

Product Data Sheet

10Q11 (RET-BA) FISH Probe

Catalog #'s: F-RET-Proximal (Red), F-RET-Distal (Green)

Gene Information:

RET is a cell surface receptor tyrosine kinase regulating cell proliferation, neuronal navigation, cell migration, and cell differentiation. RET is a proto-oncogene that can be activated by cytogenetic rearrangement with various partners.

Clinical Relevance:

Papillary Thyroid Carcinoma (RET-PTC): Rearrangement of the 3' tyrosine kinase portion of RET to the 5' end of heterologous genes results in a chimeric oncogene. The constitutively active RET is placed under control of promoters normally expressed in follicular thyroid cells. This is in contrast to wild type RET which is not normally expressed in these cells. Researchers have shown that clonal or sporadic presence of RET rearrangements in follicular cells can distinguish between malignant and benign nodules. The constitutive activation and ectopic expression of RET is found in approximately 20% of PTC.

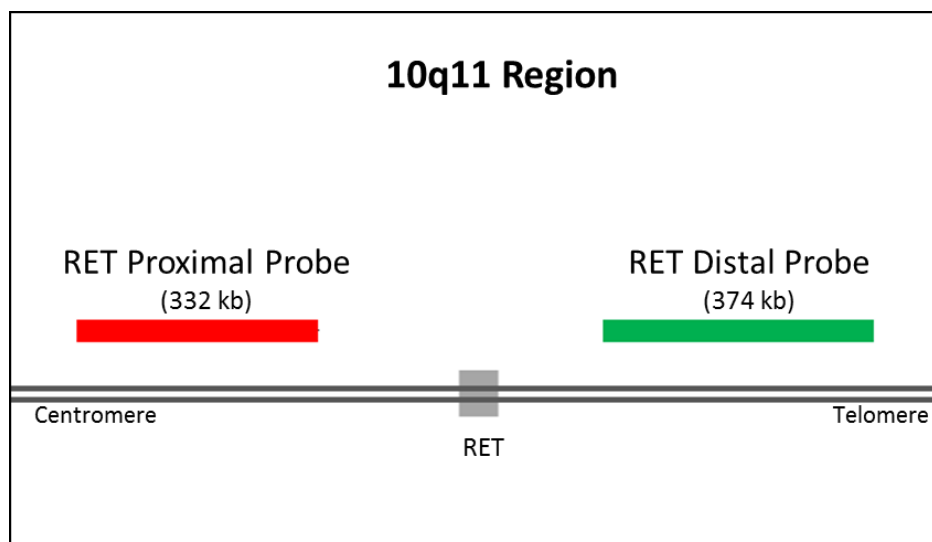
Probe Specifications:

Probe and target gene boundaries are indicated in relation to proximity to the centromere or telomere. Positions are based on UCSC genome assembly GRCh37/hg19.

Locus	Target			Probe			
	Gene	Centromere	Telomere	Probe	Centromere	Telomere	Size (Kb)
10q11	RET	43,572,517	43,625,797	RET Distal	43,769,327	44,142,881	374
				RET Proximal	43,046,963	43,378,668	332

For Investigational Use Only. The performance characteristics of this product have not been established.

Probe Map:



Product Contents:

All individual or FISH probe cocktails are provided ready to use in hybridization buffer and can be blended with up to 4 total probes. Blocking DNA is included to suppress non-specific binding to similar sequences outside of the indicated binding sites. Researchers are advised to optimize slide processing and hybridization conditions.

Volume: 250 μ l
 Reactions: 50 (5 μ l/ reaction)

Product Colors:

The RET-BA probes are designed to yield a yellow color when the RET gene is not split, and individual red or green signals when split.

Probe	Color	Dye	Absorbance	Emission
RET-Proximal	Red	Alexa594	590	615
RET-Distal	Green	Alexa488	495	519

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Storage:

Store at -20°C
Protect from direct light.

References:

1. Caria P, Vanni R. Cytogenetic and molecular events in adenoma and well-differentiated thyroid follicular-cell neoplasia. *Cancer Genet Cytogenet.* 2010 Nov;203(1):21-9. doi: 10.1016/j.cancergencyto.2010.08.025. Review. PubMed PMID: 20951315.
2. Caria P, Dettori T, Frau DV, Borghero A, Cappai A, Riola A, Lai ML, Boi F, Calò P, Nicolosi A, Mariotti S, Vanni R. Assessing RET/PTC in thyroid nodule fine-needle aspirates: the FISH point of view. *Endocr Relat Cancer.* 2013 Jun 27;20(4):527-36. doi: 10.1530/ERC-13-0157. Print 2013 Aug. PubMed PMID: 23722226.