

Abstract (บทคัดย่อ)

Project Code : MRG60800172

Project Title : การศึกษาการกลایพันธุ์ของยีน STAT6 ต่อการเกิดโรคภูมิแพ้

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Project Period : 4 เมษายน 2560 - 3 เมษายน 2562

Objective : To investigate the functional consequences of the STAT6 mutation

Methods : We described a child who had idiopathic anaphylaxis in infancy, atopic dermatitis and allergic eosinophilic gastroenteritis with protein-losing enteropathy. His father had atopic dermatitis and food allergy. Both were heterozygous mutations in *STAT6* DNA binding domain. Flow cytometric analysis, cytokine measurements by ELISA/ Luminex assays from the patient samples, luciferase assay and immunofluorescence in *STAT6* mutants compared to wide type transfecants were performed to prove that the mutation resulting in activation of *STAT6*.

Results : Various experiments confirmed that the mutants are pathogenic. 3-D Structural modelling of *STAT6* revealed that the *STAT6* mutation is located at the surface of the *STAT6* DNA binding region, potentially having a stronger binding affinity. Immunofluorescence study confirmed that mutant *STAT6* preferentially localized in the nucleus. Constitutively DNA binding activation of *STAT6* mutants was also detected through HEK293T cell luciferase assays. Flow cytometric-based analysis of T helper cell populations and intracellular cytokine measurements from patient cells showed that immune responses of the patient directed toward a