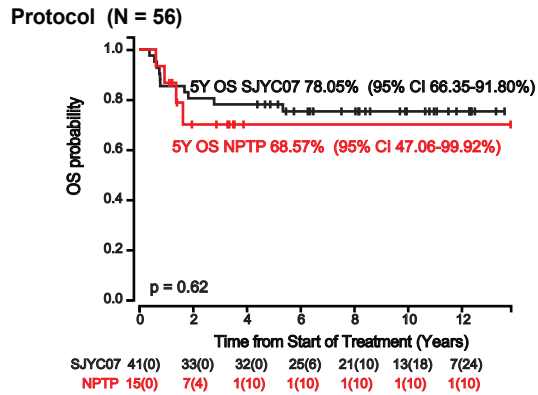
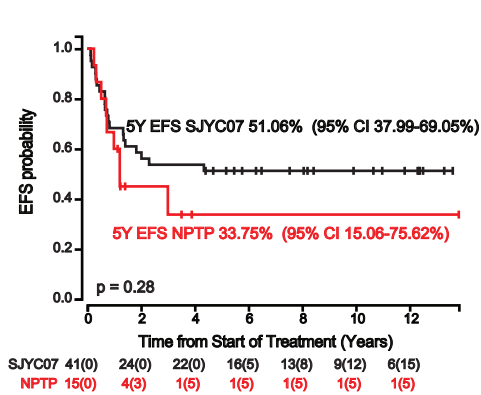
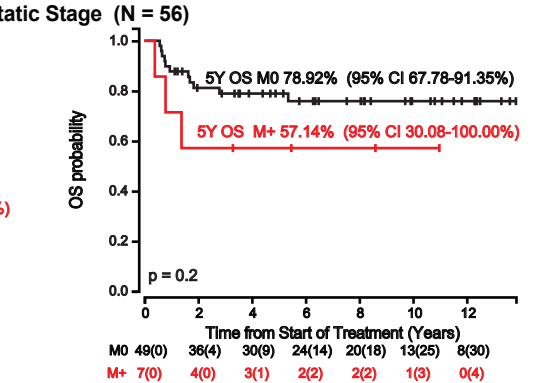
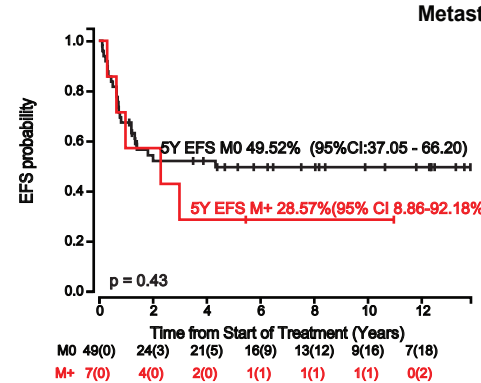


