

Product Data Sheet

Barrett's FISH (Brushings) Probe Cocktails

Catalog#'s: P-F-003, P-F-004

Product Contents:

This Product insert covers two independent FISH probe cocktails, "Barrett's FISH Probe Cocktail Mix A" and "Barrett's FISH Probe Cocktail Mix B". These FISH probes are intended for use with esophageal brushing samples. For solid tumor samples, please see "**Barrett's FISH (Solid Tumor) Probe Cocktails**". The Barrett's FISH Probe Cocktails are provided ready to use in hybridization buffer. 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: 250µl
 Reactions: 50 (5µl/ reaction)

Included FISH Probes:

The following table indicates each of the individual FISH probes and associated colors included in the "Barrett's FISH Probe Cocktail Mix A".

| Gene | Locus | Color | Dye | Absorbance | Emission |
|--------------|-------|--------|----------|------------|----------|
| CDKN2A | 9p21 | Yellow | Alexa532 | 532 | 554 |
| ERBB2 (HER2) | 17q12 | Green | Alexa488 | 495 | 519 |
| CEN7 | D7Z1 | Aqua | DEAC | 432 | 472 |

The following table indicates each of the individual FISH probes and associated colors included in the "Barrett's FISH Probe Cocktail Mix B".

| Gene | Locus | Color | Dye | Absorbance | Emission |
|--------|-------|-------|----------|------------|----------|
| MYC | 8q24 | Green | Alexa488 | 495 | 519 |
| ZNF217 | 20q13 | Red | Alexa594 | 590 | 615 |
| CEN7 | D7Z1 | Aqua | DEAC | 432 | 472 |

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

Clinical Relevance:

Studies have shown that copy number increases in ERBB2 (17q12), MYC (8q24), or ZNF217 (20q13) are associated with high grade dysplasia/ adenocarcinoma while copy number decrease of the 9p21 locus is associated with low or high grade dysplasia. Additional studies have shown that patients with a histologic response to photodynamic therapy (the absence of high grade dysplasia) who have copy number increases in either ERBB2, MYC, ZNF217 or copy number decrease in 9p21 appear to be a higher risk of developing recurrent high grade dysplasia.

ERBB2 (17q12): Copy number increase is associated with high grade dysplasia/ adenocarcinoma and increased risk of recurrence.

MYC (8q24): Copy number increase is associated with high grade dysplasia/ adenocarcinoma and increased risk of recurrence.

ZNF217 (20q13): Copy number increase is associated with high grade dysplasia/ adenocarcinoma and increased risk of recurrence.

P16 (9p21): Copy number decrease is associated with high grade dysplasia/ adenocarcinoma and increased risk of recurrence.

Probe Specifications:

Centromere Specific Probe Specifications:

Each of the centromere specific probes target the α -satellite region of the centromere specific for the indicated chromosome.

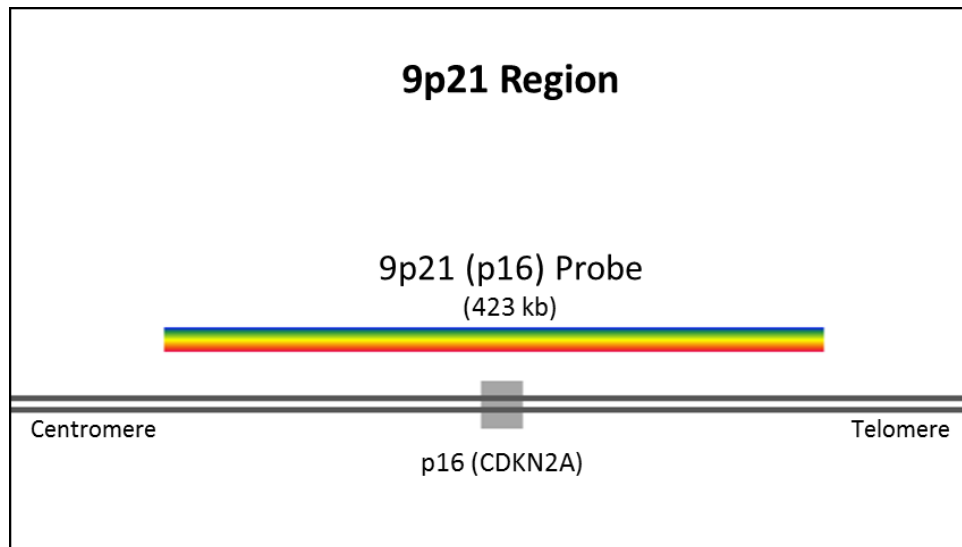
Locus Specific Probes:

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.

