen modulates dendritic cell (DC) function in a way that results in an enhanced capacity to initiate Th2 responses in vitro. Here, we examined the effects of aqueous birch pollen extracts (Bet.-APE) on chemokine receptor expression and chemokine production by human monocyte-derived DCs. Bet.-APE strongly induced expression and function of CXCR4 and reduced CCR1 and CCR5 expression on immature DCs. In addition, DC treatment with Bet.-APE significantly reduced LPS-induced production of CXCL10/IP-10, CCL5/RANTES; induced CCL22/macrophage-derived chemokine; and did not significantly change release of CCL17/thymus and activation-regulated chemokine. At a functional level, Bet.-APE increased the capacity of LPS-stimulated DCs to attract Th2 cells, whereas the capacity to recruit Th1 cells was reduced. Bet.-APE significantly and dose-dependently enhanced intracellular cAMP, suggesting that water-soluble factors from pollen grains bind a
G(als)-protein-coupled receptor. E(1)-Phytoprostanes were identified to be one player in the Th2-polarizing potential of aqueous pollen extracts. In summary, our results demonstrate that pollen itself releases regulatory mediators which generate a Th2-promoting micromilieu with preferential recruitment of Th2 cells to the site of pollen exposure.