

- Ostrom QT, Gittleman H, Farah P, et al. CBTRUS statistical report: primary brain and central nervous system tumors diagnosed in the United States in 2006-2010. *Neuro-oncology* 2013;15:ii1-56.
- Louis DN, Ohgaki H, Wiestler OD, et al. *The WHO Classification of Tumours of the Central Nervous System*. Geneva, Switzerland: World Health Organization; 2007.
- Grossman SA, Ye X, Piantadosi S, et al. Survival of patients with newly diagnosed glioblastoma treated with radiation and temozolomide in research studies in the United States. *Clin Cancer Res* 2010;16:2443-2449.
- Yan H, Parsons DW, Jin G, et al. IDH1 and IDH2 mutations in gliomas. *N Engl J Med* 2009;360(8):765-773.
- Dang L, White DW, Gross S, et al. Cancer-associated IDH1 mutations produce 2-hydroxyglutarate. *Nature* 2009;462:739-744.
- Noushmehr H, Weisenberger DJ, Diefes K, et al. Identification of a CpG island methylator phenotype that defines a distinct subgroup of glioma. *Cancer Cell* 2010;17:510-522.
- Rohle D, Popovici-Muller J, Palakas N, et al. An inhibitor of mutant IDH1 delays growth and promotes differentiation of glioma cells. *Science* 2013;340:626-630.
- Sturm D, Witt H, Hovestadt V, et al. Hotspot mutations in H3F3A and IDH1 define distinct epigenetic and biological subgroups of glioblastoma. *Cancer Cell* 2012;22:425-437.
- Prensner JR, Chinaiyan AM. Metabolism unhinged: IDH mutations in cancer. *Nature Med* 2011;17:291-293.
- Ohgaki H, Kleihues P. Population-based studies on incidence, survival rates, and genetic alterations in astrocytic and oligodendroglial gliomas. *J Neuro-pathol Exp Neurol* 2005;64:479-489.
- Ransom DT, Ritland SR, Kimmel DW, et al. Cytogenetic and loss of heterozygosity studies in ependymomas, pilocytic astrocytomas, and oligodendrogliomas. *Genes Chromosomes Cancer* 1992;5:348-356.
- Bello MJ, Vaquero J, de Campos JM, et al. Molecular analysis of chromosome 1 abnormalities in human gliomas reveals frequent loss of 1p in oligodendroglial tumors. *Int J Cancer* 1994;57:172-175.
- Reifenberger J, Reifenberger G, Liu L, et al. Molecular genetic analysis of oligodendroglial tumors shows preferential allelic deletions on 19q and 1p. *Am J Pathol* 1994;145:1175-1190.
- Jenkins RB, Blair H, Ballman KV, et al. A t(1;19)(q10;p10) mediates the combined deletions of 1p and 19q and predicts a better prognosis of patients with oligodendroglioma. *Cancer Res* 2006;66:9852-9861.
- Bettegowda C, Agrawal N, Jiao Y, et al. Mutations in CIC and FUBP1 contribute to human oligodendroglioma. *Science* 2011;333:1453-1455.
- Jiao Y, Killela PJ, Reitman ZJ, et al. Frequent ATRX, CIC, FUBP1 and IDH1 mutations refine the classification of malignant gliomas. *Oncotarget* 2012;3:709-722.
- Ohgaki H, Kleihues P. Genetic pathways to primary and secondary glioblastoma. *Am J Pathol* 2007;170:1445-1453.
- Dunn GP, Rinne ML, Wykosky J, et al. Emerging insights into the molecular and cellular basis of glioblastoma. *Genes Dev* 2012;26:756-784.
- Hegi ME, Diserens AC, Gorlia T, et al. MGMT gene silencing and benefit from temozolomide in glioblastoma. *N Engl J Med* 2005;352:997-1003.
- Parsons DW, Jones S, Zhang X, et al. An integrated genomic analysis of human glioblastoma multiforme. *Science* 2008;321:1807-1812.
