Kreatech™ FISH probes

Product Information Sheet

KBI-10753

RET (10q11) Break

IVD

DANGER

FORMAMIDE

2°C 8°C

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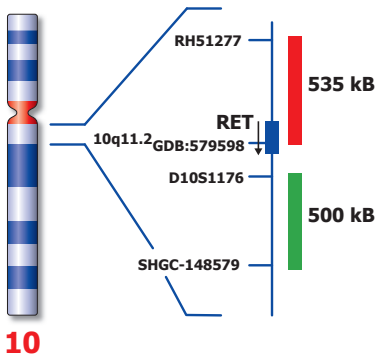

Not to scale

KBI-10753

Kreatech™ RET (10q11) Break FISH probe

Introduction:

Pericentric inversion of chromosome 10 involving the **RET** (ret proto-oncogene) gene at chromosome 10q11 is known to increase expression of the RET gene by fusion with KIF5B (10p11). Translocations with other fusion partners have also been described. Elevated expression of RET is observed in non-small cell lung cancer (NSCLC), in which the function of tyrosine kinase-based therapeutics is based upon the inhibition of such fusion proteins. Translocations involving RET have also been described in thyroid carcinomas.

Intended use:

The **RET (10q11) Break** FISH probe is optimized to detect translocations involving the RET gene region at the 10q11 locus in a dual-color assay on formalin-fixed paraffin-embedded tissue samples.

The probe is recommended to be used in combination with one of the Kreatech Pretreatment kits providing necessary reagents to perform FISH on various sample types for optimal results. (see also www.LeicaBiosystems.com and look for Kits & reagents)

Critical region 1 (red): The region proximal to **RET (10q11)** is direct-labeled with Platinum*Bright*™550.
Critical region 2 (green): The region distal to **RET (10q11)** is direct-labeled with Platinum*Bright*™495.

Reagent:

Kreatech probes are direct-labeled DNA probes provided in a ready-to-use format.
Apply 10 µl of probe to a sample area of approximately 22 x 22 mm.

Please refer to the Instructions for Use for the entire Kreatech FISH protocol.

Kreatech FISH probes are REPEAT-FREE™ and therefore do not contain Cot-1 DNA. Hybridization efficiency is increased and background, due to unspecific binding, is highly reduced.

Interpretation:

The **RET (10q11) Break** FISH probe is designed as a dual color probe to detect rearranged chromosomes 10. A split or break is defined as a green/red or yellow fusion signals (F) splitting into separate red (R) and green (G) signals. Only signals which are more than one signal diameter apart from each other are counted as a break. Two co-localized green/red or yellow fusion signals identify the normal chromosome(s) 10.

	Normal Signal Pattern	RET translocation
Expected Signals	2F	1F1R1G*

***) Note:** Some of the currently known fusion partners are located relatively close to the RET gene. For instance, the pericentric inversion inv(10)(p11;q11) described in lung adenocarcinomas will result in a distance of ~11 Mb, while inversions involving RET and NCOA4, and RET and CCDC6 will result in distances of ~8 MB and ~20 MB, respectively. As a result, the separate R and G signals may be located less than one signal diameter apart, possibly resulting in increased numbers of false negatives. Therefore, it is recommended to carefully define cut-off specifications in your setting.
Signal patterns other than those described above may indicate variant translocations, deletions or amplifications on der(10) or other complex rearrangements.

References:

Chen et al., Cancer Genet Cytogenet, 2007, 178: 128-134
Kohno et al., Nat Med, 2012, 18: 375-377
Takeuchi et al., Nat Med, 2012, 18: 378-381

Warning and precautions: In case of emergencies check SDS sheets for medical advice. SDS sheets may be obtained by either contacting Leica Technical Support or visiting www.LeicaBiosystems.com. DNA probes contain formamide which is a teratogen; do not inhale or allow skin contact. Wear gloves and a lab coat when handling DNA probes. All materials should be disposed of according to your institution's guidelines for hospital waste disposal.

Reagent Storage and Handling:

Store at 2-8 °C. Reagents should not be used after the expiration date on the vial label.

TECHNICAL SUPPORT

Technical support is available at www.LeicaBiosystems.com or +31 20 6919181
or via e-mail: kreatech-support@leicabiosystems.com.

CUSTOMER SERVICE

Kreatech probes may be ordered through Leica Customer Service +31 20 6919181 or order via e-mail: purchase.orders@leica-microsystems.com.