

## Universal pharmacogenetics marker: the frequency of *HLA-B\*58:01* allele in Thai and other populations.

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**Statement of the Problem:** Methodology & Theoretical Orientation: Findings: Allopurinol is a widely used drug in the treatment of gout arthritis and hyperuricemia. Previous studies found the association of HLA-B\*58:01 allele with allopurinol-induced severe cutaneous adverse reactions (SCARs) including Stevens-Johnson syndrome (SJS), toxic epidermal necrolysis (TEN) and drug reaction with eosinophilia and systemic symptoms (DRESS) which are potentially life-threatening reactions. The distribution of HLA-B\*58:01 allele was important in many populations. The aim of this study was to investigate the frequency of HLA-B\*58:01 allele in four regions of Thailand. Methodology & Theoretical Orientation: Two hundred healthy Thais were enrolled in this study who have lived in the area for more than three generations. HLA-B alleles were genotyped by using polymerase chain reaction- sequence specific oligonucleotides (PCR-SSOs). This study was approved by the Ethics Review Board of Rangsit University.

**Findings:** HLA-B\*58:01 allele was found in Southern, Northern, Center and North-east of Thailand (0.10, 0.06, 0.06 and 0.05 respectively) when compared with each region, no statistically significant differences were observed ( $p$ -value  $> 0.05$ ). Moreover, Korean, Malaysian, Han Chinese, Indonesian, Taiwanese, Vietnamese, Moroccan, Caucasian and African American and South African black have the distribution of HLA-B\* 58:01 allele (0.06490, 0.14000, 0.08900, 0.04170, 0.10027 and 0.06500, 0.01400, 0.02560, 0.03191, 0.08140 respectively).

**Conclusion & Significance:** There were no significant differences between Thais and other populations ( $p$ -value  $> 0.05$ ). Therefore, this result suggests that HLA-B\*5801 allele is a universal pharmacogenetics marker for screening before initial treatment in various populations and to prevent the risk of developing allopurinol-induced SCARs.

### Biography

Chayanit Pichedvanichok is a high school student in Shrewsbury International school who has passion in the medical field. Her years of studying biology and chemistry leads to the building of this model to further support her enthusiasm in the medical field. Chayanit had used her knowledge and experience from doing biology, chemistry lab experiment, physical skill from studying Design and technology, and mathematical skill to help conduct this investigation and to evaluate the results. She carefully analyses test results and information gathered during examination to properly receive the product. Her intern experience in hospitals such as Chulalongkorn and Phramongkutklao hospital allows her to improve performance at individual and practice level in knowledge and skills in the medical field.