



Glioma Prognostic Subtyping - **Astrocytoma, Oligodendroglioma, Meningioma,** and **Glioblastoma** using New miRNA Biomarker Panel

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

The 5-year survival rate for people with a cancerous brain or CNS tumor is approximately 34% for men and 36% for women. However, survival rates vary widely and depend on several factors, including the type of brain or spinal cord tumor. Among brain tumor types, gliomas are the most aggressive and make up approximately 80% of malignant species. The subtypes of gliomas include high-grade astrocytomas, oligodendrocytes, and ependymomas. Of the several molecular techniques used to distinguish the subtypes, microRNA *in situ* hybridization (miRNA ISH) is promising. Detection and localization of altered miRNA expression levels provide invaluable insights into cancer pathogenesis, including subtyping of cancer tissues and tumor grading.

Application:

BioGenex Xmatrix® automated systems and miRNA ISH Brain panel probes were used to successfully classify and grade complex gliomas subtypes. This novel assay used a sample cohort of 35 FFPE tissues and 30 gliomas of varying grades and types. Using the BioGenex end-to-end miRNA solution the tissues were classified and graded.

Read more about the study in the corresponding application note: [937-4097.0](#)

BioGenex miRNA ISH Brain Cancer Probe Panel

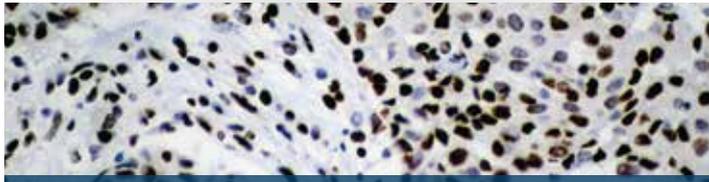
Target miRNA	miR-21	miR-10b	miR-96	miR-146b
Catalog No (25 test)	HM021-3P-100	HM010B-100	HM096-100	HM146B-100
Control slides (5 slides)	FB-HM021-3P	FB-HM010B	FB-HM096	FB-HM146B

BioGenex miRNA Detection Kits and Ancillary Reagents

Catalog	Product name
DF400-YADE	XISH™ One-Step Polymer-HRP ISH Detection Kit (Automation)
DF400-25KE/50KE	Super Sensitive One-Step Polymer-HRP ISH Detection Kit (Manual)
HK873-5K	Nucleic Acid Retrieval Solution 1 (NAR-1)

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.

Brain ISH Probes:



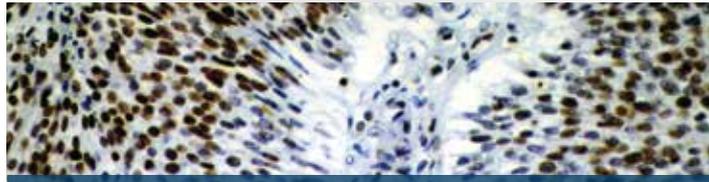
miR-21-3P Probe

miR-21-3p has been shown to directly reduce the expression of two methionine adenosyltransferase genes by targeting their 3'-UTRs. The overexpression of miR-21-3p increases intracellular S-adenosylmethionine.



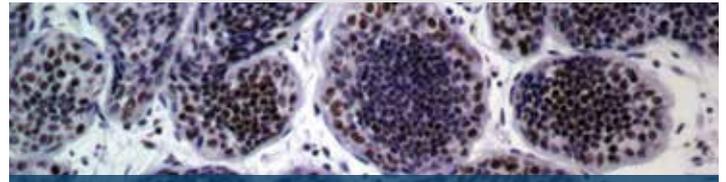
miR-10b Probe

miR-10b has been identified as a target gene of transforming growth factor- β (TGF- β 1), which is a multifunctional cytokine that induces EMT in multiple cell types.



miR-96

miR-96 expression decreases the transcript and protein levels of FOXO1 by binding to one of two predicted binding sites in the FOXO1 3'-UTR sequence.



miR-146b

The expression of miR-146b-5p is known to be dysregulated in solid tumors and acts either as a tumor suppressor or promoter.

BioGenex Platforms for miRNA ISH Workflow:



Xmatrix[®]ELITE

Fully Automated System
for high throughput labs



NanoVIP[®]300

Fully Automated System
for medium throughput labs



NanoVIP[®]

Fully Automated System
for medium throughput labs



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