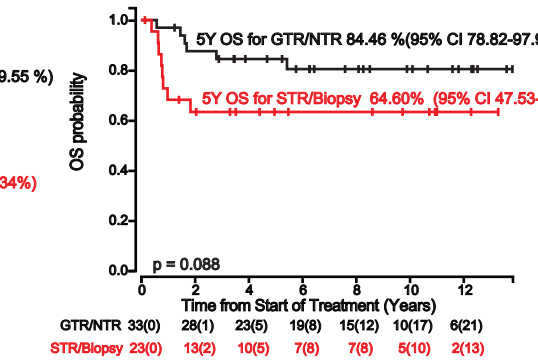
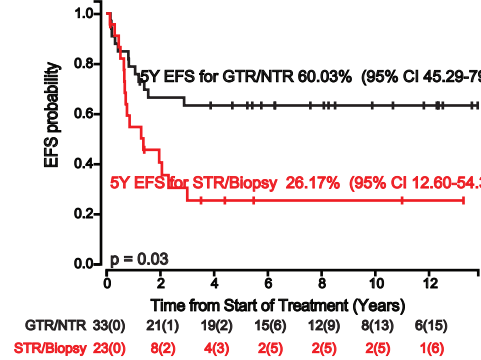
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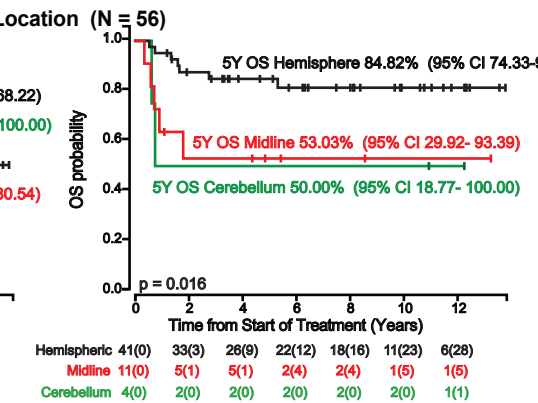
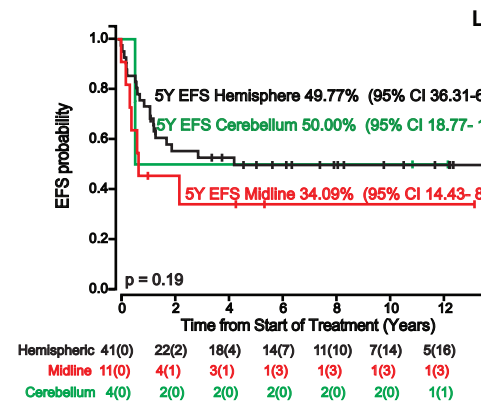
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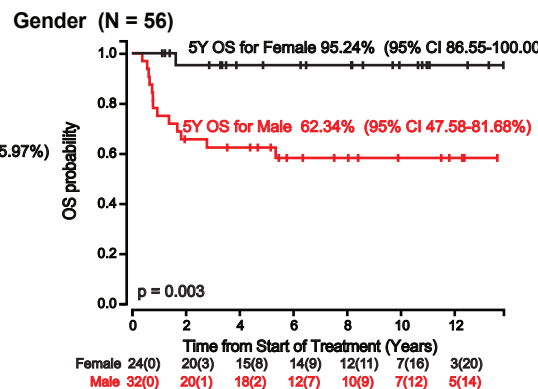
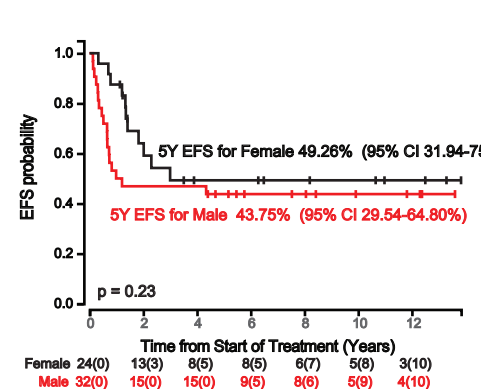
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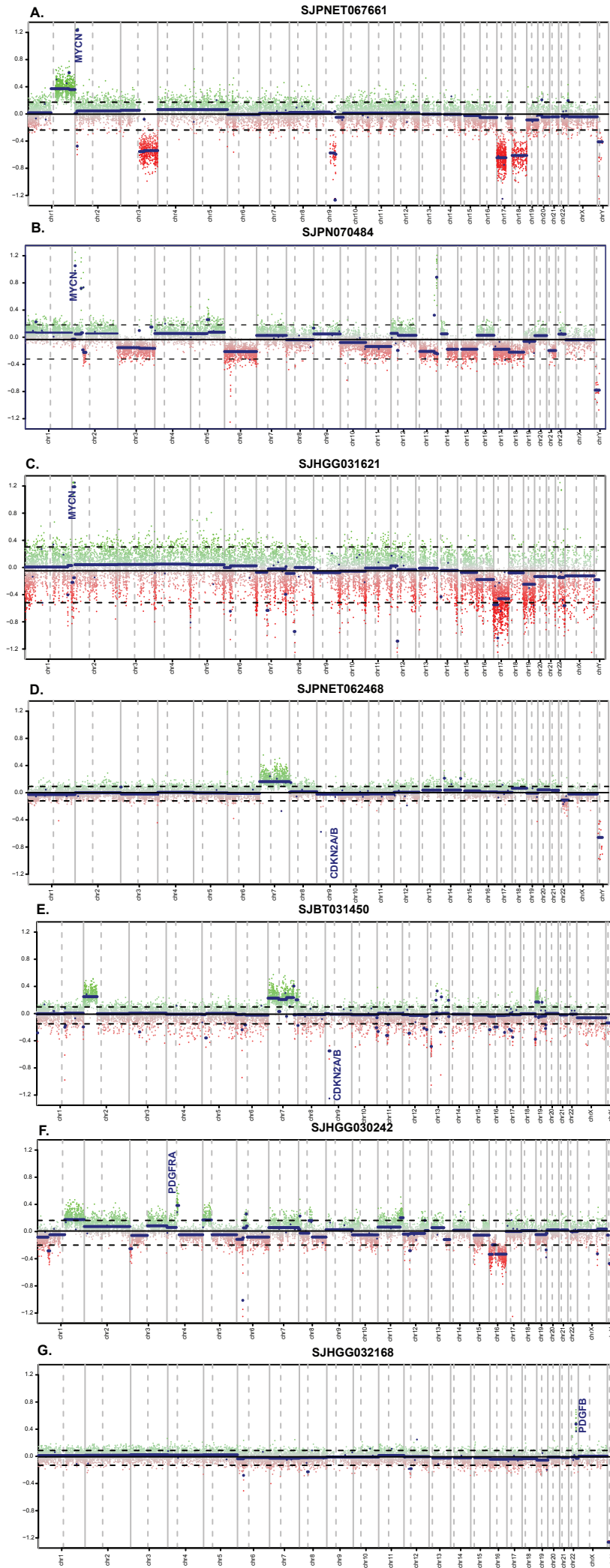
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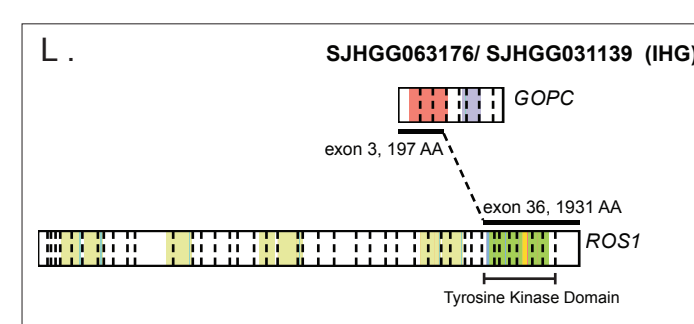
