Prostate Cancer (PC) and **Benign Prostatic Hyperplasia (BPH) Differentiation** by New miRNA Biomarker Panel

Ready-to-Use fully optimized **SSNA** miRNA *in situ* hybridization (ISH) Kit

Prostate cancer and benign prostatic hyperplasia (BPH) remain the most prevalent urologic health concerns affecting elderly men in their lifetime. They are considered chronic diseases with early initiation and slow progression. Both diseases arise in different areas of the prostate, with BPH known to develop in the transitional and the central zones and prostate cancer in the peripheral zone. Early differential diagnosis between prostate cancer and BPH is very important for patient clinical evaluation, and for a safe and effective treatment. Although several techniques for diagnosing prostate cancer have evolved over the past decades, lack of specificity and sensitivity of these diagnostic tools hinder their application in clinical practice. Additionally, the existing methods to utilize serum prostate-specific antigen (PSA) does not provide enhanced survival rates nor do these techniques offer absolute results for the differentiation of prostate cancer and BPH. Accumulating evidence suggests that aberrant expressions of microRNAs (miRNAs) are involved in the development of prostate cancer. BioGenex Super Sensitive Nucleic Acid microRNA *in situ* hybridization (SSNA miRNA ISH) probes can help identify expression of specific miRNAs that could be used for the differentiation of prostate cancer and BPH, leading to better treatment outcomes.

Application:

BioGenex end-to-end miRNA solution including Xmatrx® automated systems and miRNA ISH Probes were used for differentiation of prostate cancer and BPH. Study samples consisted of different grades of prostate cancer, including paired normal prostate and BPH. Nuclear staining was evaluated semi-quantitatively by intensity as negative, weak, moderate, or intense. The *in situ* experimental conditions for hybridization were optimized for both manual and automated systems.

Read more about the study in the corresponding application note: 937-4118.0

BioGenex SSNA miRNA ISH Probe Panel for Differentation of Prostate Cancer and BPH

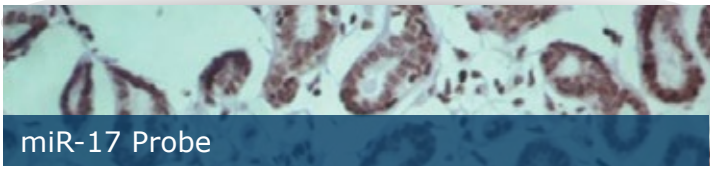
Target miRNA	**miR-125b**	**miR-17**
Catalog no (25 test)	HM125B-100	HM017-100
Control slides (5 slides)	FB-HM125B	FB-HM017

BioGenex miRNA Detection kit and Ancillary Reagents

Catalog	**Product name**
DF400-YADE	XISH™ One-Step Polymer-HRP ISH Detection Kit (Automation)
DF400-50KE	Super Sensitive One-Step Polymer-HRP ISH Detection Kit (Manual)

BioGenex proprietary **Super Sensitive Nucleic Acid (SSNA)** miRNA probes are specially designed for *in situ* hybridization of tissue samples. BioGenex miRNA probes have high melting temperatures (T_m) and are dual-end labeled. Together with BioGenex Super Sensitive Detection kits result in a clean and intense stain for localized visualization of key miRNA signal biomarkers.

Prostate ISH Probes:



miR-17 Probe

miR-17-92 is a polycistronic microRNA cluster that contains multiple microRNA components, each of which has a potential to regulate hundreds of target mRNAs.

miR-125b

miR-125b decreases cell proliferation by inducing G2/M cell cycle arrest and reduce anchorage-independent cell growth of cells of mammary origin.

BioGenex Platforms for miRNA ISH Workflow:

Xmatrx® Ultra
Fully Automated System
for high throughput labs

Xmatrx® NANO VIP
Fully Automated System
for medium throughput labs

Xmatrx® MINI
Manual System for medium
and small throughput labs

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