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HLA-A*33:01 allele distribution in association with terbinafine- induced liver injury in healthy thai population**Natthapat Chitthiang***Singapore International School of Bangkok, Thailand*

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 = 7.0×10^{-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.

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.

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