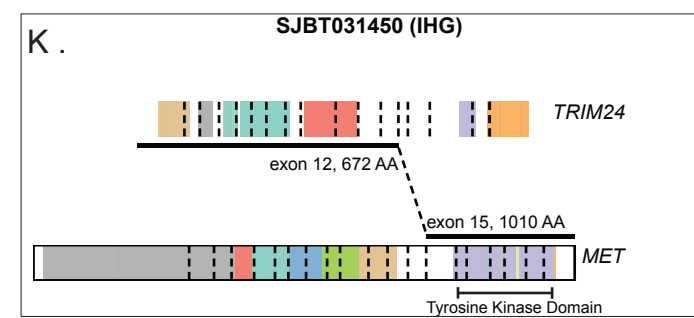
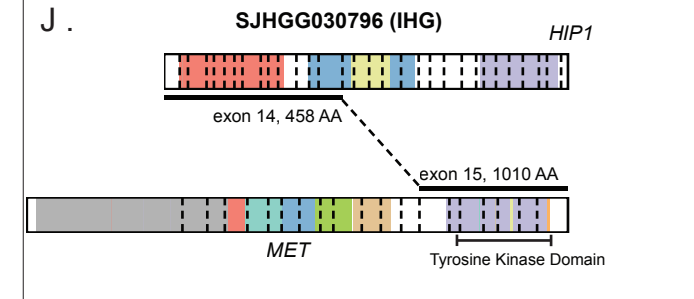
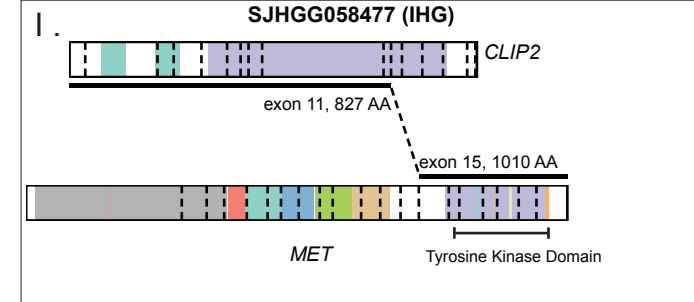
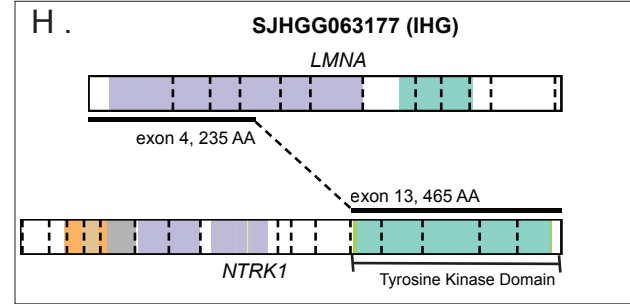
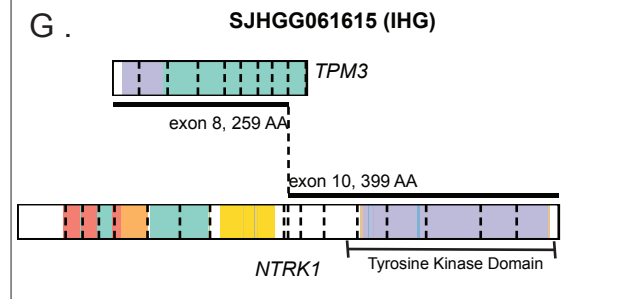
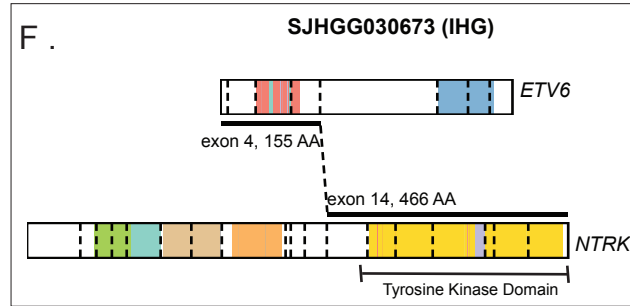
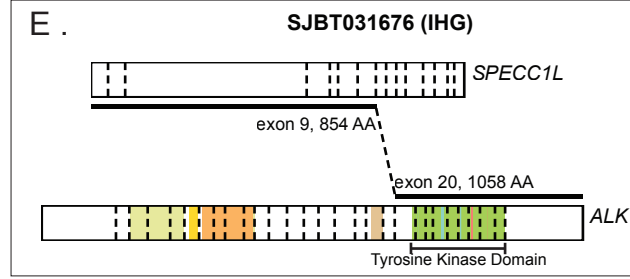
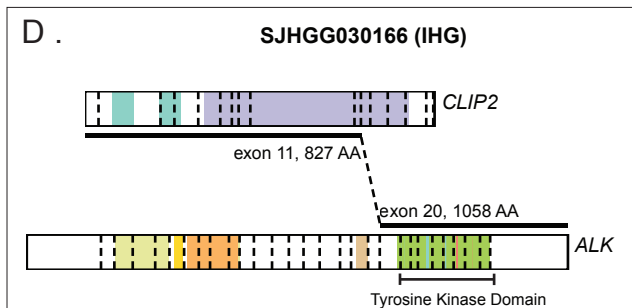
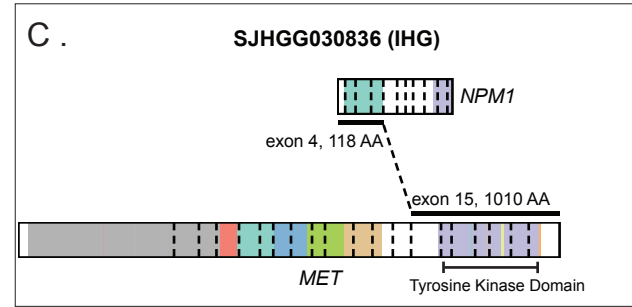
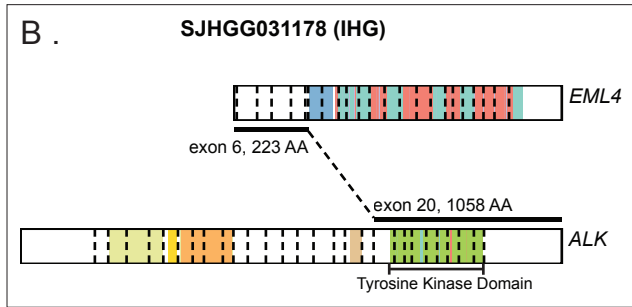
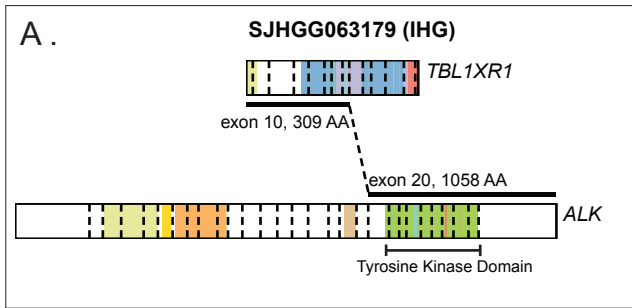
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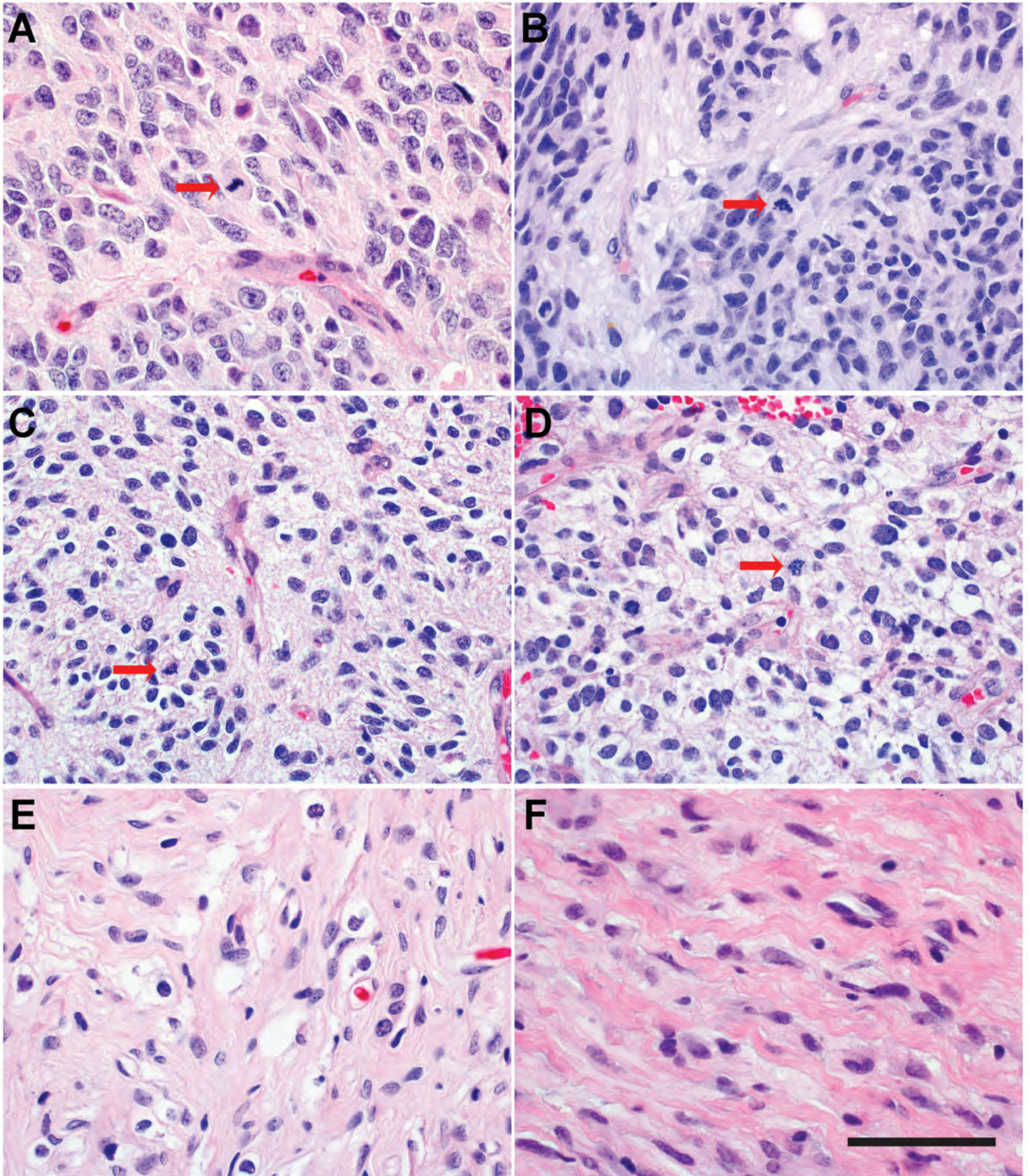


