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IDENTIFICATION OF POLYMORPHISM ELREA (delE746-A750) OF GENE EGFR

AMPLI set ELREA EGFR Cat.n.2.002

EGFR (epidermal growth factor receptor) is a membrane receptor tyrosine kinase belonging to the family of ErbB receptors. This receptor, once bound its specific ligand EGF (epidermal growth factor) and TGFα (transforming growth factor α), activates multiple signal transduction pathways that regulate various cellular processes: division, apoptosis, motility, adhesion.
EGFR mutations are implicated in about 30% of all epithelial tumours. About 90% of EGFR mutations include a substitution of leucine with arginine at position 858 (L858R) in exon 21, and a deletion of 5 amino acids in exon 19, which affects the conserved sequence ELREA (delE746-A750). These mutations cause constitutive activation of the EGFR tyrosine portion, destabilizing its self-inhibitor conformation, normally maintained in the absence of ligand, these activating mutations confer hypersensitivity to the inhibitors gefitinib and erlotinib tyrosine kinases. Several retrospective studies have shown that EGFR mutations are an independent predictor of response, overall survival (OS) and progression-free survival (PFS) in patients with metastatic non-small cell lung cancer (NSCLC) treated with gefitinib, the most of whom underwent prior chemotherapy.
The kit allows the identification of polymorphism LREA (delE746-A750) through the use of PCR (Polymerase Chain Reaction).

Principle of the method:
a) extraction of genomic DNA;
b) amplification;
c) detection on agarose gels.
Applicability of genomic DNA extracted and purified from biological samples, fresh tissue and paraffin.
Number of Tests: 24.

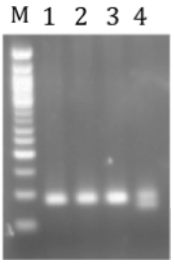
KIT CONTAINS AND STORAGE

AMPLIFICATION	
Mix PCR delELREA	-20°C
H_2O DNase/RNase-free	-20°C
Taq Polymerase (5U/□l)	-20°C
DNA Control	- 20°C

Stability: more than 18 months if properly stored.

INTERPRETATION OF RESULTS

The test determines the presence or absence of the mutation delE746-A750. In particular, the amplification of the wt sample corresponds to a fragment of 90 bp. The homozygous sample shows the amplification of 75bp fragment. The heterozygous sample shows the amplification of both fragments 90 bp end 75 bp clearly distinguishable after electrophoresis on an agarose gel at 3-4%.



Legend:
Lanes 1,2,3: WT sample (absence of deletion)
Lane 4: heterozigous sample (presence of deletion on an allele)
Blu: Allele MUT (G)

Size (bp) of PCR products		
wild type	**Heterozygous**	**mutated Homozygous**
90	90 75	75

References:
Science (2004) 304, *1497-1500.*
N Engl J Med (2004) 350, *2129-2139.*
Proc Natl Acad Sci U S A (2004) 101, *13306-13311.*
L Clin Oncol (2005), 23*:2513-2520.*