

New Roles of Lipid Mediators in Cutaneous Immunity and Allergy

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When the human body is exposed to external stimuli, lipid mediators as prostanoids and sphingosine-1-phosphate (S1P), are produced. Prostanoids, consisting of prostaglandins (PGs) and thromboxane, and S1P exert a range of actions mediated through their respective receptors expressed in target cells. It has been demonstrated that each receptor has multiple functions whose expression is regulated in a context dependent manner, sometimes resulting in opposite, excitatory and inhibitory, outcomes.

Here, we review new findings on the roles of PGE2 and S1P in allergy and immune diseases, focusing on skin disorders. PGE2 produced by activated dendritic cells induces Th1/Tc1 differentiation from naïve T cells through EP1 receptor. Therefore, the PGE2-EP1 signaling is important for the establishment of contact hypersensitivity response. In addition, we will show our new finding on S1P in the establishment of contact hypersensitivity response in the latter part of our talk.