

Reportable Methylation Families and Classes for Neuro-Oncology Genome-Wide Methylation Array Analysis

This test uses the NCI/Bethesda central nervous system tumor classifier v2.0, with reportable outputs consisting of the methylation families and classes listed below.

Methylation Family	Methylation Class
BCOR_altered_tumors	BCOR_ITD (CNS tumor with BCOR internal tandem duplication)
BCOR_altered_tumors	EP300_BCOR (CNS tumor with BCOR/BCORL1 fusion)
Choroid_plexus_tumors	CPC_AD (Choroid plexus carcinoma, adult subtype)
Choroid_plexus_tumors	CPC_PED (Choroid plexus carcinoma, pediatric subtype)
Choroid_plexus_tumors	CPP_AD (Choroid plexus papilloma, adult subtype)
Choroid_plexus_tumors	CPP_PED (Choroid plexus papilloma, pediatric subtype)
CNS_neuroblastoma_FOXR2_altered_and_DGONC	DGONC (Diffuse glioneuronal tumor with oligodendroglioma-like features and nuclear clusters)
CNS_neuroblastoma_FOXR2_altered_and_DGONC	NB_FOXR2 (CNS neuroblastoma, FOXR2-activated)
Control_tissues	CONTR_ADENOPIT (Control tissue, pituitary gland [anterior lobe])
Control_tissues	CONTR_CEBM (Control tissue, cerebellum)
Control_tissues	CONTR_CORPCAL (Control tissue, corpus callosum)
Control_tissues	CONTR_HEMI (Control tissue, cerebral hemisphere)
Control_tissues	CONTR_INFLAM (Inflammatory microenvironment)
Control_tissues	CONTR_PONS (Control tissue, pons)
Control_tissues	CONTR_REACT (Control tissue, reactive tumor microenvironment)
Control_tissues	CTRL_BLOOD (Control tissue, white blood cells)
Control_tissues	CTRL_HYPOTHAL (Control tissue, hypothalamus)
Control_tissues	CTRL_OPTIC (Control tissue, optic pathway)
Diffuse_midline_glioma_H3K27_altered	DMG_EGFR (Diffuse midline glioma, H3 K27-altered, subtype EGFR-altered)
Diffuse_midline_glioma_H3K27_altered	DMG_K27 (Diffuse midline glioma, H3 K27-altered, subtype H3 K27-mutant or EZHIP expressing)
Ependymal_tumors	EPEN_SUBEPN_PF (Subependymoma, posterior fossa)
Ependymal_tumors	EPEN_SUBEPN_ST (Subependymoma, supratentorial)
Ependymal_tumors	EPN_ACVR1 (Ependymoma, posterior fossa group, ACVR1-mutant)
Ependymal_tumors	EPN_MPE (Myxopapillary ependymoma)
Ependymal_tumors	EPN_PFA_1A (Ependymoma, posterior fossa group A [PFA], subclass 1a)
Ependymal_tumors	EPN_PFA_1B (Ependymoma, posterior fossa group A [PFA], subclass 1b)
Ependymal_tumors	EPN_PFA_1C (Ependymoma, posterior fossa group A [PFA], subclass 1c)
Ependymal_tumors	EPN_PFA_1D (Ependymoma, posterior fossa group A [PFA], subclass 1d)
Ependymal_tumors	EPN_PFA_1E (Ependymoma, posterior fossa group A [PFA], subclass 1e)
Ependymal_tumors	EPN_PFA_1F (Ependymoma, posterior fossa group A [PFA], subclass 1f)
Ependymal_tumors	EPN_PFA_2A (Ependymoma, posterior fossa group A [PFA], subclass 2a)
Ependymal_tumors	EPN_PFA_2B (Ependymoma, posterior fossa group A [PFA], subclass 2b)
Ependymal_tumors	EPN_PFA_2C (Ependymoma, posterior fossa group A [PFA], subclass 2c)
