

# Central Nervous System Tumor Biomarkers<sup>1</sup>

An estimated 24,820 adults and children in the United States will be diagnosed with malignant tumors of the brain and spinal cord in 2025. Primary brain tumors account for 85-90% of all Primary Central Nervous System (CNS) Tumors.

Labcorp Oncology offers a comprehensive menu for neuro-oncology, supporting you and your patients through every step of the diagnostic and treatment journey.

**Biomarker assays play important roles in the classification of CNS tumors, providing prognostic information and helping to guide treatment strategy.** Labcorp Oncology is built on the knowledge and experience of hundreds of dedicated oncology staff specialized in solid tumors and a full complement of board-certified pathologists, clinical molecular geneticists and cytogeneticists.

## Biomarkers used in the assessment of CNS tumors

Gene/Marker	Detect (based on methodology's detection technique)	Single-Gene Mutation Analysis	OMNISEQ® INSIGHT*	Microarray- Tumor Reveal®*	IHC	FISH	VistaSeq®*
Somatic Evaluation							
Histopathology	gene/protein expression, amplification status				✓ (CAM 5.2, GFAP, Ki67, NeuN, Vimentin and other markers)	✓ (EWSR1, MYCN and other markers)	
1p19q codeletion	copy number status			✓		✓	
ATRX	mutation analysis		✓				
BRAF	mutation analysis, fusions	✓	✓				
CDKN2A/B	copy number status			✓			
EGFR	mutation analysis, amplification status, fusions, splice variants	✓	✓	✓		✓	
H3F3A	mutation analysis		✓				
HIST1H3B	mutation analysis		✓				
IDH1/IDH2	mutation analysis	✓	✓				
MGMT Promoter Methylation	methylation status	✓					
Microsatellite Instability Analysis	MSS, MSI-High	✓	✓		✓		
MYCN	mutation analysis, amplification status		✓	✓		✓	
PDGFRA	mutation analysis, amplification status, fusions	✓	✓	✓		✓	
PTEN	mutation analysis, copy number status		✓	✓		✓	
TERT Promoter Mutation	mutation analysis	✓	✓				
TMB (Tumor Mutational Burden)	quantitative score		✓				
Hereditary Evaluation							
Brain/CNS/PNS Cancer Panel	germline mutation analysis						✓

\* See back page for more information.

References 1. <https://www.cancer.org/cancer/types/brain-spinal-cord-tumors-adults/about/key-statistics.html>

## DETAILED TEST INFORMATION

### OmniSeq® INSIGHT

A comprehensive NGS-based assay validated for all solid tumors that includes DNA and RNA sequencing. INSIGHT interrogates the entire exonic coding region of 523 genes by NGS for single nucleotide variants (SNVs), select copy number variations (CNVs) and fusions/splice variants.

- Along with the genes listed on page 1, other CNS-relevant genes include: *ACVR1, AKT1, APC, ATRX, BCOR, BRAF, CDKN2A/B, CIC, CTNNB1, DICER1, FUBP1, GNA11, H3F3A, HIST1H3B, KIAA1549-BRAF fusions, KLF4, MYB, MYCN, NOTCH1, NRAS, PIK3CA, PTCH1, ROS, SMARCA4, SMARCB1, SMO, SUFO, TSC1, TSC2 and TRAF7.*

### Microarray-Tumor Reveal®

SNP microarray analysis is performed using the Cytoscan® HD Accel platform, which uses more than 743,130 SNP probes and 2,029,441 NPCN probes with a median spacing of 0.818 kb. This test will detect chromosomal imbalance that may be present in neoplastic disorders and clonal evolution. It provides detection of copy-neutral loss of heterozygosity of any chromosome, and the percent and location of homozygosity, that may be associated with cancer gene mutations.

### VistaSeq® Brain/CNS/PNS Cancer Panel

This assay is intended for patients with a family history consistent with an inherited cancer syndrome.

- Gene panel includes: *ALK, APC, MEN1, MLH1, MSH2, MSH6, NBN, NF1, NF2, PHOX2B, PTCH1, RB1, SMARCB1, SUFU, TP53 and VHL*

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[oncology.labcorp.com](https://oncology.labcorp.com)