Supplemental Figure 2

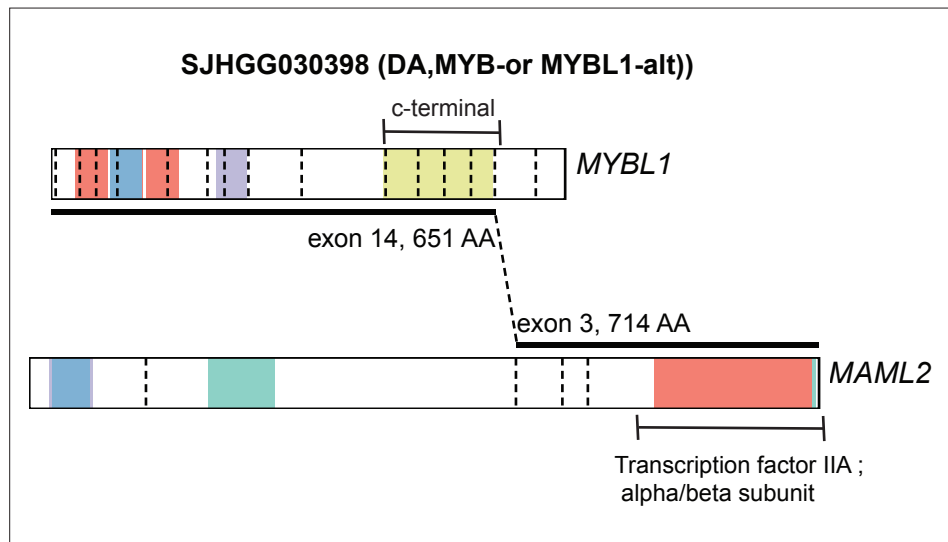


Supplemental Figure 3

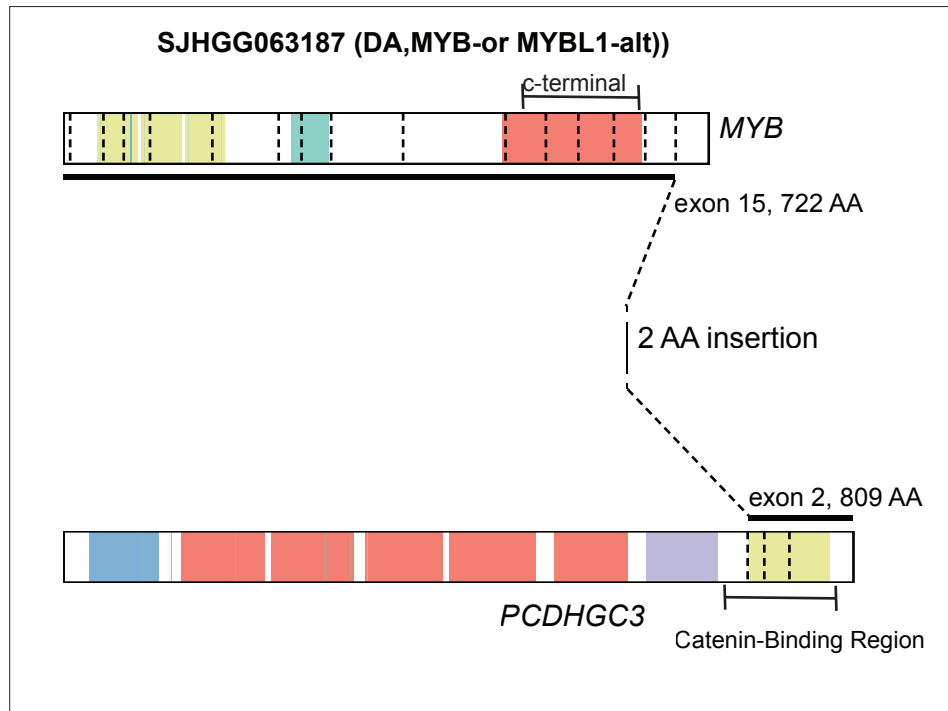




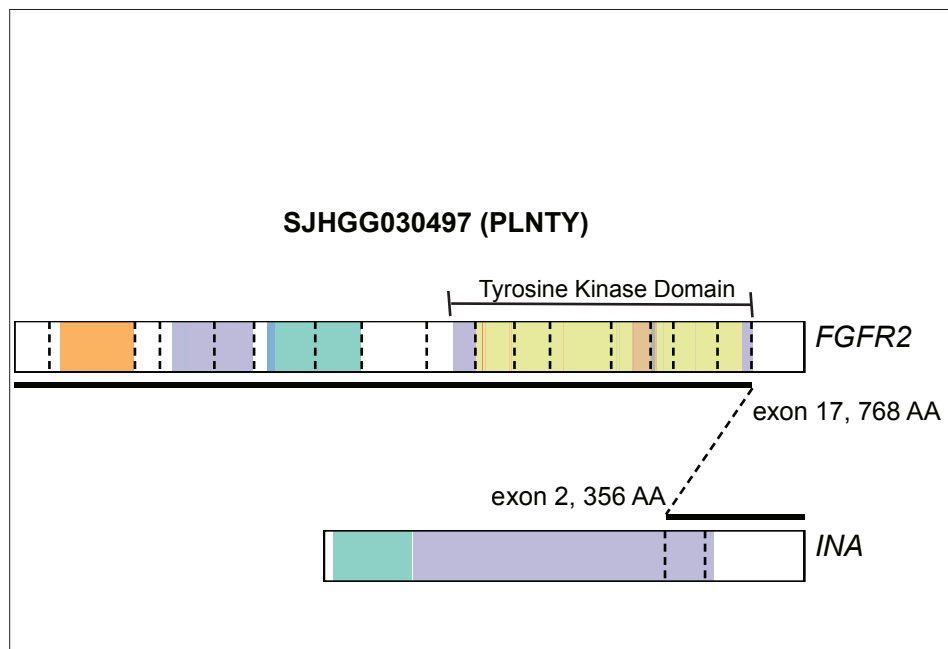
A.



B.

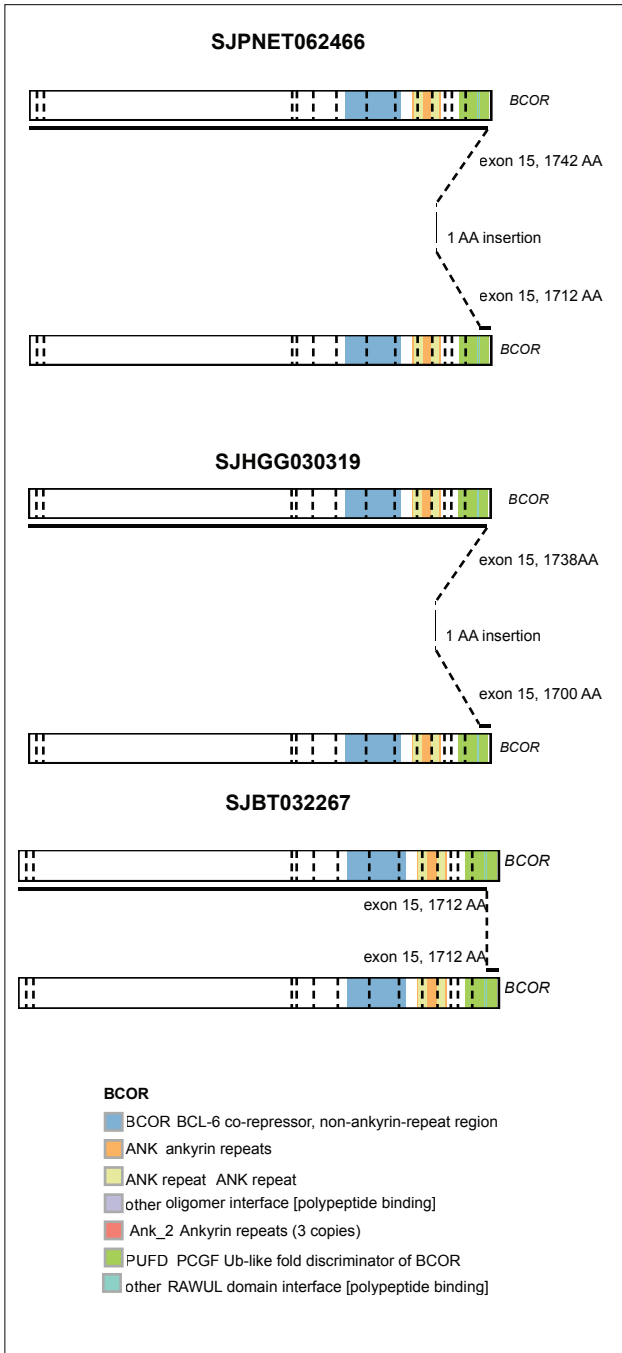


C.