- Furnari FB, Fenton T, Bachoo RM, et al. Malignant astrocytic glioma: genetics, biology, and paths to treatment. *Genes Dev* 2007;21:2683-2710.
- Cancer Genome Atlas Research Network. Comprehensive genomic characterization defines human glioblastoma genes and core pathways. *Nature* 2008;455:1061-1068.
- Verhaak RC, Hoadley KA, Purdom E, et al. Integrated genomic analysis identifies clinically relevant subtypes of glioblastoma characterized by abnormalities in PDGFRA, IDH1, EGFR, and NF1. *Cancer Cell* 2010;17:98-110.
- Brennan CW, Verhaak RC, McKenna A, et al. The somatic genomic landscape of glioblastoma. *Cell* 2013;155:462-477.
- Killela PJ, Reitman ZJ, Jiao Y, et al. TERT promoter mutations occur frequently in gliomas and a subset of tumors derived from cells with low rates of self-renewal. *Proc Natl Acad Sci U S A* 2013;110:6021-6026.
- Esteller M, Garcia-Foncillas J, Andion E, et al. Inactivation of the DNA repair gene MGMT and the clinical response of gliomas to alkylating agents. *N Engl J Med* 2000;343:1350-1354.
- Erickson LC, Laurent G, Sharkey NA, et al. DNA cross-linking and monoadduct repair in nitrosourea-treated human tumour cells. *Nature* 1980;288:727-729.
- Killela PJ, Pirozzi CJ, Reitman ZJ, et al. The genetic landscape of anaplastic astrocytoma. *Oncotarget* 2014;5:1452-1457.
- Listernick R, Charrow J, Gutmann DH. Intracranial gliomas in neurofibromatosis type 1. *Am J Med Genet* 1999;89:38-44.
- Jones DT, Kocikalowski S, Liu L, et al. Tandem duplication producing a novel oncogenic BRAF fusion gene defines the majority of pilocytic astrocytomas. *Cancer Res* 2008;68:8673-8677.
- Forshev T, Tatevosian RG, Lawson AR, et al. Activation of the ERK/MAPK pathway: a signature genetic defect in posterior fossa pilocytic astrocytomas. *J Pathol* 2009;218:172-181.
- Zhang J, Wu G, Miller CP, et al. Whole-genome sequencing identifies genetic alterations in pediatric low-grade gliomas. *Nat Genet* 2013;45:602-612.
- Jones DT, Hutter B, Jager N, et al. Recurrent somatic alterations of FGFR1 and NTRK2 in pilocytic astrocytoma. *Nat Genet* 2013;45:927-932.
- Ramkissoon LA, Horowitz PM, Craig JM, et al. Genomic analysis of diffuse pediatric low-grade gliomas identifies recurrent oncogenic truncating rearrangements in the transcription factor MYBL1. *Proc Natl Acad Sci U S A* 2013;110:8188-8193.
- Giannini C, Scheithauer BW. Classification and grading of low-grade astrocytic tumors in children. *Brain Pathol* 1997;7:785-798.
- Giannini C, Scheithauer BW, Burger PC, et al. Pleomorphic xanthoastrocytoma: what do we really know about it? *Cancer* 1999;85(9):2033-2045.
- Schwartzentruber J, Korshunov A, Liu XY, et al. Driver mutations in histone H3.2 and chromatin remodelling genes in paediatric glioblastoma. *Nature* 2012;482:226-231.
- Wu G, Broniscer A, McEachron TA, et al. Somatic histone H3 alterations in pediatric diffuse intrinsic pontine gliomas and non-brainstem glioblastomas. *Nat Genet* 2012;44:251-253.
- Bender S, Tang Y, Lindroth AM, et al. Reduced H3K27me3 and DNA hypomethylation are major drivers of gene expression in K27M mutant pediatric high-grade gliomas. *Cancer Cell* 2013;24:660-672.
- Nicolaidis TP, Li H, Solomon DA, et al. Targeted therapy for BRAFV600E malignant astrocytoma. *Clin Cancer Res* 2011;17:7595-7604.