Ependymal_tumors	EPN_PFB_1 (Ependymoma, posterior fossa group B [PFB], subclass 1)

Reportable Methylation Families and Classes for Neuro-Oncology Genome-Wide Methylation Array Analysis (continued)

Methylation Family	Methylation Class
Ependymal_tumors	EPN_PFB_2 (Ependymoma, posterior fossa group B [PFB], subclass 2)
Ependymal_tumors	EPN_PFB_3 (Ependymoma, posterior fossa group B [PFB], subclass 3)
Ependymal_tumors	EPN_PFB_4 (Ependymoma, posterior fossa group B [PFB], subclass 4)
Ependymal_tumors	EPN_PFB_5 (Ependymoma, posterior fossa group B [PFB], subclass 5)
Ependymal_tumors	EPN_SPINE (Ependymoma, spinal)
Ependymal_tumors	EPN_SPINE_MYCN (Ependymoma, spinal, MYCN-amplified)
Ependymal_tumors	EPN_SPINE_SE_A (Subependymoma, spinal, subtype A)
Ependymal_tumors	EPN_SPINE_SE_B (Subependymoma, spinal, subtype B)
Ependymal_tumors	EPN_ST_ZFTA_FUS_C (Ependymoma, supratentorial, ZFTA fusion-positive, subtype ZFTA::RELA fused, subclass C)
Ependymal_tumors	EPN_ST_ZFTA_FUS_D (Ependymoma, supratentorial, ZFTA fusion-positive, subtype ZFTA::RELA fused, subclass D)
Ependymal_tumors	EPN_ST_ZFTA_FUS_E (Ependymoma, supratentorial, ZFTA fusion-positive, subtype ZFTA::RELA fused, subclass E)
Ependymal_tumors	EPN_ST_ZFTA_RELA_A (Ependymoma, supratentorial, ZFTA fusion-positive, subtype ZFTA::RELA fused, subclass A)
Ependymal_tumors	EPN_YAP (Ependymoma, supratentorial, YAP1 fusion-positive)
Epithelial_tumors	BRCA_A (Breast adenocarcinoma, subtype A)
Epithelial_tumors	BRCA_B (Breast adenocarcinoma, subtype B)
Epithelial_tumors	COAD (Colorectal adenocarcinoma)
Epithelial_tumors	CPH_ADM (Adamantinomatous craniopharyngioma)
Epithelial_tumors	CPH_PAP (Papillary craniopharyngioma)
Epithelial_tumors	ENDOLST (Endolymphatic sac tumor)
Epithelial_tumors	KIRC (Clear cell carcinoma of the kidney)
Epithelial_tumors	LUAD (Lung adenocarcinoma)
Glioblastoma	DG_F3T3_O (Diffuse glioma, FGFR3 fusion-positive)
Glioblastoma	GBM_CBM (Glioblastoma, IDH-wildtype, subtype posterior fossa)
Glioblastoma	GBM_MES_ATYP (Glioblastoma, IDH-wildtype, mesenchymal subtype, atypical)
Glioblastoma	GBM_MES_TYP (Glioblastoma, IDH-wildtype, mesenchymal subtype)
Glioblastoma	GBM_PNC (Glioblastoma, IDH-wildtype with primitive neuronal component)
Glioblastoma	GBM_RTK_I (Glioblastoma, IDH-wildtype, RTK1 subtype)
Glioblastoma	GBM_RTK_II (Glioblastoma, IDH-wildtype, RTK2 subtype)
Hematopoietic_tumors	DLBCL (Diffuse large B-cell lymphoma of the CNS)
Hematopoietic_tumors	LCH (Langerhans cell histiocytosis)
Hematopoietic_tumors	PLASMACYT (Plasmacytoma)
IDH_glioma	A_IDH (Astrocytoma, IDH-mutant, lower-grade)
IDH_glioma	A_IDH_HG (Astrocytoma, IDH-mutant, high-grade)
IDH_glioma	O_IDH (Oligodendroglioma, IDH-mutant and 1p/19q-codeleted)
IDH_glioma	O_SARC_IDH (Oligosarcoma, IDH-mutant)

Reportable Methylation Families and Classes for Neuro-Oncology Genome-Wide Methylation Array Analysis (continued)

Methylation Family	Methylation Class