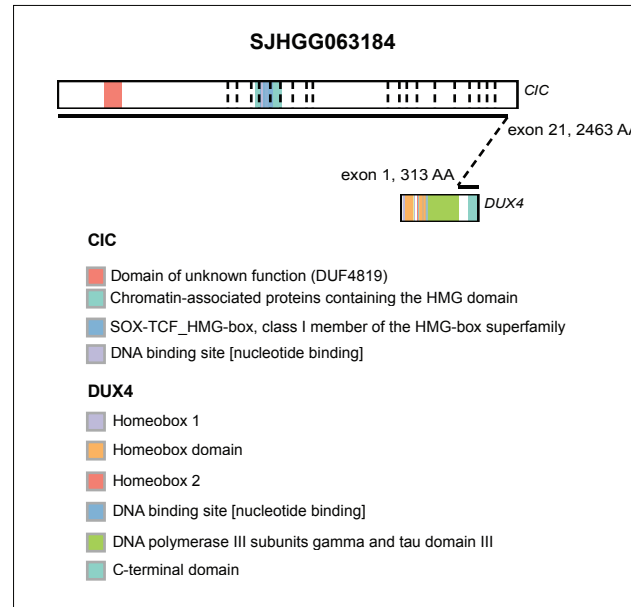


Supplemental Figure 6

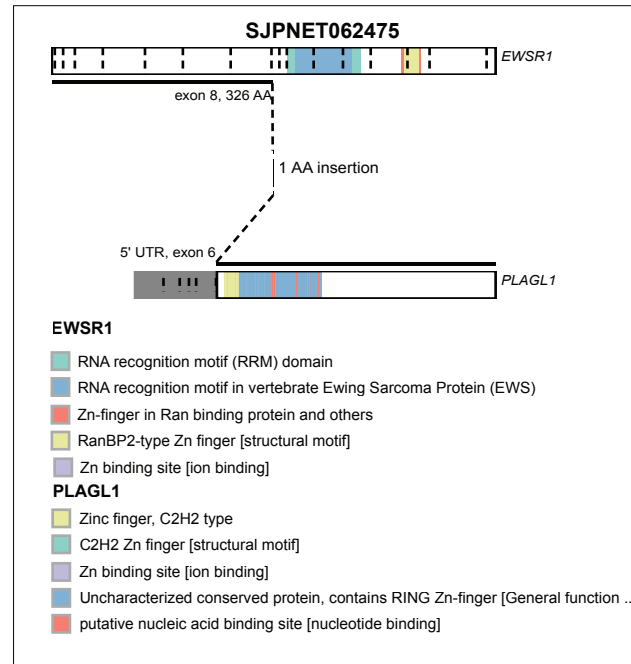
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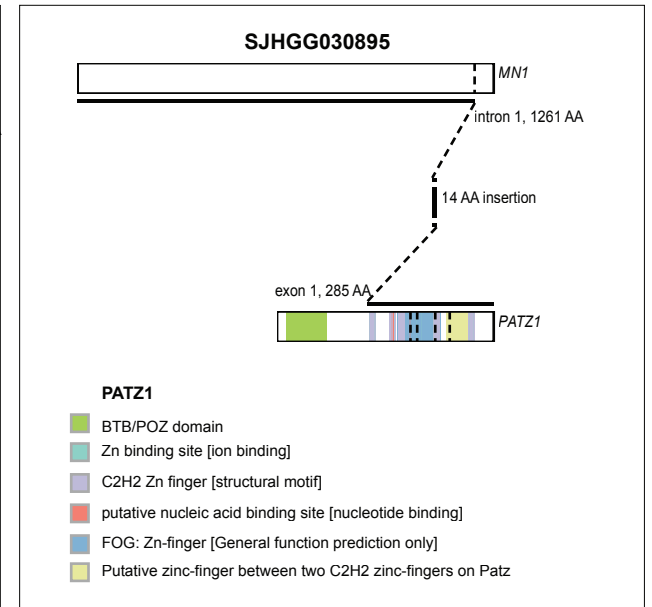
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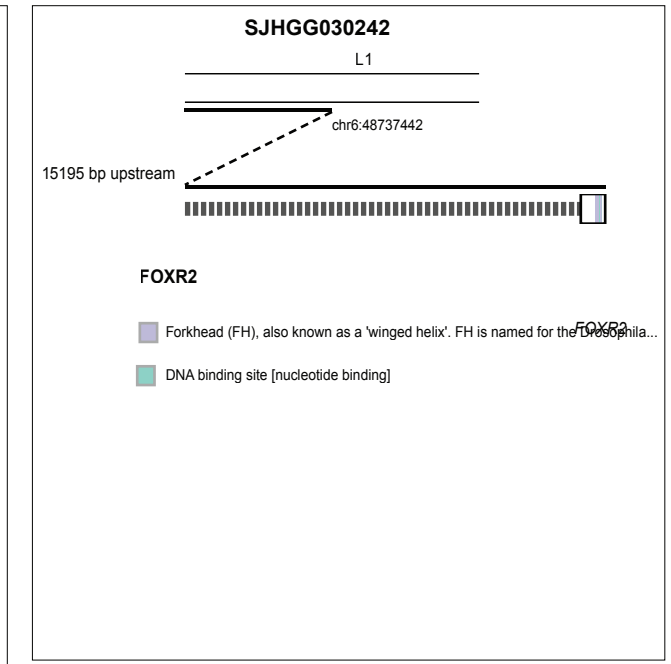
C. NET PLAGL1

