

Supplementary table 2. Tumor characteristics and the detection of CSF-cDNA

Patient	Sex	Age	Diagnosis	Tumor Grade	Tumor location	DIPG	Enhancement	Tumor volume (cm3)	Location of CSF sampling	Tumor abutting CSF	Mutated genes detected in tumor tissue	Mutated genes detected in CSF cDNA	Consistency (CSF/Tumor tissue)	Comparison	Outcome	Overall survival (months)
RE149	F	27	AA	3	Pontine	No	No	23.9	Cerebellomedullary cistern	Yes	IDH1, TP53, ATRX	IDH1, TP53, ATRX	Totally consistent(3/3)	CSF=T	Alive	40.2
RE152	F	34	A	2	Pontine	No	No	25.8	Cerebellomedullary cistern	Yes	IDH1,TP53, ATRX	IDH1,TP53, ATRX	Totally consistent(3/3)	CSF=T	Alive	15.4
RD760	F	9	GG	1	Lateral Ventricle	—	Yes	52.18	Lateral ventricle	Yes	H3F3A,TP53	H3F3A, TP53	Totally consistent (2/2)	CSF=T	Dead	15.0
RD899	M	12	AO	3	Medulla	—	Yes	8.94	Cerebellomedullary cistern	Yes	H3F3A, PPM1D, ATRX, FGFR1, NF1	H3F3A, PPM1D, ATRX, FGFR1, NF1	Totally consistent (5/5)	CSF=T	Dead	3.7
RD998	F	45	E	2	Medulla	—	Yes	0.95	Cerebellomedullary cistern	Yes	ACVR1	ACVR1	Totally consistent(1/1)	CSF=T	Alive	17.0
RE153	F	53	A	2	Medulla	—	No	4.21	Cerebellomedullary cistern	Yes	H3F3A, TPT3, PPM1D	H3F3A, TPT3, PPM1D	Totally consistent(3/3)	CSF=T	Alive	14.4
RE974	F	44	A	2	Medulla	—	No	7.93	Cerebellomedullary cistern	Yes	H3F3A, NF1	H3F3A, NF1	Totally consistent(2/2)	CSF=T	Dead	8.5
RD516	F	4	PMA	1	Medulla	—	Yes	9.35	Cerebellomedullary cistern	Yes	BRAF,KIAA1549	BRAF,KIAA1549	Totally consistent (1/1)	CSF=T	Alive	12.0
RE671	M	49	AA	3	Midbrain	—	Yes	5.83	Basal cistern	Yes	H3F3A, TP53, PDGFRA	H3F3A, TP53, PDGFRA	Totally consistent(3/3)	CSF=T	Alive	13.7
RE665	F	46	GBM	4	MP	—	Yes	21.58	Basal cistern	Yes	HIST1H3B, TP53, PDGFRA	HIST1H3B, TP53, PDGFRA	Totally consistent(3/3)	CSF=T	Dead	1.7
RD887	F	37	SE	1	MP	—	No	4.55	Basal cistern	Yes	H3F3A	Negative	Inconsistent	CSF<T	Alive	18.0
RE965	F	12	GBM	4	PO	—	No	21.1	Basal cistern	Yes	H3F3A, MET, PPM1D	H3F3A, MET, PPM1D	Totally consistent(3/3)	CSF=T	Dead	2.2
RE970	F	40	A	2	PO	—	No	28.5	Cerebellomedullary cistern	Yes	IDH1, TP53, ATRX, FAT1	IDH1, TP53, ATRX, FAT1	Totally consistent(4/4)	CSF=T	Dead	141.2
RD569	M	12	GBM	4	Pontine	Yes	Yes	41.52	Spinal subarachnoid space	Yes	H3F3A, PTEN, TP53	H3F3A, PTEN, TP53	Totally consistent (3/3)	CSF=T	Dead	1.7
RE147	M	12	GBM	4	Pontine	Yes	No	35.09	Cerebellomedullary cistern	Yes	H3F3A, TP53	H3F3A, TP53	Totally consistent(2/2)	CSF=T	Alive	16.0
RE150	M	5.8	GBM	4	Pontine	Yes	Yes	12.75	Cerebellomedullary cistern	Yes	HIST1H3B, ACVR1, PIK3CA	HIST1H3B, ACVR1, PIK3CA	Totally consistent(3/3)	CSF=T	Dead	9.0
RE963	M	7	GBM	4	Pontine	Yes	Yes	24.39	Cerebellomedullary cistern	Yes	H3F3A, TP53, PTEN	H3F3A, TP53, PTEN	Totally consistent(3/3)	CSF=T	Dead	8.5
RF178	F	10	GBM	4	Pontine	Yes	Yes	13.87	Cerebellomedullary cistern	Yes	H3F3A, TP53	H3F3A, TP53	Totally consistent(2/2)	CSF=T	Alive	15.0
RD993	F	6	DMG	4	Pontine	Yes	No	45.97	Cerebellomedullary cistern	Yes	H3F3A, TP53	H3F3A, TP53, PDGFRA, BRAF, FAT1	Consistent(2/2)	CSF>T	Dead	4.0