Intermediate_grade_IDH_wildtype_gliomas	AB_EWSR1_BEND2 (Astroblastoma, EWSR1::BEND2 fused)
Intermediate_grade_IDH_wildtype_gliomas	ASTROBL_CXXC5 (Astroblastoma, MN1-altered, CXXC5 fusion-positive)
Intermediate_grade_IDH_wildtype_gliomas	ASTROBL_MN1 (Astroblastoma, MN1-altered, BEND2 fusion-positive)
Intermediate_grade_IDH_wildtype_gliomas	DLGNT_1 (Diffuse leptomeningeal glioneuronal tumor, subtype 1)
Intermediate_grade_IDH_wildtype_gliomas	DLGNT_2 (Diffuse leptomeningeal glioneuronal tumor, subtype 2)
Intermediate_grade_IDH_wildtype_gliomas	GNT_KinF_A (Glioneuronal tumor, kinase-fused)
Intermediate_grade_IDH_wildtype_gliomas	GTAKA (Glioneuronal tumor with ATRX alteration, kinase fusion and anaplastic features)
Intermediate_grade_IDH_wildtype_gliomas	HGAP (High-grade astrocytoma with piloid features)
Intermediate_grade_IDH_wildtype_gliomas	HGG_B (Adult-type diffuse high grade glioma, IDH-wildtype, subtype B)
Intermediate_grade_IDH_wildtype_gliomas	HGG_E (Adult-type diffuse high grade glioma, IDH-wildtype, subtype E)
Intermediate_grade_IDH_wildtype_gliomas	HGG_F (Adult-type diffuse high grade glioma, IDH-wildtype, subtype F)
Intermediate_grade_IDH_wildtype_gliomas	HPAP (High-grade glioma with pleomorphic and pseudopapillary features)
Intermediate_grade_IDH_wildtype_gliomas	PXA (Pleomorphic xanthoastrocytoma)
Low_grade_glia_glioneuronal_tumors	AG_MYB (Angiocentric glioma, MYB/MYBL1-altered)
Low_grade_glia_glioneuronal_tumors	CHGL (Chordoid glioma)
Low_grade_glia_glioneuronal_tumors	CN (Central neurocytoma)
Low_grade_glia_glioneuronal_tumors	DIG_DIA (Desmoplastic infantile ganglioglioma/desmoplastic infantile astrocytoma)
Low_grade_glia_glioneuronal_tumors	DNT (Dysembryoplastic neuroepithelial tumor)
Low_grade_glia_glioneuronal_tumors	EVNCYT (Extraventricular neurocytoma)
Low_grade_glia_glioneuronal_tumors	GG (Ganglioglioma)
Low_grade_glia_glioneuronal_tumors	LIPN (Cerebellar liponeurocytoma)
Low_grade_glia_glioneuronal_tumors	MYB_B (Diffuse astrocytoma, MYB or MYBL1-altered, subtype B [infratentorial])
Low_grade_glia_glioneuronal_tumors	MYB_C (Diffuse astrocytoma, MYB or MYBL1-altered, subtype C [isomorphic])
Low_grade_glia_glioneuronal_tumors	MYB_D (Diffuse astrocytoma, MYB or MYBL1-altered, subtype D)
Low_grade_glia_glioneuronal_tumors	MYXGNT (Myxoid glioneuronal tumor)
Low_grade_glia_glioneuronal_tumors	PA_CORT (Pilocytic astrocytoma, supratentorial)
Low_grade_glia_glioneuronal_tumors	PA_INF_FGFR (Pilocytic astrocytoma, posterior fossa, FGFR1-altered)
Low_grade_glia_glioneuronal_tumors	PA_MID (Pilocytic astrocytoma, midline)
Low_grade_glia_glioneuronal_tumors	PA_PF (Pilocytic astrocytoma, posterior fossa)
Low_grade_glia_glioneuronal_tumors	PA_PF_A (Pilocytic astrocytoma, infratentorial, variant)
Low_grade_glia_glioneuronal_tumors	PGNT (Papillary glioneuronal tumor)
Low_grade_glia_glioneuronal_tumors	PLNTY (Polymorphous low-grade neuroepithelial tumor of the young)