CDKN2A (9p21) Probe Specifications:

| Locus | Target | | | Probe | | |
|-------|--------------|------------|------------|------------|------------|-----------|
| | Gene | Centromere | Telomere | Centromere | Telomere | Size (Kb) |
| 9p21 | p16 (CDKN2A) | 21,967,751 | 21,994,490 | 21,764,403 | 22,187,312 | 423 |

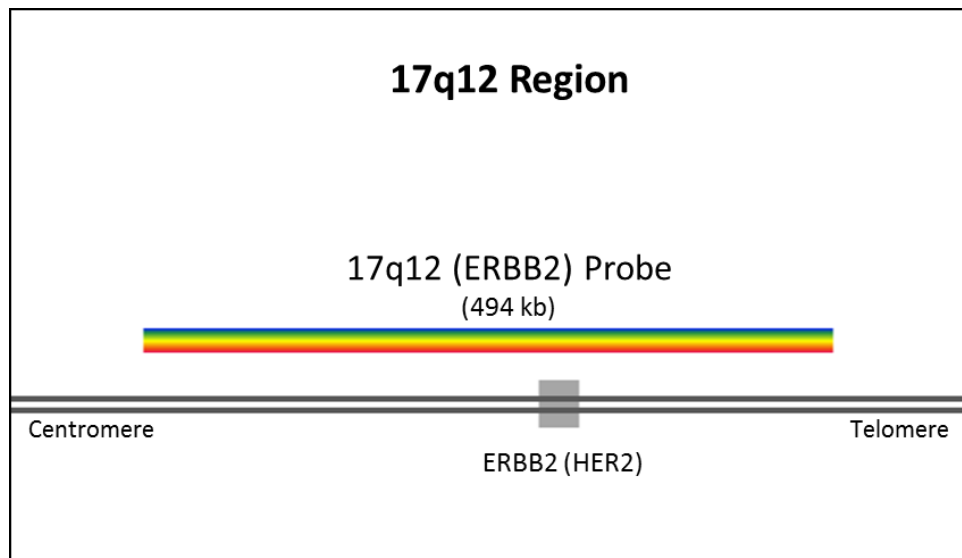
Probe Map:



ERBB2 (HER2) (17q12) Probe Specifications:

| Locus | Target | | | Probe | | |
|-------|--------------|------------|------------|------------|------------|-----------|
| | Gene | Centromere | Telomere | Centromere | Telomere | Size (Kb) |
| 17q12 | ERBB2 (HER2) | 37,856,254 | 37,884,915 | 37,572,511 | 38,066,611 | 494 |

Probe Map:

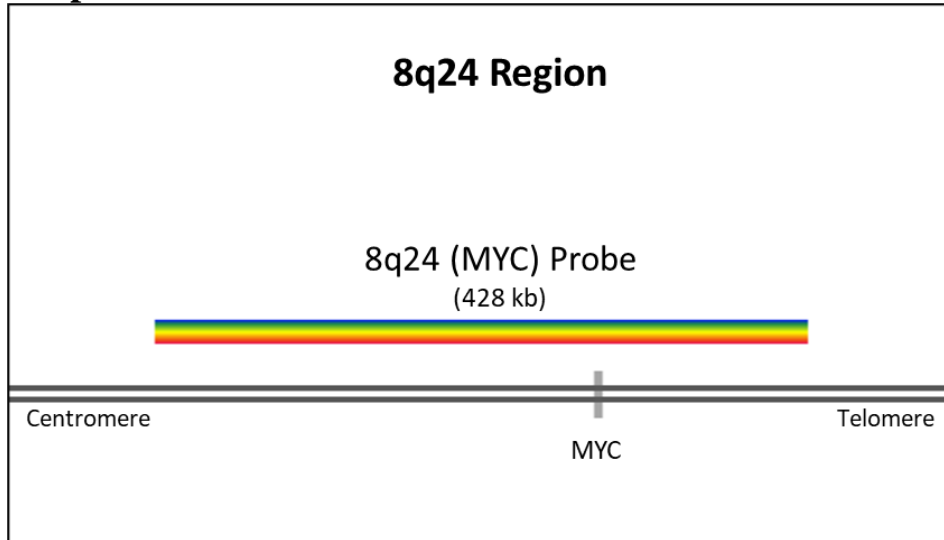


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MYC (8q24) Probe Specifications:

| Locus | Target | | | Probe | | |
|-------|--------|-------------|-------------|-------------|-------------|-----------|
| | Gene | Centromere | Telomere | Centromere | Telomere | Size (Kb) |
| 8q24 | MYC | 128,748,315 | 128,753,680 | 128,459,594 | 128,887,949 | 428 |

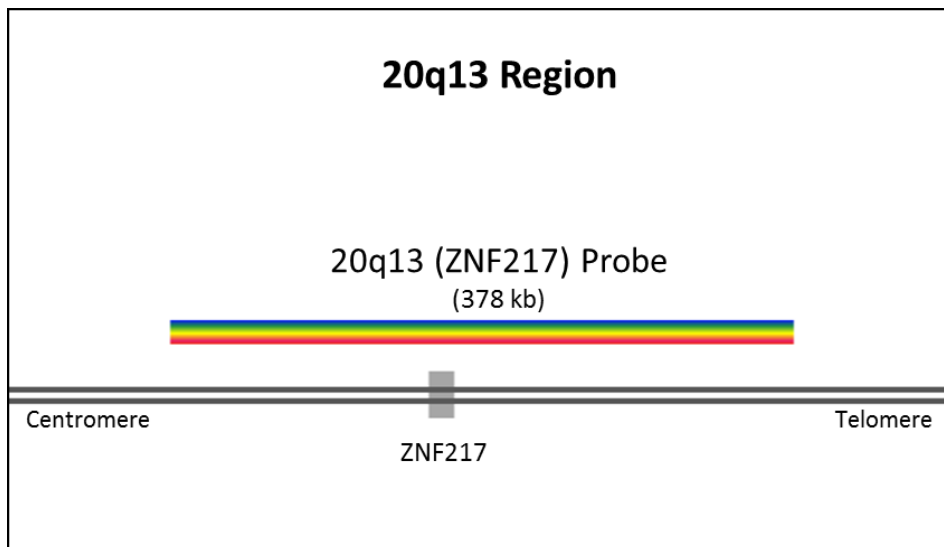
Probe Map:



ZNF217 (20q13) Probe Specifications:

| Locus | Target | | | Probe | | |
|-------|--------|------------|------------|------------|------------|-----------|
| | Gene | Centromere | Telomere | Centromere | Telomere | Size (Kb) |
| 20q13 | ZNF217 | 52,183,610 | 52,199,636 | 52,026,197 | 52,404,557 | 378 |

Probe Map:



Storage:

Store at +4°C to -20°C
Protect from direct light.

References:

1. Prasad GA, Wang KK, Halling KC, Buttar NS, Wongkeesong LM, Zinsmeister AR, Brankley SM, Westra WM, Lutzke LS, Borkenhagen LS, Dunagan K.: Correlation of histology with biomarker status after photodynamic therapy in Barrett esophagus. *Cancer*. 2008 Aug 1;113(3):470-6.
2. Brankley SM, Wang KK, Harwood AR, Miller DV, Legator MS, Lutzke LS, Kipp BR, Morrison LE, Halling KC.: The development of a fluorescence in situ hybridization assay for the detection of dysplasia and adenocarcinoma in Barrett's esophagus. *J Mol Diagn*. 2006 May;8(2):260-7.