

gb PHARM DPYD*2A

Clinical implications

Fluoropyrimidines (5-fluorouracil and its prodrugs capecitabine and tegafur) are the basic drugs used in chemotherapy of gastrointestinal cancer. Their use is limited by development of many toxic effects including life-threatening myelosuppression. Dihydropyrimidine dehydrogenase (DPD) catalyzes the initial step of pyrimidines catabolism. It inactivates fluoropyrimidine chemotherapeutics and its activity influences the frequency of toxicity. It is not recommended to administer the fluoropyrimidines to the patients with DPD deficiency. When studying polymorphisms of the gene for DPD (DPYD), the relationship between presence of particular mutations and decreased activity of DPD has been demonstrated. The allelic variant DPYD*2A (rs3918290) is the

thoroughly studied mutation of DPYD. Its presence results in production of nonfunctional enzyme that is considered as the essential cause of the fluoropyrimidines toxicity. When the presence of mutated allele in the patient genome is proven, dose reduction or alternative chemotherapy is recommended.

Principle of detection

The kit is intended for detection of mutation DPYD*2A (IVS14+1G>A) in gene for dihydropyrimidine dehydrogenase in human genomic DNA by **real-time PCR method (allelic discrimination)**.

Available products

Cat. No.	Product	rxn
3210-025	gb PHARM DPYD*2A	25

1 kit contains reagents to provide 25 PCR reactions (20 µl volume of each reaction).

Parameters of the diagnostic kit

- *in vitro* diagnostics
- CE IVD marked
- ready-to-use assay
- sample concentration 10-100 ng/µl
- positive and negative controls included
- FAM and HEX channels detection
- identical amplification profile as gb HEMO, gb GENETIC, gb PHARM kits

Content of the diagnostic kit

* Component	Conc.	Purpose
● Assay qPCR DPYD*2A	1.25×	Detection assay
● Deionized Water		Negative Control
● Standard WT DPYD*2A	10 ⁴ cop/µl	Positive Control
● Standard MUT DPYD*2A	10 ⁴ cop/µl	Positive Control
● Standard HET DPYD*2A	10 ⁴ cop/µl	Positive Control

* Lid colour



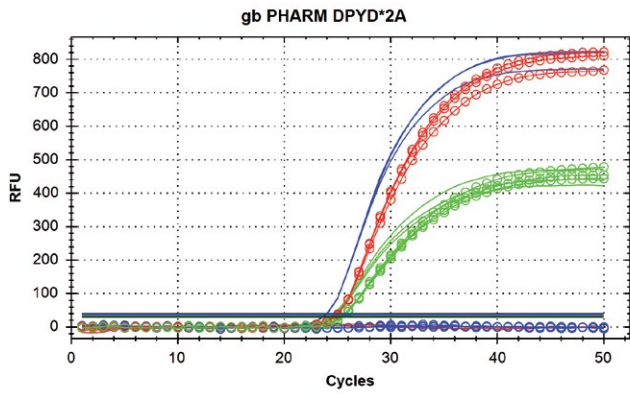


Fig.1 – Detection of DPYD*2A standards on CFX96 device; blue line – wild type; red line – mutant; green line – heterozygote; smooth line – FAM channel; dotted line – HEX channel

Validated for cyclers

- Rotor-Gene 3000/6000/Q (Corbett Research, Qiagen)
- iCycler iQ5/CFX96/CFX96 Touch (Bio-Rad)
- ABI 7500/7500 Fast/7900HT (Applied Biosystems)
- AriaMx (Agilent Technologies)
- MIC (Bio Molecular Systems)
- Light Cycler 480/Cobas z480 (Roche Diagnostics)
- QuantStudio 5 (Applied Biosystems)