RE664	F	5	GBM	4	Pontine	Yes	Yes	12.42	Cerebellomedullary cistern	Yes	H3F3A,TP53	H3F3A, TP53	Totally consistent(2/2)	CSF=T	Dead	13.2
RF007	M	44	GBM	4	Pontine	No	Yes	11.1	Cerebellomedullary cistern	Yes	PIK3CA, PPM1D	HIST1H3B, NF1, PIK3CA, PPM1D	Consistent (2/2)	CSF>T	Dead	20.7
RF010	F	6	GBM	4	Pontine	Yes	Yes	26.83	Cerebellomedullary cistern	Yes	TP53, EGFR, PMS2, SETD2, ATRX, FGFR1, PDGFRA, PIK3R1, BRCA2, FGFR3, MLH1, MSH6, MSH2	H3F3A,TP53, EGFR, PMS2, SETD2	Consistent (4/13)	CSF<T	Dead	3.0
RF181	M	6	DMG	4	Pontine	Yes	No	14.89	Cerebellomedullary cistern	Yes	H3F3A, TP53, PTEN	H3F3A, TP53	Consistent (2/3)	CSF<T	Dead	7.0
RE964	M	25	GBM	4	Pontine	Yes	Yes	13.38	Basal cistern	Yes	H3F3A, TP53	H3F3A, EGFR	Consistent (1/2)	CSF<T	Dead	14.5
RD757	F	7	AO	3	Pontine	Yes	Yes	36.38	Spinal subarachnoid space	Yes	HIST1H3B, ACVR1, TP53, BCOR	HIST1H3B, ACVR1, TP53, BCOR	Totally consistent (4/4)	CSF=T	Dead	5.0
RD762	M	8	AA	3	Pontine	Yes	Yes	45.19	Cerebellomedullary cistern	Yes	H3F3A, PPM1D, PIK3CA	H3F3A, PPM1D, PIK3CA	Totally consistent(3/3)	CSF=T	Alive	9.0
RD997	F	18	AA	3	Pontine	No	No	3.33	Cerebellomedullary cistern	Yes	H3F3A	H3F3A	Totally consistent(1/1)	CSF=T	Alive	24.0
RE002	F	6	AA	3	Pontine	Yes	No	74.35	Cerebellomedullary cistern	Yes	H3F3A, TP53(p.Arg248Gln, p.Arg158Leu)	H3F3A, TP53(p.Arg248Gln, p.Arg158Leu)	Totally consistent(2/2)	CSF=T	Dead	5.5
RE669	M	15	AA	3	Pontine	Yes	No	55.65	Cerebellomedullary cistern	Yes	H3F3A, TP53	H3F3A, TP53	Totally consistent(2/2)	CSF=T	Dead	16.3
RE966	F	5.5	AOA	3	Pontine	Yes	Yes	40.79	Cerebellomedullary cistern	Yes	H3F3A	H3F3A	Totally consistent(1/1)	CSF=T	Dead	9.7
RF008	M	8	AOA	3	Pontine	Yes	Yes	17.25	Cerebellomedullary cistern	Yes	H3F3A, TP53, PDGFRA	H3F3A, TP53, PDGFRA	Totally consistent(3/3)	CSF=T	Dead	2.2
RF177	F	50	AA	3	Pontine	No	Yes	8.67	Cerebellomedullary cistern	Yes	H3F3A, FGFR1, BCOR	H3F3A, FGFR1, BCOR	Totally consistent(3/3)	CSF=T	Alive	15.0
RE662	M	23	AA	3	Pontine	Yes	Yes	18.38	Cerebellomedullary cistern	Yes	H3F3A, TP53, ATRX, PIK3CA	H3F3A, ARTX	Consistent(2/4)	CSF<T	Dead	8.9
RF182	F	7	AA	3	Pontine	Yes	Yes	26.83	Basal cistern	Yes	H3F3A, TP53(p.Arg280 Gly), PIK3CA	H3F3A, TP53(p.Arg280 Gly, p.Arg273Cys), PIK3CA	Consistent (3/3)	CSF>T	Dead	2.0
RE151	M	34	A	2	Pontine	Yes	No	21.2	Cerebellomedullary cistern	Yes	IDH1,TP53	IDH1,TP53	Totally consistent(2/2)	CSF=T	Alive	129.4
RD748	M	11	O	2	Pontine	Yes	Yes	52.91	Spinal subarachnoid space	Yes	HIST1H3B, ACVR1, PIK3CA	HIST1H3B, ACVR1	Consistent(2/3)	CSF<T	Alive	20.0
RF009	M	56	AOA	3	TM	—	No	11.01	Lateral ventricle	Yes	H3F3A, TP53, PDGFRA	H3F3A, TP53, PDGFRA	Totally consistent(3/3)	CSF=T	Dead	10.0

AA, anaplastic ependymoma; SE, subependymoma; MB-LCA, Large cell/anaplastic medulloblastoma; MB-C, classic medulloblastoma; MB-D, Desmoplastic / nodular medulloblastoma; TM, thalamus and midbrain; MP, midbrain and pontine; PO, pontine and medullary oblongata.