

# Healthy Thai population and distribution of *HLA-B\*57:01* linked with abacavir hypersensitivity syndrome

Boonyavee Uthaisang<sup>1</sup>, Patompong Satapornpong, Ph.D.<sup>2,3</sup>

<sup>1</sup>Ruamrudee International School, Bangkok, Thailand (First author)

<sup>2</sup>The division of general pharmacy practice, department of pharmaceutical care, College of Pharmacy, Rangsit University, Pathum Thani, Thailand

<sup>3</sup>Excellence Pharmacogenomics and Precision Medicine Centre, College of Pharmacy, Rangsit University, Pathum Thani, Thailand (Corresponding author)

## Abstract

**Introduction:** Abacavir is a nucleoside reverse transcriptase inhibitor (NRTIs) widely used for treatment of HIV infection. However, abacavir can lead to hypersensitivity reactions with approximately 5% after initiation of treatment. The abacavir hypersensitivity reaction (AHR) is usually manifested within six weeks after initiation of treatment and is clinically characterized by fever, rash, gastrointestinal, neurological, and musculoskeletal symptoms. The mortality rate of AHR is 0.03%. In previous studies, it was found that *HLA-B\*57:01* has strong association with AHR (p-value < 0.001) in caucasian population. Nevertheless, the pharmacogenetics marker and the distribution of *HLA-B* alleles might be different in other populations.

**Objective:** This study aims to investigate the distribution of *HLA-B\*57:01* among the healthy Thai population.

**Materials and Methods:** *HLA-B* genotypes of three-hundred healthy Thais were determined by the PCR sequence-specific oligonucleotides probe.

**Results:** The frequency of the *HLA-B* alleles were *HLA-B\*46:01* (14.70%), *HLA-B\*58:01* (7.33%), *HLA-B\*15:02* (7.17%), *HLA-B\*40:01* (7.00%), and *HLA-B\*13:01* (5.83%). Among healthy Thai population, 6 (1.00%) subjects carried *HLA-B\*57:01* allele. Moreover, *HLA-B\*57:01* allele was similarly distributed in Asian population (0.5-1%) but higher in Caucasian population (3%) among HIV-infected patients.

**Conclusions:** Screening of *HLA-B\*57:01* should take place among HIV-infected patients who are diagnosed with abacavir in order to prevent AHR.

**Keywords:** Abacavir, *HLA-B\*57:01*, Thai population, Hypersensitivity reactions