MAYO CLINIC LABORATORIES

Primary Central Nervous System Tumor Genetic Testing Ordering Guide*

TUMOR GROUP	TESTING TO ESTABLISH DIAGNOSIS	DIAGNOSTIC SUPPORT/ CONFIRMATION TESTING
High-grade gliomas	Order the following: ▪ NONCP / Neuro-Oncology Expanded Gene Panel with Rearrangement, Tumor ▪ MTNON / Neuro-Oncology Genome-Wide Methylation Array Analysis, Tumor especially if tumors such as high-grade astrocytoma with piloid features or diffuse pediatric-type high-grade glioma, H3-wildtype and IDH-wildtype are of diagnostic consideration	Consider CMAPT / Chromosomal Microarray, Tumor, Tumor, Formalin-Fixed Paraffin-Embedded
Lower-grade gliomas	Order the following: ▪ NONCP ▪ CMAPT	Consider MTNON
Ependymoma and ependymal-like tumors	Order MTNON	Consider NONCP and/or CMAPT
Medulloblastoma and other embryonal tumors	Order MTNON	Consider NONCP and/or CMAPT
Meningioma	Order the following: ▪ NONCP ▪ CMAPT	Consider MTNON
Other tumor types	Consider the following, based on the differential diagnosis ▪ NONCP ▪ CMAPT ▪ MTNON	
Diagnostically challenging cases	Order all of the following: ▪ NONCP ▪ CMAPT ▪ MTNON Can be especially helpful in high-grade pediatric brain tumors and tumors with unusual clinical, radiologic, and/or morphologic features	

*Genetic testing results should be correlated with histopathological and clinico-radiological findings. Prioritize NONCP (next-generation sequencing: NGS) when a specific mutation/fusion needs to be confirmed, and NONCP and/or CMAPT (copy number variant: CNV) analysis when tumor purity and/or amount is low (<60% tumor, <144 mm^2 tissue).

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