IGH/MAF DNA-FISH Probe
Two Color, Two Fusion Translocation Probe CE IGH/MAF
Ref: 16-010

CG ITALIA

Empowering Personalized Cancer Treatment

Intended Use

The *IGH/MAF* DNA-FISH Probe is designed to detect the translocation between the *IGH* gene located on 14q32 and the *MAF* gene located on 16q23 by fluorescence *in situ* hybridization (FISH).[1] The translocation between the *IGH* and *MAF* gene, designated as t(14;16) (q32;q23), is found in 2-10% of multiple myeloma (MM) cases and is associated with a more aggressive disease along with an unfavorable prognosis and outcome.[2,3]
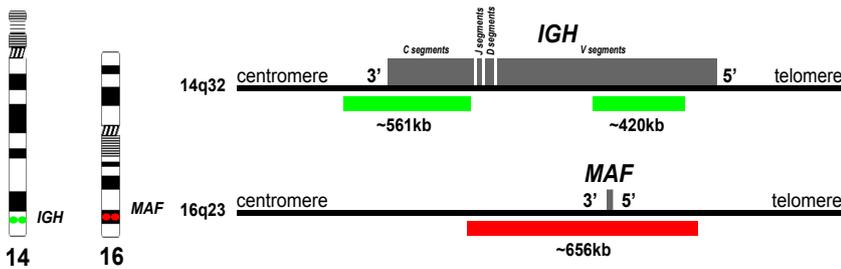
Schematic of the *IGH/MAF* DNA-FISH Probe:

Horizontal red and green bars indicate the regions covered by the probes (approximate to scale, GRCh37/Hg19/2009). The directly labeled *MAF* (red) probe spans the entire gene and the *IGH* (green) probe flanks the most common breakpoints within

Signal Interpretation

In normal diploid metaphase and interphase nucleus, two green and two red signals would be observed corresponding to the two normal homologous chromosomes 14 and 16, respectively (Figures 1 and 2). Upon translocation, the most commonly observed pattern is a single green and red signal, which represents the normal chromosomes 14 and 16, respectively, and two fusion signals (red/green or yellow), which represents the translocated chromosomes. It is recommended to confirm variant pattern or atypical signal patterns by metaphase analysis whenever possible.
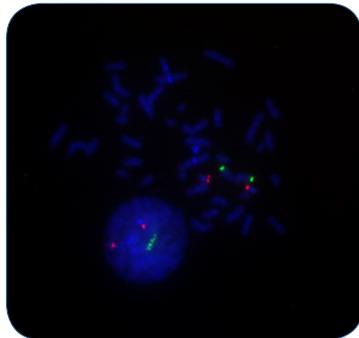

Figure 1: Normal diploid metaphase and interphase nucleus (from normal peripheral blood specimen) with 2 red (*MAF*) and 2 green (*IGH*) signals.
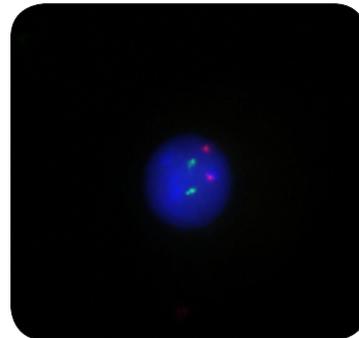

Figure 2: Normal diploid interphase nucleus (from bone marrow specimen) with 2 red (*MAF*) and 2 green (*IGH*) signals.

References

1. Chesi, M., et al., Blood, 1998. 91(2): p. 4457-63.
2. Kapoor, P., et al. Mayo Clin Proc, 2010. 85(6): p. 532-7.
3. Boyd, K.D., et al., Leukemia, 2012. 26: p. 349-55.

Fluorescence Microscopy Filter Requirements

Fluorophore	Excitation $_{max}$	Emission $_{max}$
Green	496 nm	520 nm
Red	580 nm	603 nm
DAPI	360 nm	460 nm

Instructions for use are available at www.cancergeneticsitalia.com

For *in vitro* diagnostic and professional use only.

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