



Nuclear Laser Medicine

PHARMACOGENETICS

DPYD Real Time (FRET)
UGT1A1 Real Time (FRET) Plus

In line with the “Recommendations
for Pharmacogenetic Analyses”
AIOM-SIF 2024 and AIFA Note 2022.

Pharmacogenetics is the study of the effect of genomic variations on drug response. It allows to personalize the therapy and guarantees the most suitable treatment for the patient.

CHARACTERISTICS



Target

DPYD Gene
UGT1A1 Gene



Technology

Real Time PCR with melting
curve analysis



Sample

Whole blood (EDTA)



Turn around time

From sample to results:
approximately 3 hours



Analysis software

Software Real Gene DO022
(CE-IVD)



Automation

OMNIA SYSTEM

- ✓ Nucleic acid extraction
+ PCR set up
- ✓ Complete traceability
- ✓ LIS connectivity

WORKFLOW

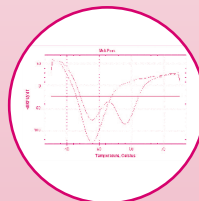
DNA
Extraction



Real Time
PCR



Results



DPYD REAL TIME (FRET)

The DPYD Real Time (FRET) assay allows the detection and identification of 5 mutations in DPYD gene associated to adverse reactions clinically relevant for the chemioterapic treatment with fluoropyrimidines, used for the treatment of several solid tumors.

The investigation of these mutations, carried out before the beginning of the treatment, supports the clinician in the definition of the optimal dosage of drug, reducing the risk of toxicity.



**5 MIXES
READY-TO-USE**



UNG ENZYME



**OPTIONAL POSITIVE
CONTROLS**



**INTERPRETATION SOFTWARE
BIDIRECTIONALLY CONNECTED
WITH LIS**

The kit allows the detection of the following variants of the *DPYD* gene:

- c.1905+1G>A
- c.1679T>G
- c.2846A>T
- c.1129–5923C>G*
- c.2194G>A

** variant in linkage disequilibrium with c.1236G>A*

48
TESTS

10
CONTROLS

Automatic

- Extraction + PCR Set Up: OMNIA LH 75 (code NLM AA1319/48 - AA1319/96)

Extraction

- The most common automated and manual extraction systems

Real Time PCR Instrument

- CFX Biorad

UGT1A1 REAL TIME (FRET) PLUS

The UGT1A1 Real Time (FRET) Plus assay allows the detection and identification of 5 allelic variants of UGT1A1 gene, associated to severe toxicity following therapy with irinotecan, a drug used for anti-tumoral treatment. In addition, the same variants are associated to altered metabolism of bilirubin in Gilbert syndrome.

The kit allows the detection of the following variants of *UGT1A1* gene:

- *1 (wt)
- *28
- *36
- *37
- *6

2 MIXES
READY-TO-USE



OPTIONAL POSITIVE
CONTROLS



INTERPRETATION SOFTWARE
BIDIRECTIONALLY CONNECTED
WITH LIS



24
TESTS

10
CONTROLS

Automatic

- Extraction + PCR Set Up: OMNIA LH 75 (code NLM AA1319/48 - AA1319/96)

Extraction

- The most common automated and manual extraction systems

Real Time PCR Instrument

- CFX Biorad

Name	Code
DPYD Real Time (FRET)	AA1579/48A
Heterozygous DPYD Control	FA157/10
UGT1A1 Real Time (FRET) Plus	AA1768/24A
Heterozygous UGT1A1 Plus Control	FA187/10



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