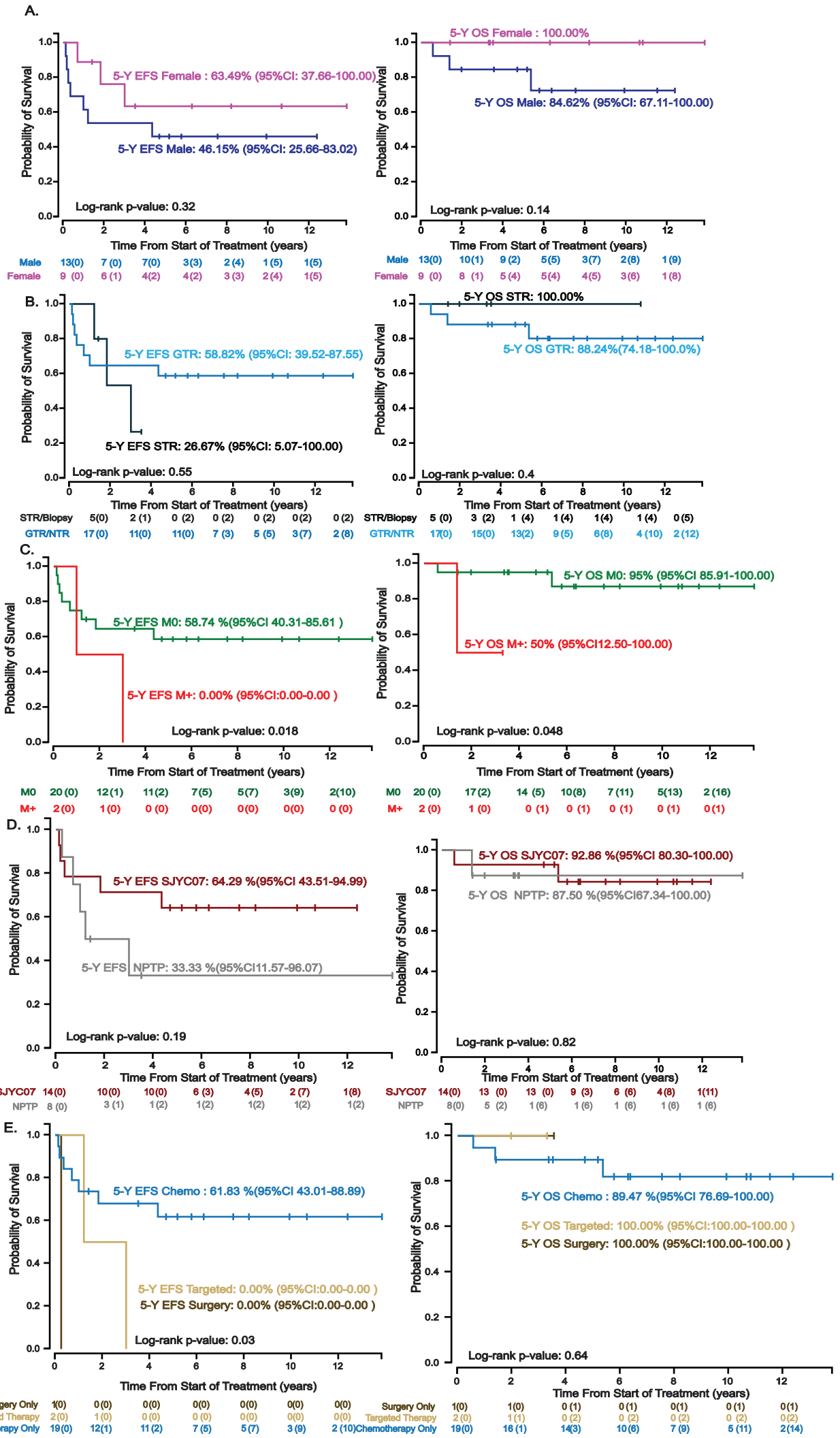


D. NET PATZ1

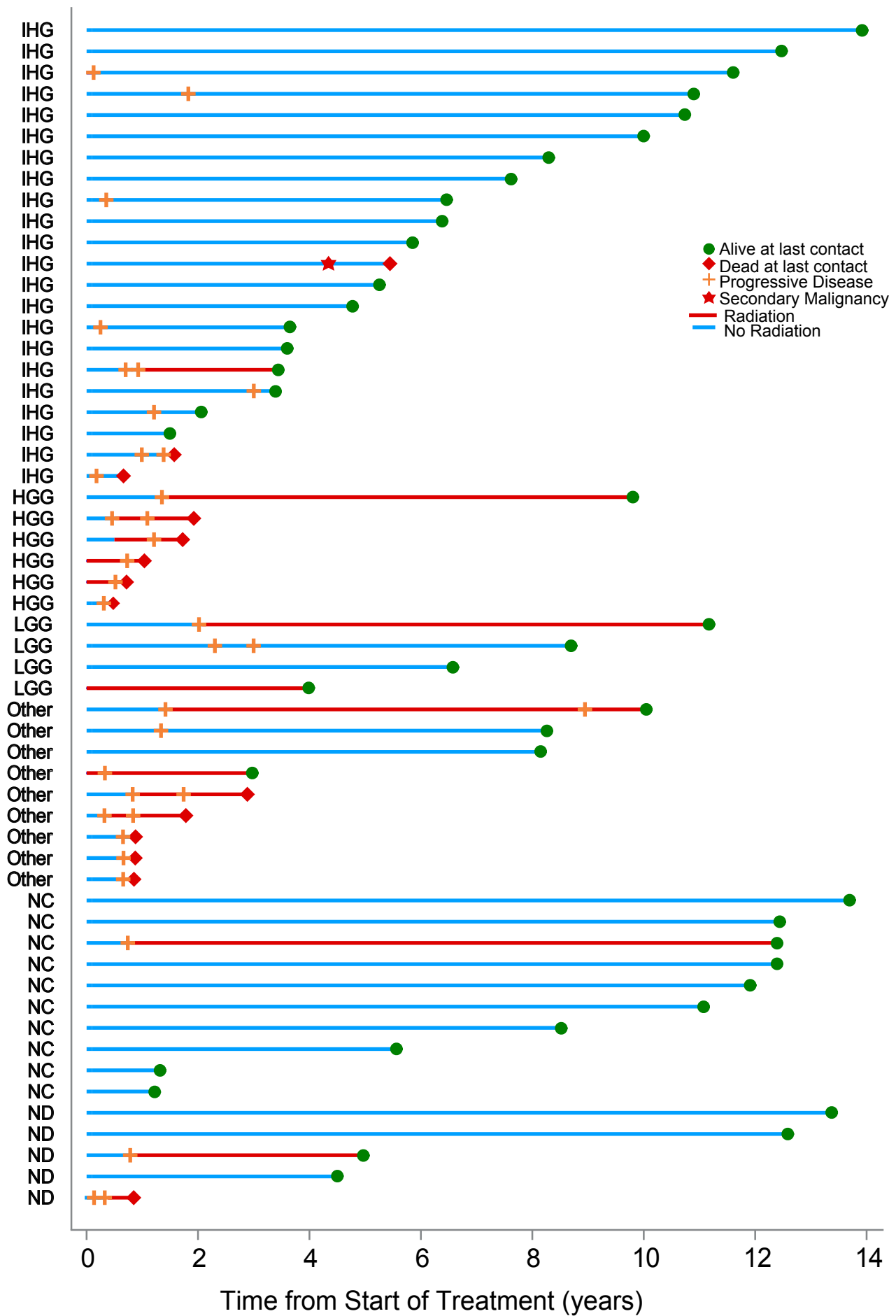


E. CNS NB FOXR2





Supplemental Figure 8



Supplemental Table 1

Integrated Histopathology and Molecular Diagnosis								Clinical Features and Outcome												
Serial No	Case ID	Integrated Diagnosis-1	Integrated Diagnosis-2	Integrated Diagnosis-3	Molecular Findings	MNP Class	Original Histology	Age (Y)	Gender	Anatomic Location	M0/M+	Resection	Protocol	Risk	Primary Treatment	PD	Relapse Treatment	Outcome	Other Event	Neuro-Cognitive Data (Yes/No)
1	SJHGG063179	IHG	IHG	IHG	TBL1XR1-ALK	IHG	AA	0.11	Male	Hemispheric	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	Yes	No Treatment	Dead	NA	No
2	SJHGG010328	IHG	IHG	IHG	PPP1CB-ALK	IHG	HGG	0.46	Male	Hemispheric	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Alive	NA	Yes
3	SJHGG073704	IHG	IHG	IHG	CDC88A-ALK	IHG	HGG	1.05	Male	Hemispheric	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Alive	NA	Yes
4	SJHGG030397	IHG	IHG	IHG	CDC88A-ALK	IHG	GB	0.10	Male	Hemispheric	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Alive	NA	Yes
5	SJHGG031178	IHG	IHG	IHG	EML4-ALK	IHG	HGG	1.59	Female	Hemispheric	M0	GTR/NTR	NPTP	SJYC07-Low/Low-Like	Chemotherapy Only	Yes	Targeted Therapy > Focal RT	Alive	NA	No
6	SJHGG030166	IHG	IHG	IHG	CLIP2-ALK	IHG	HGG	0.08	Male	Hemispheric	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Alive	NA	No
7	SJBT031676	IHG	IHG	IHG	SPECC1L-ALK	IHG	HGG	3.19	Male	Hemispheric	M0	STR/Biopsy	NPTP	Other	Targeted Therapy	Yes	Targeted Therapy	Alive	NA	No
8	SJBT031842	IHG	IHG	IHG	ALK rearrangement	NC	HGG	1.23	Female	Hemispheric	M0	STR/Biopsy	NPTP	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Alive	NA	No
9	SJHGG063182	IHG	IHG	IHG	ALK rearrangement	NC	HGG	1.49	Male	Hemispheric	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Alive	NA	No
10	SJHGG061615	IHG	IHG	IHG	TPM3-NTRK1	IHG	HGNET	0.45	Male	Hemispheric	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	Yes	Surgery	Alive	NA	No
11	SJHGG063177	IHG	IHG	IHG	LMNA-NTRK1	IHG	GB	0.18	Female	Hemispheric	M0	STR/Biopsy	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	Yes	Surgery + Chemotherapy	Alive	NA	Yes
12	SJHGG030673	IHG	IHG	IHG	ETV6-NTRK3	IHG	GB	0.11	Male	Hemispheric	M0	GTR/NTR	NPTP	Other	Surgery Only	Yes	No Treatment	Alive	NA	No
13	SJHGG058477	IHG	IHG	IHG	CLIP2-MET	NC	GB	0.03	Female	Hemispheric	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Alive	NA	No
14	SJPNET030836	IHG	IHG	IHG	NPM1-ALK	IHG	GB	0.00	Male	Hemispheric	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	Yes	Surgery + Chemotherapy	Alive	NA	No
15	SJHGG030796	IHG	IHG	IHG	HIP1-MET	IHG	GB	0.22	Female	Hemispheric	M0	STR/Biopsy	NPTP	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Alive	NA	No
16	SJBT031450	IHG	IHG	IHG	TRIM24-MET	NC	HGNET	0.55	Male	Hemispheric	M+	GTR/NTR	NPTP	SJYC07-High/High-Like	Chemotherapy Only	Yes	Surgery + Targeted Therapy	Dead	NA	No
17	SJHGG063176	IHG	IHG	IHG	GOPC-ROS1	IHG	GB	0.28	Male	Hemispheric	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Alive	NA	Yes
18	SJHGG031139	IHG	IHG	IHG	GOPC-ROS1	IHG	AA	4.40	Female	Hemispheric	M+	STR/Biopsy	NPTP	Other	Targeted Therapy	Yes	Targeted Therapy	Alive	NA	No
19	SJPNET067666	IHG	IHG	IHG	None detected	IHG	HGNET	0.12	Female	Hemispheric	M0	GTR/NTR	NPTP	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Alive	NA	Yes
20	SJHGG063178	IHG	IHG	IHG	None detected	IHG	HGNET	0.86	Male	Hemispheric	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Alive	NA	No
21	SJHGG063180	IHG	IHG	IHG	None detected	IHG	HGG	0.42	Female	Hemispheric	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Alive	NA	Yes
22	SJHGG063181	IHG	IHG	IHG	None detected	IHG	GB	0.30	Male	Hemispheric	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Dead	Secondary AML	No
1	SJPNET062468	Non-IHG	HGG	PXA	CDKN2A HD	PXA	HGNET	1.70	Female	Hemispheric	M0	STR/Biopsy	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	Yes	Focal RT	Alive	NA	Yes
2	SJEPD066767	Non-IHG	HGG	DMG H3K27M	H3K27M	DMGH3K27M	AA	2.37	Male	Midline	M0	STR/Biopsy	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	Yes	Focal RT	Dead	NA	No
3	SJPNET070484	Non-IHG	HGG	pHGG MYCN	MYCN Amplification	NC	HGNET	2.82	Male	Midline	M+	STR/Biopsy	SJYC07	SJYC07-High/High-Like	Chemotherapy Only	Yes	Palliative	Dead	NA	No
4	SJHGG031321	Non-IHG	HGG	pHGG MYCN	NF1, TP53	pHGGMYCN	GB	3.82	Male	Midline	M0	STR/Biopsy	NPTP	Other	Focal RT +/- Chemotherapy	Yes	Palliative	Dead	NA	No
5	SJHGG031621	Non-IHG	HGG	pHGG MYCN	MYCN Amplification	NC	AA	3.29	Male	Midline	M0	STR/Biopsy	NPTP	Other	Focal RT +/- Chemotherapy	Yes	Palliative	Dead	NA	No
