PATH-31. ECNA PROMOTES TUMORIGENICITY AND INTRATUMORAL HETEROGENEITY IN MEDULLOBLASTOMA
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Extrachromosomal circular DNA (ecDNA) is an important driver of amplification of genes, including methyltransferases (DNMT3A), and is associated with pediatric brain tumor. To assess the clinical importance of ecDNA in MB, we applied computational methods to detect ecDNA in the genomes of a cohort of 468 MB patients and 31 MB model systems. Among patients, ecDNA was detected in 18% of tumors and carried over twofold greater copy number, suggesting that ecDNA may allow an improved prognosis that could lead to a better guidance for therapeutic strategies.

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PATH-32. CONCORDANCE FOR CDKN2A/B LOSS AND TERT MUTATION IN WHO 2021 CLASSIFICATION GRADE 3 MENINGIOMAS: A RETROSPECTIVE STUDY

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BACKGROUND: The new WHO 2021 classification included CDKN2A/B loss and TERT mutation as new criteria for Grade 3 meningiomas, but excluded H3K27me3 loss. Malignant behavior may be influenced by DNA methylationtransferases (DNMT3A). SUFU mutations may carry a predisposition for multiple meningiomas. METHODS: In this retrospective study, 228 patients with Grade 2, Grade 3 or recurrent Grade 1 meningiomas with resections from 1990 to July 2021 at Columbia University Medical Center were assessed for recurrence, histologic features, and molecular alterations. RESULTS: Of 228 patients, 95 had Grade 2, 125 Grade 3, and 4 recurrent Grade 1 meningiomas. TERT mutation was present in 19% of Grade 2 and 8% of Grade 3 meningiomas. H3K27me3 was present in 5% of Grade 2 and 20% of Grade 3 meningiomas. CDKN2A/B loss was present in 15% of Grade 2 and 17% of Grade 3 meningiomas. CONCLUSION: In our cohort, we observed concordance with the new WHO 2021 criteria for Grade 3 meningiomas.