CERTIFIED COMPANY
UNI EN ISO 9001, UNI EN ISO 13485

DETECTION OF -31delC POLYMORPHISM IN CDA GENE (CITIDINE DEAMINASI)

AMPLI-CDA 435 C/T Cat. n.2.018RT

CDA (Citidine Deaminase) is the main enzyme inactiving gemcitabine, and its role in activity/tossicity of gemcitabine has been demonstrated by many pre-clinic and clinic studies. The polymorphism (SNPs) in the encoding region of CDA (CDA A79>C, CDA 208G>A, CDA435C>T) may influence the enzymatic activity of gemcitabine /platinum therapy in oncologic patients. Patients with CDA A79A/A79C genotype have showed a TtP (6.0 vs 3.0 months, p=0,001) and OS (11.0 vs 5 months , p=0,001) significant longer than patients with C79C genotype.Patients carrier of CDA C435C/C435T had a longer OS (p=0,025) , but correlation with TtP did not been observed. Conversely ,patients with reduced CDA activity experienced clinical benefit (91,8% vs 51,7%, p<0,001) significantly high in terms of TtP and OS.Moreover, the enzymatic activity is an independent factor of death/progression risk in a multivariate analysis. Finally, CDA enzymatic activity seems to be a predictive factor of activity and effectiveness gemcitabine chemotherapy.

CITARABINE (ARA-C) is a chemotherapy agent belonging to anti-metabolite drugs. The resistance to this drug is one of the reason giving rise to the failure of the therapy, associated to many side effects contributing to mortality and morbidity. The identification of genetic factors involved in cytotossicity of ARA-C may be useful for chemotherapy treatment.

Polymorphisms in deossicitine deaminase (DCK) and CDA (citidine deaminase) have been detected and they are useful for the detection of sensitive patients to cytotoxicity due to ARA-C drug.

The kit allows the detection of 435 C/T (SNP rs 1048977) of CDA gene using Real Time PCR technique . An amplification with specific primers and hybridization with a probe recognizing an internal sequence allows to detect the 435 C/T polymorphism. The probe is linked to two different fluorophores (reporter dye and quencher dye). The relapse of the quencher causes an increase of reporter fluorescence directly proportional to the yield of PCR products (Real Time quantitation PCR).

The probe recognizing the WT (C allele) is conjugated to VIC/Joe reporter, whereas the probe recognizing the polymorphism (T allele) is conjugated to FAM reporter.

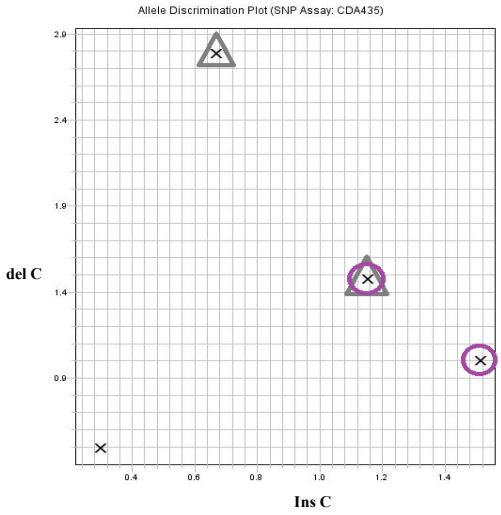
Principle of the method: a) extraction of genomic DNA;
b) amplification and detection using real-time PCR equipment;
Applicability: of genomic DNA extracted and purified from whole blood samples.
Number of Tests: 24.

KIT CONTAINS AND STORAGE

AMPLIFICATION	
Mix PCR 2X	-20°C
Mix Primers-Probes 20X CDA -31delC	-20°C
CDA 435 C/C WT Control	+ 4°C
CDA 435 C/T Heterozigous control	+ 4°C
CDA 435 T/T C Homozigous control	+ 4°C
H_2O sterile RNase/DNase FREE	-20°C

Stability: more than 18 months if properly stored.

ANALYSIS OF RESULTS



Purple: WT C/C sample
Grey-Purple: C/T heterozigous sample
Grey: T/T homozigous sample

References:
British Journal of Haematology, 144, 388–394, 2008
Blood, 113, 2145-2153, 2009
Annals of Oncology, 23, 670-677, 2012
Clin. Cancer Res. 11, 2620-2624, 200