Low_grade_glia_glioneuronal_tumors	RGNT (Rosette forming glioneuronal tumor)
Low_grade_glia_glioneuronal_tumors	SEGA (Subependymal giant cell astrocytoma)
Meningioma	MNG_BEN_1 (Meningioma, subtype benign, subclass 1)
Meningioma	MNG_BEN_2 (Meningioma, subtype benign, subclass 2)
Meningioma	MNG_BEN_3 (Meningioma, subtype benign, subclass 3)

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Methylation Family	Methylation Class
Meningioma	MNG_INT_A (Meningioma, subtype intermediate, subclass A)
Meningioma	MNG_INT_B (Meningioma, subtype intermediate, subclass B)
Meningioma	MNG_MAL (Meningioma, subtype malignant)
Meningioma	MNG_SMARCE1 (Meningioma, clear cell subtype, SMARCE1-altered)
Mesenchymal_tumors	ARMS (Rhabdomyosarcoma, alveolar subtype)
Mesenchymal_tumors	CHORDM (Chordoma)
Mesenchymal_tumors	CNS_SCHW_VGLL (CNS Schwannoma, VGLL-fused)
Mesenchymal_tumors	CNS_SCS_DICER (Primary intracranial sarcoma, DICER1-mutant)
Mesenchymal_tumors	EFT_CIC (CIC-rearranged sarcoma)
Mesenchymal_tumors	ERMS (Rhabdomyosarcoma, embryonal subtype)
Mesenchymal_tumors	HMB (Hemangioblastoma)
Mesenchymal_tumors	ICMT_A (Intracranial mesenchymal tumor, FET::CREB fusion-positive, subtype A)
Mesenchymal_tumors	ICMT_B (Intracranial mesenchymal tumor, FET::CREB fusion-positive, subtype B)
Mesenchymal_tumors	ICMT_C (Intracranial mesenchymal tumor, FET::CREB fusion-positive, subtype C)
Mesenchymal_tumors	MMNST (Malignant melanotic nerve sheath tumor)
Mesenchymal_tumors	MPNST (Malignant peripheral nerve sheath tumor)
Mesenchymal_tumors	MPNST_ATYP (Malignant peripheral nerve sheath tumor, atypical)
Mesenchymal_tumors	NFIB_PLEX (Plexiform neurofibroma)
Mesenchymal_tumors	RMS_MYOD1 (Rhabdomyosarcoma, MYOD1-mutant)
Mesenchymal_tumors	SCHW (Schwannoma)
Mesenchymal_tumors	SFT_HMPC (Solitary fibrous tumor)
Neuroblastic_embryonal_tumors	ET_BRD4_LEUTX (Embryonal tumor with BRD4:LEUTX fusion)
Neuroblastic_embryonal_tumors	ET_PLAG (CNS embryonal tumor with PLAG-family amplification)
Neuroblastic_embryonal_tumors	ETMR (Embryonal tumor with multilayered rosettes, C19MC-altered)
Neuroblastic_embryonal_tumors	ETMR_DICER (Embryonal tumor with multilayered rosettes, DICER1-mutant)
Neuroblastic_embryonal_tumors	EWS (Ewing sarcoma)
Neuroblastic_embryonal_tumors	IO_MEPL (Intraocular medulloepithelioma)
Neuroblastic_embryonal_tumors	MB_G34_I (Medulloblastoma, non-WNT/non-SHH, Group 3, subclass I)
Neuroblastic_embryonal_tumors	MB_G34_II (Medulloblastoma, non-WNT/non-SHH, Group 3, subclass II)
Neuroblastic_embryonal_tumors	MB_G34_III (Medulloblastoma, non-WNT/non-SHH, Group 3, subclass III)
Neuroblastic_embryonal_tumors	MB_G34_IV (Medulloblastoma, non-WNT/non-SHH, Group 3, subclass IV)
Neuroblastic_embryonal_tumors	MB_G34_V (Medulloblastoma, non-WNT/non-SHH, Group 4, subclass V)
Neuroblastic_embryonal_tumors	MB_G34_VI (Medulloblastoma, non-WNT/non-SHH, Group 4, subclass VI)