6	SJPNET067661	Non-IHG	HGG	pHGG MYCN	MYCN Amplification	pHGGMYCN	HGNET	3.08	Female	Hemispheric	M0	GTR/NTR	NPTP	SJYC07-High/High-Like	Chemotherapy Only	Yes	Focal RT	Dead	NA	No
1	SJHGG063183	Non-IHG	LGG	DA,MYB- or MYBL1-alt	MYB-PCDHGA1	DA MYB/MYBL1	AA	1.90	Female	Hemispheric	M0	STR/Biopsy	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	Yes	Surgery + Radiation	Alive	NA	Yes
2	SJHGG063183	Non-IHG	LGG	PA	BRAF rearrangement	PA	APA	2.69	Female	Midline	M+	STR/Biopsy	SJYC07	SJYC07-High/High-Like	Chemotherapy Only	Yes	Targeted Therapy	Alive	NA	No
3	SJHGG030398	Non-IHG	LGG	DA,MYB- or MYBL1-alt	MYBL1-MAML2	DA MYB/MYBL1	AA	2.23	Female	Hemispheric	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Alive	NA	Yes
4	SJHGG030497	Non-IHG	LGG	PLNTY	FGFR2-INA	GG	AA	3.42	Female	Hemispheric	M0	GTR/NTR	NPTP	Other	Focal RT +/- Chemotherapy	No	NA	Alive	NA	No
1	SJBT032287	Non-IHG	Other-CNS Tumors	CNS BCOR ITD	BCOR ITD	CNS BCOR ITD	HGNET	1.83	Female	Hemispheric	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	Yes	Surgery + Radiation (CS)	Alive	NA	Yes
2	SJPNET062475	Non-IHG	Other-CNS Tumors	NET PLAGL1 FUS	EWSR1-PLAGL1	NET PLAGL1	HGNET	2.45	Female	Hemispheric	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	Yes	Surgery	Alive	NA	Yes
3	SJHGG030895	Non-IHG	Other-CNS Tumors	NET PATZ1	MN1-PATZ1	NET PATZ1	GB	3.63	Female	Hemispheric	M0	GTR/NTR	NPTP	Other	Focal RT +/- Chemotherapy	Yes	Surveillance	Alive	NA	No
4	SJPNET062466	Non-IHG	Other-CNS Tumors	CNS BCOR ITD	BCOR ITD	CNS BCOR ITD	HGG	1.83	Male	Cerebellum	M0	STR/Biopsy	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	Yes	Palliative	Dead	NA	Yes
5	SJHGG063186	Non-IHG	Other-CNS Tumors	ET PLAG	Numerous PLAG1 fusions with amplification	ET PLAG	GB	2.49	Male	Hemispheric	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Alive	NA	Yes
6	SJHGG070416	Non-IHG	Other-CNS Tumors	ETMR	Fusion with C19MC miRs	ETMR_Atyp	HGG	1.53	Male	Cerebellum	M+	STR/Biopsy	SJYC07	SJYC07-High/High-Like	Chemotherapy Only	Yes	Unknown	Dead	NA	No
7	SJHGG063184	Non-IHG	Other-CNS Tumors	CNS SARC CIC	CIC-DUX4	CNS SARC CIC	PMG	1.88	Male	Hemispheric	M0	STR/Biopsy	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	Yes	Surgery + Radiation (Focal)	Dead	NA	No
8	SJHGG030242	Non-IHG	Other-CNS Tumors	CNS NB FOXR2	L1-FOXR2	CNS NB FOXR2	HGG	1.02	Male	Hemispheric	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	Yes	Surgery + Radiation (Focal)	Dead	NA	No
9	SJHGG030319	Non-IHG	Other-CNS Tumors	CNS BCOR ITD	BCOR ITD	CNS BCOR ITD	GB	1.42	Male	Hemispheric	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	Yes	Surgery + Radiation (Focal)	Dead	NA	No
1	SJHGG009016	Non-IHG	NC	NC	NA	NC	GB	0.84	Male	Hemispheric	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Alive	NA	Yes
2	SJHGG056496	Non-IHG	NC	NC	NA	NC	HGNET	1.13	Male	Cerebellum	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Alive	NA	No
3	SJHGG058499	Non-IHG	NC	NC	NA	NC	HGNET	2.94	Male	Hemispheric	M0	STR/Biopsy	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	Yes	Focal RT	Alive	NA	Yes
4	SJHGG063174	Non-IHG	NC	NC	NA	NC	GB	0.02	Male	Hemispheric	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Alive	NA	Yes
5	SJHGG063201	Non-IHG	NC	NC	NA	NC	AA	1.00	Male	Hemispheric	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Alive	NA	Yes
6	SJHGG063188	Non-IHG	NC	NC	NA	NC	AA	1.41	Female	Cerebellum	M+	STR/Biopsy	SJYC07	SJYC07-High/High-Like	Chemotherapy Only	No	NA	Alive	NA	No
7	SJHGG013318	Non-IHG	NC	NC	NA	NC	AA	1.44	Male	Hemispheric	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Alive	NA	Yes
8	SJHGG063202	Non-IHG	NC	NC	NA	NC	AA	0.54	Male	Midline	M+	STR/Biopsy	SJYC07	SJYC07-High/High-Like	Chemotherapy Only	No	NA	Alive	NA	Yes
9	SJHGG032034	Non-IHG	NC	NC	NA	NC	GB	0.87	Female	Hemispheric	M0	GTR/NTR	NPTP	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Alive	NA	No
10	SJHGG032168	Non-IHG	NC	NC	NA	NC	GB	1.56	Female	Midline	M0	STR/Biopsy	NPTP	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Alive	NA	No
1	SJHGG026	ND	ND	ND	NA	ND	HGNET	1.53	Female	Hemispheric	M0	GTR/NTR	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Alive	NA	NA
2	SJHGG02	ND	ND	ND	NA	ND	AA	1.02	Female	Midline	M0	STR/Biopsy	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Alive	NA	NA
3	SJHGG003	ND	ND	ND	NA	ND	AA	2.45	Male	Midline	M0	STR/Biopsy	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	Yes	Chemotherapy	Dead	NA	NA
4	SJHGG063203	ND	ND	ND	NA	ND	HGG	0.68	Male	Midline	M0	STR/Biopsy	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	No	NA	Alive	NA	NA
5	SJHGG001	ND	ND	ND	NA	ND	AA	0.63	Female	Midline	M0	STR/Biopsy	SJYC07	SJYC07-Low/Low-Like	Chemotherapy Only	Yes	Focal RT	Alive	NA	NA

