

## Important role of HLA-B\*58:01 Allele and Distribution Among Healthy Thais: Avoid Severe Cutaneous Adverse Reactions

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**Abstract :** 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 a 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 =  $4.7 \times 10^{-24}$ ], 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, Thai population, SCARs

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