- Schiffman JD, Hodgson JC, Vandenberg SR, et al. Oncogenic BRAF mutation with CDKN2A inactivation is characteristic of a subset of pediatric malignant astrocytomas. *Cancer Res* 2010;70:512-519.
- Paugh BS, Qu C, Jones C, et al. Integrated molecular genetic profiling of pediatric high-grade gliomas reveals key differences with the adult disease. *J Clin Oncol* 2010;28:3061-3068.
- Louis DN, Deutsches Krebsforschungszentrum Heidelberg, International Agency for Research on Cancer, et al. *WHO Classification of Tumours of the Central Nervous System*. Geneva, Switzerland: WHO Press; 2007.
- Clark VE, Erson-Omay EZ, Serin A, et al. Genomic analysis of non-NF2 meningiomas reveals mutations in TRAF7, KLF4, AKT1, and SMO. *Science* 2013;339:1077-1080.
- Brastianos PK, Horowitz PM, Santagata S, et al. Genomic sequencing of meningiomas identifies oncogenic SMO and AKT1 mutations. *Nat Genet* 2013;45:285-289.
- Reuss DE, Piro RM, Jones DT, et al. Secretory meningiomas are defined by combined KLF4 K409Q and TRAF7 mutations. *Acta Neuropathol* 2013;125:351-358.
- Rouleau GA, Merel P, Lutchman M, et al. Alteration in a new gene encoding a putative membrane-organizing protein causes neuro-fibromatosis type 2. *Nature* 1993;363:515-521.
- Ruttledge MH, Sarrazin J, Rangaratnam S, et al. Evidence for the complete inactivation of the NF2 gene in the majority of sporadic meningiomas. *Nature Gen* 1994;6:180-184.
- Schmitz U, Mueller W, Weber M, et al. INI1 mutations in meningiomas at a potential hotspot in exon 9. *Br J Cancer* 2001;84:199-201.
- Versteeg I, Sevenet N, Lange J, et al. Truncating mutations of hSNF5/INI1 in aggressive paediatric cancer. *Nature* 1998;394:203-206.
- Biegel JA, Zhou JY, Rorke LB, et al. Germ-line and acquired mutations of INI1 in atypical teratoid and rhabdoid tumors. *Cancer Res* 1999;59:74-79.
- van den Munkhof P, Christiaans I, Kenter SB, et al. Germline SMARCB1 mutation predisposes to multiple meningiomas and schwannomas with preferential location of cranial meningiomas at the falx cerebri. *Neurogenetics* 2012;13:1-7.
- Takahashi K, Yamanaka S. Induction of pluripotent stem cells from mouse embryonic and adult fibroblast cultures by defined factors. *Cell* 2006;126:663-676.
- Regelsberger J, Hagel C, Emami P, et al. Secretory meningiomas: a benign subgroup causing life-threatening complications. *Neuro Oncol* 2009;11:819-824.
- Aavikko M, Li SP, Saarinen S, et al. Loss of SUFU function in familial multiple meningioma. *Am J Hum Genet* 2012;91:520-526.
- Hahn H, Wicking C, Zaphiropoulos PG, et al. Mutations of the human homolog of Drosophila patched in the nevoid basal cell carcinoma syndrome. *Cell* 1996;85:841-851.
- Johnson RL, Rothman AL, Xie J, et al. Human homolog of patched, a candidate gene for the basal cell nevus syndrome. *Science* 1996;272:1668-1671.
- Hamilton SR, Liu B, Parsons RE, et al. The molecular basis of Turcot's syndrome. *N Engl J Med* 1995;332(13):839-847.
- Raffel C, Jenkins RB, Frederick L, et al. Sporadic medulloblastomas contain PTCH mutations. *Cancer Res* 1997;57:842-845.
- Zurawel RH, Chiappa SA, Allen C, et al. Sporadic medulloblastomas contain oncogenic beta-catenin mutations. *Cancer Res* 1998;58:896-899.
- Thompson MC, Fuller C, Hogg TL, et al. Genomics identifies medulloblastoma subgroups that are enriched for specific genetic alterations. *J Clin Oncol* 2006;24:1924-1931.
