

ZytoDot® 2C SPEC FOXO1 Break Apart Probe

Background

The ZytoDot® 2C SPEC FOXO1 Break Apart Probe is designed for the detection of specific translocations involving the chromosomal region 13q14.11 harboring the FOXO1 (forkhead box O1, a.k.a. FKHR) gene characteristic for alveolar rhabdomyosarcoma.

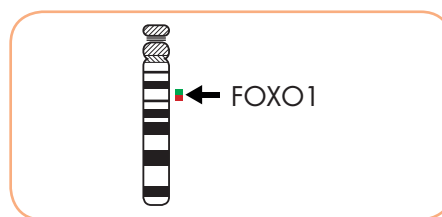
Among solid tumors of the childhood, rhabdomyosarcoma (RMS) is the most common soft tissue sarcoma. RMS are classified in two main categories: embryonal rhabdomyosarcoma (ERMS) and alveolar rhabdomyosarcoma (ARMS). The alveolar histology is associated with a poorer prognosis. ARMS is characterized by two tumor-specific reciprocal translocations t(2;13)(q36;q14.1) and t(1;13)(p36.1;q14.1) detectable in more than 80% of all ARMS. These translocations fuse the FOXO1 locus on 13q14.11 to either PAX3 on chromosome 2 or to PAX7 on chromosome 1. The resulting fusion transcripts encode for the chimeric proteins PAX3-FOXO1 and PAX7-FOXO1 that combine transcriptional domains from the corresponding wild-type proteins and thereby acquire oncogenic activity. The translocations and their fusion genes represent highly specific genetic markers useful in the diagnosis of ARMS.

References

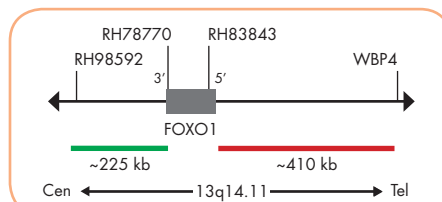
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Probe Description

The ZytoDot® 2C SPEC FOXO1 Break Apart Probe is a mixture of a Digoxigenin-labeled and a Dinitrophenyl-labeled probe hybridizing to the 13q14.11 band. The DNP-labeled probe hybridizes distal to the FOXO1 gene breakpoint region at 13q14.11, the DIG-labeled probe hybridizes proximal to the FOXO1 gene breakpoint region.



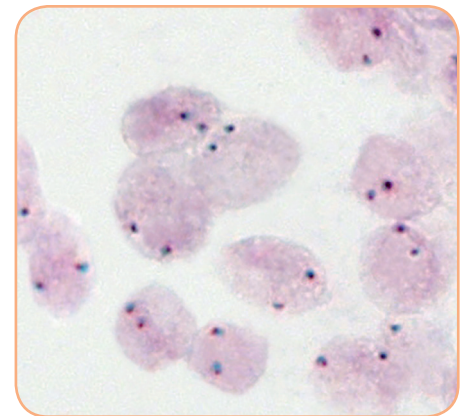
Ideogram of chromosome 13 indicating the hybridization locations.



SPEC FOXO1 Probe map (not to scale).

Results

In an interphase nucleus of a normal cell lacking a translocation involving the 13q14.11 band, using the ZytoDot® 2C CISH Implementation Kit, two red/green fusion signals are expected representing two normal (non-rearranged) 13q14.11 loci. A signal pattern consisting of one red/green fusion signal, one red signal, and a separate green signal indicates one normal 13q14.11 locus and one 13q14.11 locus affected by a translocation.



SPEC FOXO1 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-3065-100	ZytoDot 2C SPEC FOXO1 Break Apart Probe CE IVD	Digoxigenin/DNP	10 (100 µl)

Related Products

C-3044-10	ZytoDot 2C CISH Implementation Kit CE IVD		10
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Incl. Heat Pretreatment Solution EDTA, 150 ml; Pepsin Solution, 1 ml; 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

* 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.