ZytoDot® 2C SPEC MALT1 Break Apart Probe

CE IVD

Background

The ZytoDot® 2C SPEC MALT1 Break Apart Probe is designed to detect translocations involving the chromosomal region 18q21.32 harboring the MALT1 gene.
The MALT1 (mucosa associated lymphoid tissue lymphoma translocation gene 1, a.k.a. MLT) gene encodes a human paracaspase and is often rearranged in MALT lymphomas accounting for 5-10% of all B-cell non-Hodgkin lymphomas (NHL). The most common translocations affecting the MALT1 gene are t(11;18)(q22.2;q21.3) and t(14;18)(q32.3;q21.3) occurring in 50% and 15-20% of MALT lymphomas, respectively.
These translocations lead to the expression of BIRC3-MALT1 (a.k.a. API2-MALT1) and IGH-MALT1 fusion proteins, resulting in constitutive activation of the NF-κB signaling pathway which controls the expression of numerous anti-apoptotic and proliferation-promoting genes.
The translocation t(11;18)(q22.2;q21.3) is mainly found in pulmonary and gastric lymphomas, whereas t(14;18)(q32.3;q21.3) occurs more frequently in non-gastrointestinal MALT lymphomas, e.g., of the skin and salivary glands.
The presence of a t(11;18)(q22.2;q21.3) correlates with unresponsiveness to eradication of *Helicobacter pylori* in gastric MALT lymphomas. Hence, detection of MALT1 translocations by CISH may be a supportive tool to identify patients eligible for an anti-*H. pylori* therapy.

References
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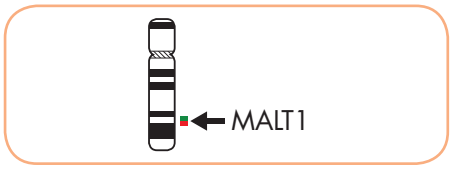
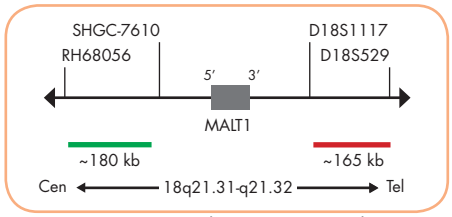
Beans M, et al. (2014) PLoS One 9: e103774.
Dierlamm J, et al. (1999) Blood 93: 3601-9.
Levine EG, et al. (1989) Blood 74: 1796-800.
Lucas PC, et al. (2001) J Biol Chem 276: 19012-9.
Martinelli G, et al. (2005) J Clin Oncol 23: 1979-83.
Pereira MI & Medeiros JA (2014) World J Gastroenterol 20: 684-98.
Troppan K, et al. (2015) Gastroenterol Res Pract 2015: 102656.

Probe Description

The ZytoDot® 2C SPEC MALT1 Break Apart Probe is a mixture of a Digoxigenin-labeled and a Dinitrophenyl-labeled probe hybridizing to the 18q21.31-q21.32 band. The DNP-labeled probe hybridizes distal to the MALT1 gene at 18q21.32, the DIG-labeled probe hybridizes proximal to the MALT1 gene at 18q21.31-q21.32.



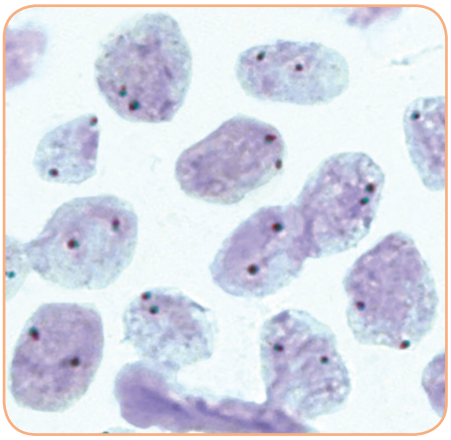
Ideogram of chromosome 18 indicating the hybridization locations.



SPEC MALT1 Probe map (not to scale).

Results

In an interphase nucleus of a normal cell lacking a translocation involving the 18q21.31-q21.32 band, using the ZytoDot® 2C CISH Implementation Kit, two red/green fusion signals are expected representing two normal (non-rearranged) 18q21.31-q21.32 loci. A signal pattern consisting of one red/green fusion signal, one red signal, and a separate green signal indicates one normal 18q21.31-q21.32 locus and one 18q21.31-q21.32 locus affected by a translocation.



SPEC MALT1 Break Apart Probe hybridized to normal interphase cells as indicated by two red/green fusion signals per nucleus.

Prod. No.	Product	Label	Tests* (Volume)
C-3072-100	ZytoDot 2C SPEC MALT1 Break Apart Probe CE IVD	Digoxigenin/DNP	10 (100 µl)
Related Products			
C-3044-10	ZytoDot 2C CISH Implementation Kit CE IVD Incl. Heat Pretreatment Solution EDTA, 150 ml; Pepsin Solution, 1ml; Wash Buffer SSC, 150 ml; 20x Wash Buffer TBS, 50 ml; Anti-DIG/DNP-Mix, 1 ml; HRP/AP-Polymer-Mix,1 ml; AP-Red Solution A, 0.1 ml; AP-Red Solution B, 4 ml; HRP-Green Solution A, 0.2 ml; HRP-Green Solution B, 4 ml; Nuclear Blue Solution, 4 ml; Mounting Solution (alcoholic), 1 ml		10

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

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