

ZytoLight® SPEC CIC Dual Color Break Apart Probe



Background

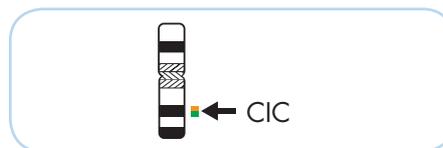
The *ZytoLight*® SPEC CIC Dual Color Break Apart Probe is designed to detect translocations involving the chromosomal region 19q13.2 harboring the CIC (capicua transcriptional repressor, a.k.a. KIAA0306) gene. The CIC gene encodes a transcriptional repressor that inhibits the expression of the PEA3 (polyoma enhancer activator 3) gene family, including ETV1, ETV4, and ETV5 and regulates receptor tyrosine kinase signaling pathways. Rearrangements involving the CIC gene are frequently found in EWSR1-negative small blue round cell tumors (SBRCT) which arise in soft tissues of children and young adults and have been described as aggressive tumors with an inferior overall survival compared to Ewing sarcoma (EWS). The CIC-DUX4 (double homeobox 4) gene fusion is the most frequent genetic event in EWSR1-negative SBRCT resulting from either a t(4;19)(q35;q13.2) or a t(10;19)(q26.3;q13.2). CIC rearrangements have also been found in other tumor entities such as lung cancer and medulloblastomas and other fusion partners besides DUX4 are known (FOXO4, LEUTX). As CIC-DUX4-positive patients do not respond well to the common forms of EWS treatment, and show a poor overall survival, novel therapy approaches are needed to treat this type of aggressive tumors. Hence, the detection of CIC translocations by Fluorescence *in situ* Hybridization (FISH) may be of prognostic and therapeutic relevance.

References

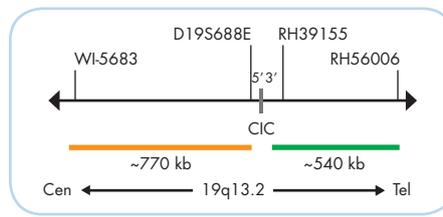
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Probe Description

The SPEC CIC Dual Color Break Apart Probe is a mixture of two direct labeled probes hybridizing to the 19q13.2 band. The orange fluorochrome direct labeled probe hybridizes proximal and the green fluorochrome direct labeled probe hybridizes distal to the CIC gene.



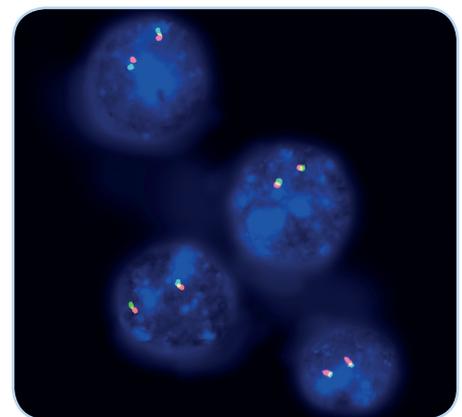
Ideogram of chromosome 19 indicating the hybridization locations.



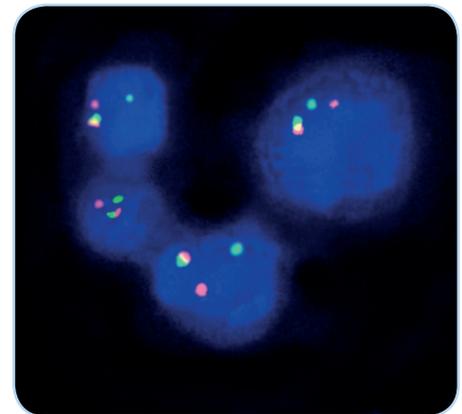
SPEC CIC Probe map (not to scale).

Results

In an interphase nucleus lacking a translocation involving the 19q13.2 band, two orange/green fusion signals are expected representing two normal (non-rearranged) 19q13.2 loci. A signal pattern consisting of one orange/green fusion signal, one orange signal, and a separate green signal indicates one normal 19q13.2 locus and one 19q13.2 locus affected by a translocation.



SPEC CIC Dual Color Break Apart Probe hybridized to normal interphase cells as indicated by two orange/green fusion signals per nucleus.



Undifferentiated round cell sarcoma 'Ewing-like' tissue section with translocation of the 19q13.2 locus as indicated by one non-rearranged orange/green fusion signal, one orange and one separate green signal.

Prod. No.	Product	Label	Tests* (Volume)
Z-2285-50	ZytoLight SPEC CIC Dual Color Break Apart Probe CE IVD	●/●	5 (50 µl)
Related Products			
Z-2028-5	ZytoLight FISH-Tissue Implementation Kit CE IVD		5
Incl. Heat Pretreatment Solution Citric, 150 ml; Pepsin Solution, 1 ml; Wash Buffer SSC, 210 ml; 25x Wash Buffer A, 50 ml; DAPI/DuraTect-Solution, 0.2 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.