



# ***ABCB1* gene expression in peripheral blood mononuclear cells in healthy Thai males and females**

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**ABSTRACT.** We compared the expression of the *ABCB1* gene in healthy male and female Thai subjects; this gene encodes the P-glycoprotein transporter in peripheral blood mononuclear cells (PBMCs). We also identified the most suitable housekeeping genes for normalization of *ABCB1* expression levels in PBMCs. PBMCs from 30 females and 26 males were isolated. Total RNA was extracted, followed by reverse transcription (100 ng total RNA per sample). The internal normalization controls were *actin- $\beta$* ,  *$\beta$ -2M* and *GAPDH*. Real-time quantitative PCR was then performed to determine the expression levels of the *ABCB1* gene. The expression levels were found to be 1.5- to 2.5-fold higher in males, depending on the endogenous control used for normalization. *Actin- $\beta$*  was the most stable control gene and could be used as a single endogenous control for normalization of *ABCB1* expression levels in PBMCs. However, more than one endogenous control genes are recommended for normalization of gene expression. We conclude that the expression levels of *ABCB1* in PBMCs is influenced by gender; this helps, in part, explain the gender difference in pharmacokinetics and

pharmacodynamics of drugs that are P-glycoprotein substrates. *ABCB1* gene expression profiles need to be carefully interpreted with regards to the endogenous control genes that are involved.

**Key words:** Gender difference; *ABCB1* expression; Peripheral blood mononuclear cells