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The pharmocogenetics database of *CYP2C19* variant in Healthy Thai population

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CY2C19 is a liver enzyme responsible for metabolizing clinical drugs such as: omeprazole, clopidogrel, phenytoin, proguanil, diazepam, citalopram, imipramine, amitriptyline and clomipramine. In previous studies, the variants of *CYP2C19* can be used to predict the specific reaction a person might have after receiving medicine. The aim of this study was to investigate the variant of *CYP2C19* genes and the allele distribution in the healthy Thai population. *CYP2C19**2 (c.681G>A; rs4244285), *CYP2C19**3 (c.636G>A; rs4986893), *CYP2C19**17 (g.-806C>T; rs12248560) of 160 unrelated healthy Thai individuals were test using real-time PCR. The results show that the most common allele frequency was *CYP2C19*1* with a percentage of 68.44%. The second most common allele frequency was *CYP2C19**2 with a percentage of 23.75%. Lastly, *CYP2C19**3 was found in only 4.69% and *CYP2C19**17 with 3.13%. *CYP2C19* metabolizer in the healthy sample consist of 4 phenotypes: Extensive metabolizers (EM) (*CYP2C19**1/*1 of 45.00% and *CYP2C19**2/*17 of 1.25%), the Intermediate metabolizers (IM) (*CYP2C19**1/*2 of 34.38% and *CYP2C19**1/*3 of 7.50%), the poor metabolizers (5.0% with *CYP2C19**2/*2 and 1.88% with *CYP2C19**2/*3 genotypes), and the Ultra rapid metabolizers (UM: 5.00% with *CYP2C19**1/*17 genotype). The result shows that more than half of the participants have abnormal metabolism with only 46.25% of the participants having normal (extensive) metabolizers. A concerning 41.88% of participants are intermediate metabolizers. Thus, the database of *CYP2C19* variant distribution in the healthy Thai population should be compared with other ethnicity to support precision medicine for screening prior before administration of medication to individuals.

KEYWORDS: Thai population, *CYP2C19* gene variant, Real-time PCR

Biography

I am a year 12 student studying the IB diploma programn in the Regents International School Bangkok. My current interests are medicine and research; precisely pharmacogenetics. I hope to use this opportunity to strengthen my experience inorder to pursue my dream carrer of a doctor.