

# ***HLA-A\*33:01* allele distribution in association with terbinafine- induced liver injury in healthy Thai population**

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Terbinafine is an antifungal medication. However, terbinafine has been associated with drug induced liver injury (DILI). Genome-wide association study had shown significant correlations between terbinafine-induced DILI, and *HLA-A\*33:01* gene (OR=2.6, 95% CI=1.8-3.7, and p-value =  $7.0 \times 10^{-8}$ ) in Europeans. Interestingly, the distribution of pharmacogenetics markers in each population might differ. This study aims to investigate the distribution of *HLA-A\*33:01* gene related to terbinafine-induced DILI in the healthy Thai population. 200 healthy Thais were enrolled in this study who have lived in the area for more than three generations. *HLA* class I alleles were genotyped by using polymerase chain reaction-sequence specific oligonucleotides (PCR-SSOs). A total of 33 *HLA-A* alleles were found. Ranked by their frequencies, top 10 were *HLA-A\*11:01* (27.50%), *HLA-A\*24:02* (11.50%), *HLA-A\*02:03* (11.00%), *HLA-A\*33:03* (10.75%), *HLA-A\*02:07* (7.50%), *HLA-A\*02:01* (4.75%), *HLA-A\*24:07* (4.50%), *HLA-A\*01:01* and *HLA-A\*30:01* (2.75%), *HLA-A\*11:02* and *HLA-A\*24:10* (2.00%), and *HLA-A\*02:06* (1.75%). *HLA-A\*33:01*'s frequency was 0.25% in the healthy Thai population, while it was 2.95% of Israel, 1.92% of Han Chinese, 1.8% of Brazil, 1.7% of Columbia, 1.1% of Germany, and 0.6% of India. The frequency of *HLA-A\*33:01* could be used for pharmacogenetics screening before initiation of terbinafine treatment, in order to avoid terbinafine-induced DILI.

Keywords: *HLA-A\*33:01* frequency, Terbinafine-induced DILI, Thai population

## **Biography**

I am Natthapat Chitthiang, a current junior at Singapore International School of Bangkok in Thailand studying in the International Baccalaureate program. With a passion for biology, especially in the field of genetics, I am interested in how something as minute as a gene could be so fundamental, yet at times so detrimental to human life. I enrolled in a research program at Medcoach Institute, supervised by Professor Patompong Satapornpong, to further provoke her curiosity by exploring and researching the field of pharmacogenetics. I wish to pursue higher education majoring in biotechnology or medicinal chemistry.