
Product Data Sheet
10q23 (PTEN) FISH Probe
Catalog#: F-PTEN-(G,R,A,Y,D)

Gene Information:

PTEN functions as a tumor suppressor by negatively regulating the PI3K-AKT/PKB signaling pathway by dephosphorylating phosphoinositides and thereby inhibiting cell cycle progression and cell survival.

Clinical Relevance:

Prostate Cancer: PTEN deletion is associated with tumor progression and predictive of shorter time to recurrence.¹ Additional studies have identified three patient groups based on the ERG and PTEN biomarkers: (1) ‘poor genomic grade’ characterized by both PTEN deletion and TMPRSS2:ERG fusions; (2) ‘intermediate genomic grade’ with either PTEN deletion or TMPRSS2:ERG fusion, and (3) ‘favorable genomic grade’ in which neither rearrangement was present.²

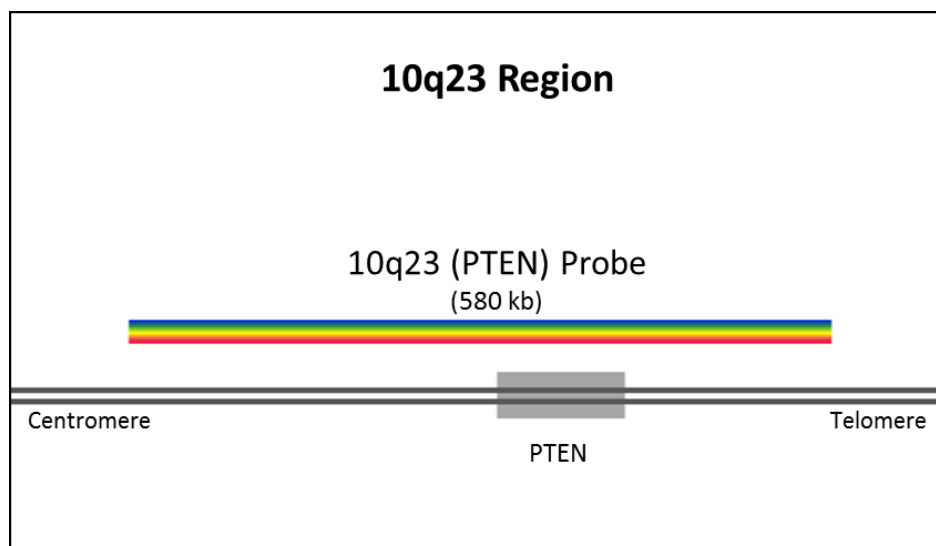
Glioblastoma: Research has shown that PTEN homozygous deletion is associated with shorter survival.³

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	Centromere	Telomere	Size (Kb)
10q23	PTEN	89,623,195	89,728,532	89,318,871	89,898,644	580

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: 250µl
 Reactions: 50 (5µl/ reaction)

Product Options:

All FISH probes are available in 5 standard color options (Red, Gold, Yellow, Green, and Aqua). Alternative custom color options are available.

Color	Dye	Absorbance	Emission	Ordering Code Extension
Red	Alexa594	590	615	R
Gold	Alexa555	555	565	D
Yellow	Alexa532	532	554	Y
Green	Alexa488	495	519	G
Aqua	DEAC	432	472	A

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

Storage:

Store at -20°C
Protect from direct light.

References:

1. Yoshimoto M, Cunha IW, Coudry RA, Fonseca FP, Torres CH, Soares FA, Squire JA. FISH analysis of 107 prostate cancers shows that PTEN genomic deletion is associated with poor clinical outcome. *Br J Cancer*. 2007 Sep 3;97(5):678-85. Epub 2007 Aug 14. PubMed PMID: 17700571; PubMed Central PMCID: PMC2360375.
2. Yoshimoto M, Joshua AM, Cunha IW, Coudry RA, Fonseca FP, Ludkovski O, Zielenska M, Soares FA, Squire JA. Absence of TMPRSS2:ERG fusions and PTEN losses in prostate cancer is associated with a favorable outcome. *Mod Pathol*. 2008 Dec;21(12):1451-60. doi: 10.1038/modpathol.2008.96. Epub 2008 May 23. PubMed PMID: 18500259.
3. Srividya MR, Thota B, Shailaja BC, Arivazhagan A, Thennarasu K, Chandramouli BA, Hegde AS, Santosh V. Homozygous 10q23/PTEN deletion and its impact on outcome in glioblastoma: a prospective translational study on a uniformly treated cohort of adult patients. *Neuropathology*. 2011 Aug;31(4):376-83. doi:10.1111/j.1440-1789.2010.01178.x. Epub 2010 Dec 6. PubMed PMID: 21134002.