Neuroblastic_embryonal_tumors	MB_G34_VII (Medulloblastoma, non-WNT/non-SHH, Group 4, subclass VII)
Neuroblastic_embryonal_tumors	MB_G34_VIII (Medulloblastoma, non-WNT/non-SHH, Group 4, subclass VIII)
Neuroblastic_embryonal_tumors	MB_MYO (Medullomyoblastoma)
Neuroblastic_embryonal_tumors	MB_SHH_1 (Medulloblastoma, SHH-activated, subclass 1)

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Methylation Family	Methylation Class
Neuroblastic_embryonal_tumors	MB_SHH_2 (Medulloblastoma, SHH-activated, subclass 2)
Neuroblastic_embryonal_tumors	MB_SHH_3 (Medulloblastoma, SHH-activated, subclass 3)
Neuroblastic_embryonal_tumors	MB_SHH_4 (Medulloblastoma, SHH-activated, subclass 4)
Neuroblastic_embryonal_tumors	MB_WNT (Medulloblastoma, WNT-activated)
Neuroblastic_embryonal_tumors	NB_MYCN (Peripheral neuroblastoma, MYCN type)
Neuroblastic_embryonal_tumors	NB_TMM_NEG (Peripheral neuroblastoma, TMM-negative)
Neuroblastic_embryonal_tumors	NB_TMM_POS (Peripheral neuroblastoma, TMM-positive)
Neuroblastic_embryonal_tumors	ONB (Olfactory neuroblastoma)
Neuroblastic_embryonal_tumors	PATZ1 (CNS tumor with PATZ1 fusion)
Neuroblastic_embryonal_tumors	PLAGL1_FUS (Neuroepithelial tumor, PLAGL1-fused)
Neuroblastic_embryonal_tumors	SNUC_IDH2 (Sinonasal undifferentiated carcinoma, IDH2-mutant)
Neuroendocrine_tumors	CENET (Cauda equina neuroendocrine tumor)
Neuroendocrine_tumors	PITAD_ACTH (Pituitary neuroendocrine tumor/pituitary adenoma, subtype ACTH-producing)
Neuroendocrine_tumors	PITAD_FSH_LH (Pituitary neuroendocrine tumor/pituitary adenoma, subtype FSH/LH-producing)
Neuroendocrine_tumors	PITAD_PRL (Pituitary neuroendocrine tumor/pituitary adenoma, subtype prolactin-producing)
Neuroendocrine_tumors	PITAD_STH_DENSE1 (Pituitary neuroendocrine tumor/pituitary adenoma, subtype STH-producing, subclass densely granulated A)
Neuroendocrine_tumors	PITAD_STH_DENSE2 (Pituitary neuroendocrine tumor/pituitary adenoma, subtype STH-producing, subclass densely granulated B)
Neuroendocrine_tumors	PITAD_STH_SPA (Pituitary neuroendocrine tumor/pituitary adenoma, subtype STH-producing, subclass sparsely granulated)
Neuroendocrine_tumors	PITAD_TSH (Pituitary neuroendocrine tumor/pituitary adenoma, subtype TSH-producing)
Other_tumors	GCT_GERM_A (Germinoma, subtype KIT-wildtype)
Other_tumors	GCT_GERM_KIT (Germinoma, subtype KIT-mutant)
Other_tumors	GCT_TERA (Teratoma)
Other_tumors	GCT_YOLKSAC (Yolk sac tumor)
Other_tumors	MELAN (Melanoma metastasis)
Other_tumors	MELCYT (Circumscribed meningeal melanocytic neoplasm)
Other_tumors	PITUI (Pituicytoma, granular cell tumor of the sellar region, and spindle cell oncocytoma)
Pediatric_type_high_grade_gliomas	DHG_G34 (Diffuse hemispheric glioma, H3 G34-mutant)
Pediatric_type_high_grade_gliomas	IHG (Infant-type hemispheric glioma)
Pediatric_type_high_grade_gliomas	IHG_EMB (Infant-type hemispheric glioma, embryonal subtype)
