HLA-B*1502 Detection

Assessing the Carbamazepine induced Stevens-Johnson Syndrome / Toxic Epidermal Necrolysis in at-risk populations[1]

- 600+ DNA samples tested & validated by DNA sequencing
- 99+% sensitivity[2] & ~98% specificity[2]
- strong patent positions in US, Europe, China, Taiwan, Singapore and Australia[3]
- genomic DNA to results in ~2 hours

Carbamazepine (CBZ) is among the most commonly used antiepileptic drug and pain management drug. However, serious and sometimes life-threatening reactions, including Stevens-Johnson Syndrome (SJS)/Toxic Epidermal Necrolysis (TEN), have been reported with CBZ. The risk of SJS and TEN exists in all patients, but in patients of certain Asian ancestry the risk can be significantly higher.

Studies[4,5] have shown that the HLA-B*1502 allele found in Han Chinese and Thai population have strong association with SJS and TEN. Thus in 2007 FDA released an announcement[6] related to this subject and require CBZ prescription to include recommendation of genetic test for patients of Asian descendent.

HLA-B*1502 RT-PCR[7] based detection

- Compatible with most Real-Time PCR systems
- SYBR Green dye
- CE Certified & Research Use

HLA-B*1502 Gel based detection

- Easy to use agarose gel technique
- Compatible with Agilent 2100 BioAnalyzer[8]
- CE Certified & Research Use

Table 1: HLA-B*1502 Typing

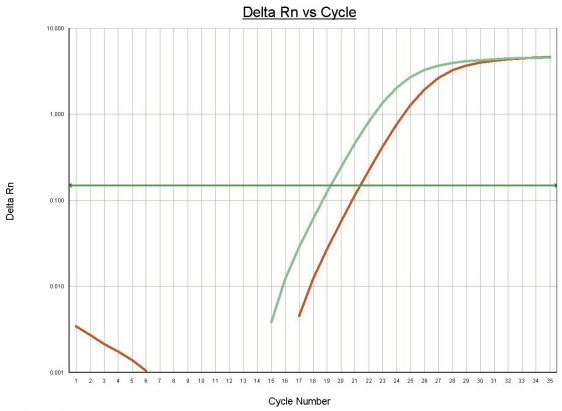
Genomic DNA	Sample #	DNA Sequencing		Pharmigene RT-PCR		
Ethnicity of Healthy Volunteers		Positive (+)	Negative (-)	Positive (+)	Negative (-)	False +
Taiwan	100	9	91	9	91	-
Thailand	51	7	44	7	44	-
Indonesia	51	17	34	21	30	4
Philippine	49	4	45	9	40	5
India	46	2	44	2	44	-
Vietnam	49	15	34	15	34	-
Han Chinese	170	15	155	15	155	-
Caucasian	100	-	100	-	100	-
Total	616	69	547	78	538	9

1. Current studies suggest at-risk populations includes Chinese Han and South East Asian descendent.
2. Table 1.
3. US7470513, EP1697539, CN1902328, TWI287580, SG122321 and AU2004289951 are properties of Academia Sinica, Taiwan, and are licensed exclusively to Pharmigene, Inc.
4. Chung, WH, et al, Medical genetics: a marker for Stevens-Johnson syndrome. (2004) Nature 428:486.
5. Locharernkul, C, et al, Carbamazepine and phenytoin induced Stevens-Johnson syndrome is associated with HLA-B* 1502 allele in Thai population. (2008) Epilepsia:1-5, 2008.
6. FDA News released in Dec. 12, 2007 Carbamazepine Prescribing Information to Include Recommendation of Genetic Test for Patients with Asian Ancestry.
7. Additional license may be needed for various usage of RT-PCR in specific territory.
8. "Agilent" and "Agilent 2100 BioAnalyzer" are properties of Agilent Technologies.

Purchase & Distribution

License & Tech Transfer

Contract Manufacturing

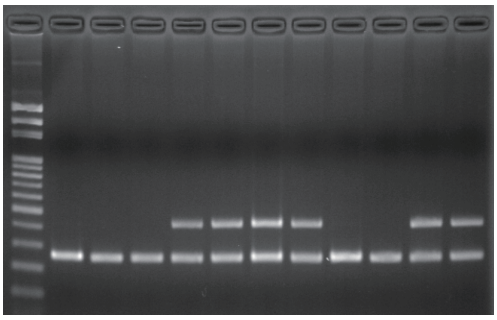


The ΔCt value between tested sample and internal control is used to determine the presence or absence of HLA-B*1502.
ΔCt = Ct of HLA-B*1502 - Ct of internal control

HLA-B*1502 RT-PCR based detection kit

- PCR Master Mix including SYBR GREEN (2x conc.)
- HLA-B*1502 Detection Mix
- Internal Control Detection Mix
- Positive Control Template

Recommended Sample Requirement:
0.2 ml of Blood or 0.2 µg of Genomic DNA



The presence of larger DNA fragment indicates the presence of HLA-B*1502. The smaller DNA fragment is internal control.

HLA-B*1502 Gel based detection kit

- PCR Master Mix (2x conc.)
- HLA-B*1502 + Internal Control Detection Mix
- Positive Control Template

Recommended Sample Requirement:
0.2 ml of Blood or 0.2 µg of Genomic DNA

About Us...

At Pharmigene, Inc. we focus our efforts in developing, patenting, licensing, and commercializing technologies that address the prevention of adverse drug reactions. Our technologies includes HLA-B*1502 detection, HLA-B*5801 detection, Warfarin sensitivity detection (CYP2C9 detection & VKORC1 detection), etc. Pharmigene is an ISO 13485/9001 & GMP certified company since 2007.

Pharmigene, Inc.

USA : Tel:+1-650-847-1416 / Fax:+1-650-847-1415 **Taiwan :** Tel:+886-2-2695-9800 / Fax:+886-2-2695-7707

E-Mail : service@pharmigene.com http://www.pharmigene.com