

ZytoDot® 2C SPEC USP6 Break Apart Probe



Background

The ZytoDot® 2C SPEC USP6 Break Apart Probe is designed to detect translocations involving the chromosomal region 17p13.2 harboring the USP6 (ubiquitin specific peptidase 6, a.k.a. Tre-2 or TRE17) gene.

Translocations affecting USP6 have been initially found in primary aneurysmal bone cysts (ABC), a benign, but locally aggressive bone lesion that occurs predominantly during the first two decades of life. USP6 rearrangements are restricted to spindle cells in primary ABC, indistinguishable from surrounding normal spindle cells. The resulting fusion genes detected are formed by juxtaposition of the USP6 coding sequences to the highly active promoter sequences of several partner genes, as e.g. CDH11, COL1A1, OMD, TRAP150, and ZNF9, leading to the transcriptional upregulation of USP6. No true fusion genes are formed.

More recently, nodular fasciitis (NF), another mesenchymal lesion, has been tested positive for USP6 rearrangements. NF is a subcutaneous pseudosarcomatous myofibroblastic proliferation of unknown pathogenesis that regresses spontaneously when not surgically resected. The translocation results in the fusion of the promoter region of MYH9 located on 22q12.3 to the entire coding sequence of USP6 and subsequently in upregulated USP6 expression.

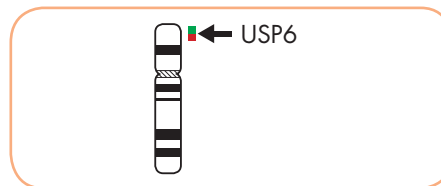
For both lesions, it is assumed that the detection of USP6 rearrangements by CISH might represent a valuable diagnostic tool.

References

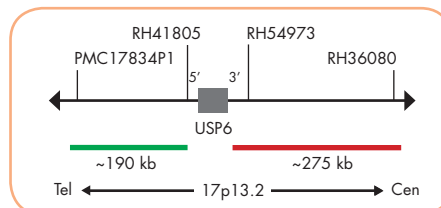
- Erickson-Johnson MR, et al. (2011) Lab Invest 91: 1427-33.
- Nakamura T, et al. (1988) Oncogene Res 2: 357-70.
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Probe Description

The ZytoDot® 2C SPEC USP6 Break Apart Probe is a mixture of a Digoxigenin-labeled and a Dinitrophenyl-labeled probe hybridizing to the 17p13.2 band. The DNP-labeled probe hybridizes proximal to the USP6 breakpoint region at 17p13.2, the DIG-labeled probe hybridizes distal to the USP6 breakpoint region.



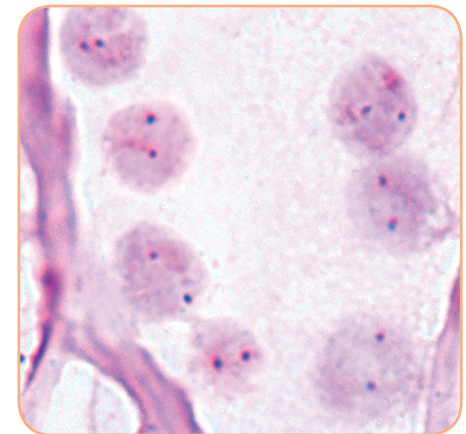
Ideogram of chromosome 17 indicating the hybridization locations.



SPEC USP6 Probe map (not to scale).

Results

In an interphase nucleus of a normal cell lacking a translocation involving the 17p13.2 band, using the ZytoDot® 2C CISH Implementation Kit, two red/green fusion signals are expected representing two normal (non-rearranged) 17p13.2 loci. A signal pattern consisting of one red/green fusion signal, one red signal, and a separate green signal indicates one normal 17p13.2 locus and one 17p13.2 locus affected by a translocation.



SPEC USP6 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-3077-100	ZytoDot 2C SPEC USP6 Break Apart Probe CE IVD	DIG/DNP	10 (100 µl)
Related Products			
C-3044-10	ZytoDot 2C CISH Implementation Kit CE IVD		10
<small>Incl. Heat Pretreatment Solution EDTA, 150 ml; Pepsin Solution, 1 ml; Wash Buffer SSC, 210 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</small>			

* 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.