Pediatric_type_high_grade_gliomas	pedHGG_A (Diffuse pediatric-type high grade glioma, H3-wildtype and IDH-wildtype, Subtype A)
Pediatric_type_high_grade_gliomas	pedHGG_B (Diffuse pediatric-type high grade glioma, H3-wildtype and IDH-wildtype, Subtype B)
Pediatric_type_high_grade_gliomas	pedHGG_MYCN (Diffuse pediatric-type high grade glioma, H3-wildtype and IDH-wildtype, MYCN subtype)
Pediatric_type_high_grade_gliomas	pedHGG_RTK1A (Diffuse pediatric-type high grade glioma, H3-wildtype and IDH-wildtype, RTK1 subtype, subclass A)

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Methylation Family	Methylation Class
Pediatric_type_high_grade_gliomas	pedHGG_RTK1B (Diffuse pediatric-type high grade glioma, H3-wildtype and IDH-wildtype, RTK1 subtype, subclass B)
Pediatric_type_high_grade_gliomas	pedHGG_RTK1C (Diffuse pediatric-type high grade glioma, H3-wildtype and IDH-wildtype, RTK1 subtype, subclass C)
Pediatric_type_high_grade_gliomas	pedHGG_RTK2A (Diffuse pediatric-type high grade glioma, H3-wildtype and IDH-wildtype, RTK2 subtype, subclass A)
Pediatric_type_high_grade_gliomas	pedHGG_RTK2B (Diffuse pediatric-type high grade glioma, H3-wildtype and IDH-wildtype, RTK2 subtype, subclass B)
Pineal_region_tumors_and_retinoblastoma	CONTR_PINEAL (Control tissue, pineal gland)
Pineal_region_tumors_and_retinoblastoma	PB_FOXR2 (Pineoblastoma, MYC/FOXR2-activated)
Pineal_region_tumors_and_retinoblastoma	PB_GRP1A (Pineoblastoma, subtype miRNA processing-altered 1, subclass A)
Pineal_region_tumors_and_retinoblastoma	PB_GRP1B (Pineoblastoma, subtype miRNA processing-altered 1, subclass B)
Pineal_region_tumors_and_retinoblastoma	PB_GRP2 (Pineoblastoma, subtype miRNA processing-altered 2)
Pineal_region_tumors_and_retinoblastoma	PB_RB (Pineoblastoma, subtype RB1-altered [pineal retinoblastoma])
Pineal_region_tumors_and_retinoblastoma	PIN_CYT (Pineocytoma)
Pineal_region_tumors_and_retinoblastoma	PPTID_A (Pineal parenchymal tumor of intermediate differentiation, KBTBD4-altered, subtype A)
Pineal_region_tumors_and_retinoblastoma	PPTID_B (Pineal parenchymal tumor of intermediate differentiation, KBTBD4-altered, subtype B)
Pineal_region_tumors_and_retinoblastoma	PTPR_A (Papillary tumor of the pineal region, subtype A)
Pineal_region_tumors_and_retinoblastoma	PTPR_B (Papillary tumor of the pineal region, subtype B)
Pineal_region_tumors_and_retinoblastoma	RB (Retinoblastoma)
Pineal_region_tumors_and_retinoblastoma	RB_MYCN (Retinoblastoma, subtype MYCN-altered)
SMARC_altered_tumors	ATRT_MYC (Atypical teratoid/rhabdoid tumor, MYC-subtype)
SMARC_altered_tumors	ATRT_SHH (Atypical teratoid/rhabdoid tumor, SHH-subtype)
SMARC_altered_tumors	ATRT_TYR (Atypical teratoid/rhabdoid tumor, TYR-subtype)
SMARC_altered_tumors	CRINET (Cribriform neuroepithelial tumor, SMARCB1-altered)
SMARC_altered_tumors	DMT_SMARCB1 (Desmoplastic myxoid tumor, SMARCB1-altered)