Important role of *HLA-B*58:01* allele and distribution among healthy Thais: avoid severe cutaneous adverse reactions

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Allopurinol have been used to treat diseases that relating with the reduction of uric acid and be a treatment preventing the severity of ,including, gout, chronic kidney disease, chronic heart failure and diabetes mellitus (type 2). However, allopurinol metabolites can cause severe cutaneous adverse reaction (SCARs) consist of Drug Rash with Eosinophilia and Systemic Symptoms (DRESS) and Stevens-Johnson Syndrome (SJS)/Toxic Epidermal Necrolysis (TEN) . Previous studies, we found only *HLA-B*58:01* allele has a strongly association with allopurinol-induced SCARs in many populations: Han Chinese [P value = 4.7×10^{-24}], European [P value $<10^{-6}$] and Thai [P value <0.001]. However, there was no update the frequency of HLA-B alleles and pharmacogenetics markers distribution in healthy Thais and support for screening before the initiation of treatment. The aim of this study was to investigate the prevalence of *HLA-B*58:01* allele associated with allopurinol-induced SCARs in healthy Thai population. A retrospective study of 260 individual healthy subjects who living in Thailand. HLA-B were genotyped using sequence-specific oligonucleotides (PCR-SSOs). In this study, we identified the prevalence of HLA-B alleles consist of *HLA-B*46:01 (12.69%), HLA-B*15:02 (8.85%), HLA-B*13:01 (6.35%), HLA-B*40:01 (6.35%), HLA-B*38:02 (5.00%), HLA-B*51:01 (5.00%), HLA-B*58:01 (4.81%), HLA-B*44:03 (4.62%), HLA-B*18:01 (3.85%) and HLA-B*15:25 (3.08%).* Therefore, the distribution of *HLA-B*58:01* will support the clinical implementation and screening usage of allopurinol in Thai population.

Keywords: Allopurinol, *HLA-B*58:01, T*hai population, SCARs