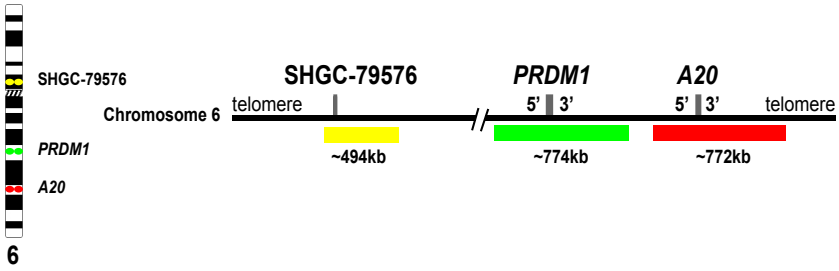
ITALIA
Empowering Personalized Cancer Treatment

A20/PRMD1/SHGC-79576 DNA-FISH Probe
Three Color, Enumeration Probe CE
Ref: 19-001

A20/PRDM1/
SHGC-79576

Intended Use

TThe *A20 (also called TNFAIP3)/PRDM1*/SHGC-79576 DNA-FISH Probe is designed to detect deletion of the *A20* gene located on 6q23 and the *PRDM1* gene located on 6q21 relative to the control locus SHGC-79576 on 6p12, using fluorescence *in situ* hybridization (FISH). Deletion of 6q is observed in all types of B-cell malignancies, where two commonly deleted regions map to the *A20* and *PRDM1* gene region.[1,2] Loss of the *A20* gene has been observed in ~20% of non-Hodgkin lymphoma (NHL) cases, ~20% of mucosa-associated lymphoid tissue (MALT) lymphoma cases[3] and in nonsplenic marginal zone lymphomas (MZLs) cases.[4] The loss of the *A20* gene has been observed most frequently in mantle cell lymphoma (MCL) and diffuse large B-cell lymphoma (DLBCL) cases with a frequency rate of 31% and 38%, respectively.[5] In DLBCL, inactivation of is seen more frequently in the activated B-cell (ABC) subtype of (50%) versus the germinal center B-cell (GCB) subtype (22%).[3,5,6] DLBCL cases exhibit a variety of complex 6q deletions, which encompasse either *A20* or *PRDM1* alone or together as part of a larger deletion.[2] Additionally, the deletion of the *PRDM1* gene has been observed in 53% of primary central nervous system lymphomas (PCNSLs).[7,8]



Schematic of the *A20/PRDM1*/SHGC-79576 DNA-FISH Probe:

Horizontal red, green, and gold bars indicate the regions covered by the probes (approximate to scale, GRCh37/Hg19/2009). The directly labeled *A20* (red) and *PRDM1* (green) span the respective genes and SHGC-79576 (gold) serves as a control.

Signal Interpretation

In normal diploid metaphase and interphase nucleus, two red, two green, and two gold signals would be observed corresponding to the two normal homologous chromosome 6 (Figures 1 and 2). Upon interstitial deletion of 6q23, in which the *A20* gene is deleted and the 6q21 (*PRDM1)* and 6p12 (SHGC-79576) loci remains, one red, two green, and two gold signals would be observed. However, upon interstitial deletion of 6q21, in which the *PRDM1* gene is deleted and the 6q23 (*A20)* and 6p12 (SHGC-79576) loci remains, two red, one green, and two gold signals would be observed. Upon deletion of an entire chromosome 6, a single red, green, and gold signal would be observed, which corresponds to the remaining chromosome 6. It is recommended to confirm variant pattern or atypical signal patterns by metaphase analysis whenever possible.

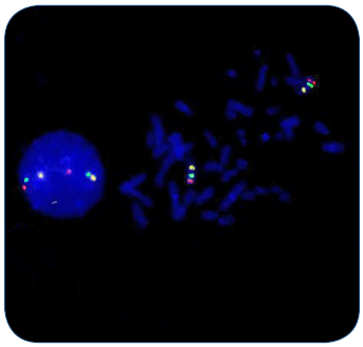


Figure 1: Normal diploid metaphase and interphase nucleus (from normal peripheral blood specimen) with 2 red (*A20*), 2 green (*PRDM1),* and 2 gold (SHGC-79576) signals.

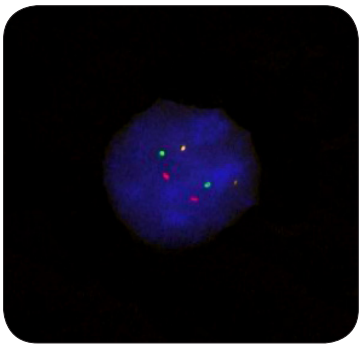


Figure 2: Normal diploid interphase nucleus (from bone marrow specimen) with 2 red (*A20*), 2 green (*PRDM1),* and 2 gold (SHGC-79576) signals.

References

1. Offit, K., et al. Blood, 1993. 82(7)L p. 1781-7.
2. Thelander, E. F., et al. Leuk Lymphoma, 2008. 49(3): p.477-87.
3. Kato, M., et al. Nature, 2009. 459(7247): p.712-6.
4. Novak, U., et al. Blood, 2009. 113(20): p.4918-21.
5. Compagno, M., et al., Nature, 2009. 459(7247): p. 717-21.
6. Lenz, G., et al. PNAS, 2008. 105(36): p.13520-5.
7. Schwindt, H., et al. Leukemia, 2009. 23(10): p.1875-84.

Fluorescence Microscopy Filter Requirements

Fluorophore	Excitation $_{max}$	Emission $_{max}$
Green	496 nm	520 nm
Red	593 nm	612 nm
Gold	525 nm	551 nm
DAPI	360 nm	460 nm

Instructions for use are available at www.cancergeneticsitalia.com

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