The ZytoLight ® SPEC BCL2 Dual Color Break Apart Probe is designed to detect translocations involving the chromosomal region 18q21.33 harboring the BCL2 gene. The BCL2 (B-cell CLL/lymphoma 2, a.k.a. PPP1R50) gene encodes a mitochondrial membrane protein that regulates apoptosis and is expressed in B-cells. Translocations involving the BCL2 gene are commonly identified in B-cell lymphomas. In particular, the translocation t(14;18)(q32.3;q21.3) has been identified in about 80% of follicular lymphoma (FL), in 20% to 30% of diffuse large B-cell lymphoma (DLBCL), and rarely in B-cell chronic lymphocytic leukemia (B-CLL).

In FL this translocation is considered to be a cytogenetic hallmark. As a result of this rearrangement, the BCL2 gene is juxtaposed to the IGH (Immunglobulin heavy chain) locus at 14q32.33 which leads to overexpression of the anti-apoptotic protein BCL2, and finally to progression to lymphoma.

Alternative BCL2 translocations to immunoglobulin light chain genes as well as non-IG translocation events have been reported.

In DLBCL, BCL2 gene overexpression has been implicated in conferring resistance to chemotherapy and has been associated with poor prognosis.

Hence, detection of BCL2 translocations by Fluorescence in situ Hybridization (FISH) may be of diagnostic and prognostic relevance.

References

Results
In an interphase nucleus lacking a translocation involving the 18q21.33-q22.1 band, two orange/green fusion signals are expected representing two normal (non-rearranged) 18q21.33-q22.1 loci. A signal pattern consisting of one orange/green fusion signal, one orange signal, and a separate green signal indicates one normal 18q21.33-q22.1 locus and one 18q21.33-q22.1 locus affected by a translocation.

Neck lymph node tissue section with translocation of the BCL2 gene as indicated by two non-rearranged orange/green fusion signals, one orange and one separate green signal indicating the translocation.

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* Using 10 µl probe solution per test only available in certain countries. All other countries research use only! Please contact your local dealer for more information.