- Pugh TJ, Weeraratne SD, Archer TC, et al. Medulloblastoma exome sequencing uncovers subtype-specific somatic mutations. *Nature* 2012;488:106-110.

63. Robinson G, Parker M, Kranenburg TA, et al. Novel mutations target distinct subgroups of medulloblastoma. *Nature* 2012;488:43–48.
64. Jones DT, Jager N, Kool M, et al. Dissecting the genomic complexity underlying medulloblastoma. *Nature* 2012;488:100–105.
65. Northcott PA, Jones DT, Kool M, et al. Medulloblastomics: the end of the beginning. *Nat Rev Cancer* 2012;12:818–834.
66. Northcott PA, Shih DJ, Peacock J, et al. Subgroup-specific structural variation across 1,000 medulloblastoma genomes. *Nature* 2012;488:49–56.
67. Gibson P, Tong Y, Robinson G, et al. Subtypes of medulloblastoma have distinct developmental origins. *Nature* 2010;468:1095–1099.
68. Ellison DW, Onilude OE, Lindsey JC, et al. beta-Catenin status predicts a favorable outcome in childhood medulloblastoma: the United Kingdom Children's Cancer Study Group Brain Tumour Committee. *J Clin Oncol* 2005;23(31):7951–7057.
69. Grill J, Dufour C. Neuro-oncology: Stability of medulloblastoma subgroups at tumour recurrence. *Nat Rev Neurol* 2014;10:5–6.
70. Kool M, Korshunov A, Remke M, et al. Molecular subgroups of medulloblastoma: an international meta-analysis of transcriptome, genetic aberrations, and clinical data of WNT, SHH, Group 3, and Group 4 medulloblastomas. *Acta Neuropathol* 2012;123:473–484.
71. Rausch T, Jones DT, Zapatka M, et al. Genome sequencing of pediatric medulloblastoma links catastrophic DNA rearrangements with TP53 mutations. *Cell* 2012;148:59–71.
72. Zhukova N, Ramaswamy V, Remke M, et al. Subgroup-specific prognostic implications of TP53 mutation in medulloblastoma. *J Clin Oncol* 2013;31:2927–2935.
73. Ramaswamy V, Remke M, Bouffert E, et al. Recurrence patterns across medulloblastoma subgroups: an integrated clinical and molecular analysis. *Lancet Oncol* 2013;14:1200–1207.
74. Rudin CM, Hann CL, Laterra J, et al. Treatment of medulloblastoma with hedgehog pathway inhibitor GDC-0449. *N Engl J Med* 2009;361:1173–1178.
75. Yauch RL, Dijkgraaf GJ, Alicke B, et al. Smoothed mutation confers resistance to a Hedgehog pathway inhibitor in medulloblastoma. *Science* 2009;326:572–574.
76. Cho YJ, Tsherniak A, Tamayo P, et al. Integrative genomic analysis of medulloblastoma identifies a molecular subgroup that drives poor clinical outcome. *J Clin Oncol* 2011;29:1424–1430.
77. Taylor MD, Northcott PA, Korshunov A, et al. Molecular subgroups of medulloblastoma: the current consensus. *Acta Neuropathol* 2012;123:465–472.
78. Taylor MD, Poppleton H, Fuller C, et al. Radial glia cells are candidate stem cells of ependymoma. *Cancer Cell* 2005;8:323–335.
79. Johnson RA, Wright KD, Poppleton H, et al. Cross-species genomics matches driver mutations and cell compartments to model ependymoma. *Nature* 2010;466:632–636.
80. Ebert C, von Haken M, Meyer-Puttlitz B, et al. Molecular genetic analysis of ependymal tumors. NF2 mutations and chromosome 22q loss occur preferentially in intramedullary spinal ependymomas. *Am J Pathol* 1999;155:627–632.
81. Witt H, Mack SC, Ryzhova M, et al. Delineation of two clinically and molecularly distinct subgroups of posterior fossa ependymoma. *Cancer Cell* 2011;20:143–157.