

CALR MutaPrime FA Kit 4

For qualitative detection of calreticulin (CALR) gene Type 1 and Type 2 mutations by using capillary electrophoresis based fragment analysis

Kit description

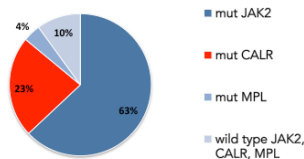
CALR mutations PCR detection Kit is a system for identification of CALR mutations that consist exclusively of insertions and deletions in the 9 exon of the gene resulting in a frameshift to a specific alternative reading frame.

Introduction

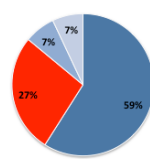
Calreticulin is a multifunctional protein that acts as a major Ca²⁺-binding (storage) protein in the lumen of the cellular endoplasmic reticulum. It is also found in the nucleus, suggesting that it may have a role in transcriptional regulation.

Calreticulin is encoded by CALR gene on the chromosome 19. Somatic mutations in exon 9 of CALR are the second most prevalent acquired nucleotide changes in Ph-negative myeloproliferative neoplasms (MPNs) except of polycythaemia vera (PV). The two specific mutations are most common, a 52-bp deletion (type 1 mutation) and a 5-bp insertion (type 2). Overall, these two mutation types are found in more than 90% of all patients with mutant CALR.

Essential Trombocytomia



Primary Myelofibrosis



Clinical significance

CALR mutations analysis routinely used for differential diagnosis of MPNs.

Kit characteristics

Number of tests: 4

Number of reactions (incl. controls): 8

Sample material: DNA

Diagnostic sensitivity: 100 %

Analytical sensitivity: 2 %

Optimum range of DNA concentration per reaction: 25-100 ng.

Related publications:

- Nangalia J, Massie CE, Baxter EJ, Nice FL et al. Somatic CALR mutations in myeloproliferative neoplasms with nonmutated JAK2. N Engl J Med. 2013 Dec 19;369(25):2391-405.
- Klampfl T, Gisslinger H, Harutyunyan AS, Nivarthi H et al. Somatic Mutations of Calreticulin in Myeloproliferative Neoplasms. N Engl J Med. 2013 Dec 19;369(25):2379-90.
- Lavi N. Calreticulin mutations in myeloproliferative neoplasms. Rambam Maimonides Med J. 2014 Oct 29;5(4):e0035.

Polymerase chain reaction (PCR) should be performed by solid-state block PCR thermo cyclers of any brand, but the following PCR conditions are adapted for Bio-Rad thermo cyclers.

It is recommended to perform a capillary gel electrophoresis using Life Technologies (3130, 3500, 3500xl) genetic analysers with POP7 polymer.

GeneMapper, Peak Scanner, GeneMarker programs can serve for fragment analysis

Kit components (CALR MutaPrime FA Kit 4)

Primer Mix	lyophilized
Wild-type control	lyophilized
Control DNA for Type 1 mutation	lyophilized
Control DNA for Type 2 mutation	lyophilized

Recommended total volume of PCR reaction is 11.5 µl.

Ordering information

- CALR MutaPrime FA Kit 4 4 tests
Cat.No IG-FA-2-4
- CALR MutaPrime FA Kit 48 48 tests
Cat.No IG-FA-2-48

Storage

Store after primers and controls dilution at -20°C.

Shipment at room temperature.

Additional reagents

- Nuclease free water
- TaqMan® Universal PCR Master Mix
Thermo Fisher Scientific (4364338)
- Hi-DiTM Formamide, 25 ml
Thermo Fisher Scientific (4311320)
- LIZ600 dye size standart
Thermo Fisher Scientific (4366589)

Related products:

- JAK2 MutaPrime RQ Kit (V617F)
Cat.No IG-RQ20-24(48)
- MPL W515 MutaPrime RQ Kit
Cat.No IG-RQ21-24(48)