Supplemental Table 2

Patient ID	Anatomical Location	Anatomical Location (Hemispheric/Midline)	Anatomical Location (Supratentorial/Infratentorial)	Leptomeningeal spread (Yes/No/NE)	Margins (Circumscribed/Infiltrative)	Restricted diffusion in solid component (Yes/No/NE)	Hemorrhage Grade (0,1,2,3,4)	More than equal to 25% of Tumor is Hemorrhage (Yes/No)	T1 signal in solid component	T1 hypointensity (yes vs no)	T2 signal in solid component	T2 hypointensity (yes vs no)	Enhancement (Yes/No/NE)	Cysts/Necrosis Grade: (0/1/2/3/4/NE)	More than equal to 25% Cystic/Necrotic (Yes/No/NE)	Calcification (Yes/No/NE)	Midline Shift (Yes/No)	Hydrocephalous (Yes/No)	Uncal herniation (Yes/No)	Radiological Diagnosis by Blinded Radiologist (Tier-2)	Radiological Diagnosis by Blinded Radiologist (Tier-1)
SJHGG063187	Right parietal, temporal, occipital and to a lesser extent, frontal lobe, extending into splenium and right thalamus	Hemispheric	Supratentorial	Yes	Infiltrative	No	0	No	Hypointense	Yes	Hyperintense	No	Yes	0	No	No	Yes	Yes	No	High grade glioma	High Grade Glioma
SJHGG063188	Diffuse involvement of cerebrum and cerebellum	Hemispheric and Cerebellar	Supratentorial and Infratentorial	No	Circumscribed	No	0	No	isointense	No	Hyperintense	No	Yes	0	No	No	No	No	No	High grade glioma	High Grade Glioma
SJHGG013318	Left temporal lobe	Hemispheric	Supratentorial	No	Circumscribed	No	0	No	isointense	No	Hyperintense	No	Yes	0	No	No	No	No	No	Low Grade Glioma	Low Grade Glioma
SJHGG063183	Optic chiasm/hypothalamus, extending into left optic tract and third ventricle	Midline	Supratentorial	Yes	Circumscribed	No	1	No	Hypointense	Yes	Hyperintense	No	Yes	1	No	Yes	No	Yes	No	Low grade glioma	Low grade glioma
SJHGG030398	Right inferior parietal lobule, juxtacortical	Hemispheric	Supratentorial	No	Circumscribed	No	0	No	isointense	No	Hyperintense	No	Yes	0	No	No	No	No	No	High grade glioma	High Grade Glioma
SJHGG063202	Bilateral thalami, extending into midbrain	Midline	Supratentorial	No	Infiltrative	Yes	0	No	isointense	No	Hyperintense	No	No	0	No	No	No	Yes	No	High Grade Glioma	High Grade Glioma
SJHGG030497	Posterior aspect of left middle temporal gyrus, cortically based	Hemispheric	Supratentorial	No	Circumscribed	No	1	No	isointense	No	Hyperintense	No	Yes	4	Yes	Yes	No	No	No	Low grade glioma	Low grade glioma
SJPNET067666	Right frontal, parietal, temporal and occipital lobes	Hemispheric	Supratentorial	No	Circumscribed	Yes	3	Yes	isointense	No	Hypointense	Yes	Yes	1	No	No	No	Yes	No	IHG like tumor	IHG like tumor
SJHGG009016	Left frontal lobe	Hemispheric	Supratentorial	No	Circumscribed	Yes	1	No	isointense	No	Hypointense	Yes	Yes	3	Yes	No	No	No	No	IHG like tumor	IHG like tumor
SJHGG063176	Left frontal and parietal lobes	Hemispheric	Supratentorial	No	Circumscribed	Yes	1	No	isointense	No	Hypointense	Yes	Yes	4	Yes	No	Yes	No	No	IHG like tumor	IHG like tumor
SJHGG063178	Right pre/post central gyri	Hemispheric	Supratentorial	No	Circumscribed	No	1	No	isointense	No	Hyperintense	No	Yes	0	No	No	No	No	No	Incomplete DWI sequences-NE	NE
SJHGG058477	Right frontal, parietal and temporal lobes, extending into right lateral ventricle	Hemispheric	Supratentorial	No	Circumscribed	Yes	2	Yes	isointense	No	isointense	No	Yes	2	Yes	No	Yes	Yes	No	IHG like tumor	IHG like tumor
SJHGG063174	Left parietal, temporal and occipital lobes, extension into left basal ganglia and thalamus	Hemispheric	Supratentorial	No	Circumscribed	Yes	3	Yes	isointense	No	isointense	No	Yes	3	Yes	No	Yes	Yes	No	IHG like tumor	IHG like tumor
SJHGG063179	Right frontal white matter	Hemispheric	Supratentorial	NE	Circumscribed	NE	4	Yes	Iso and Hyperintense	No	Hypointense and Hyperintense	No	NE	NE	NE	No	Yes	Yes	No	Entire mass is hemorrhagic-NE	NE
SJHGG010328	Right parietal and occipital lobes, extending into right lateral ventricle	Hemispheric	Supratentorial	No	Circumscribed	NE	4	Yes	Iso and Hyperintense	No	Hypointense and Hyperintense	No	NE	NE	NE	No	No	No	No	Entire mass is hemorrhagic-NE	NE
SJPNET030836	Left occipital, parietal and temporal lobe	Hemispheric	Supratentorial	No	Circumscribed	NE	4	Yes	isointense	No	isointense	No	Yes	3	Yes	No	Yes	Yes	No	IHG like tumor	IHG like tumor
SJHGG030166	Left frontal deep white matter, extending into left basal ganglia and lateral ventricle	Hemispheric	Supratentorial	No	Circumscribed	NE	4	Yes	Iso and Hyperintense	No	Hypointense and Hyperintense	No	NE	NE	NE	No	No	Yes	No	Entire mass is hemorrhagic-NE	NE
SJHGG063182	Right parietal lobe	Hemispheric	Supratentorial	No	Circumscribed	Yes	1	No	isointense	No	Hyperintense	No	Yes	4	Yes	No	No	Yes	No	High grade glioma	High Grade Glioma
SJHGG030397	Right parietal and occipital lobes, extending into right lateral ventricle	Hemispheric	Supratentorial	No	Circumscribed	NE	4	Yes	Iso and Hyperintense	No	Hypointense and Hyperintense	No	NE	2	Yes	No	No	Yes	No	Entire mass is hemorrhagic-NE	NE
SJHGG030673	Left frontal lobe	Hemispheric	Supratentorial	NE	Infiltrative	Yes	1	No	Hypointense	No	Hypointense	Yes	NE	2	Yes	Yes	No	Yes	No	High grade glioma	High grade glioma
SJHGG030796	Right parietal, temporal and occipital lobes	Hemispheric	Supratentorial	NE	Circumscribed	NE	4	Yes	Iso and Hyperintense	No	Hypointense and Hyperintense	No	NE	1	No	No	Yes	No	No	Entire mass is hemorrhagic-NE	NE
SJHGG031178	Left frontal and temporal lobes	Hemispheric	Supratentorial	No	Circumscribed	Yes	2	Yes	isointense	No	isointense	No	Yes	2	Yes	Yes	Yes	No	No	High grade glioma/Other (ATRT)	Other
SJBT031676	Left parietal, temporal and occipital lobes, extending to splenium	Hemispheric	Supratentorial	No	Circumscribed	NE	2	Yes	isointense	No	isointense	No	Yes	1	No	Yes	Yes	Yes	No	IHG like tumor	IHG like tumor
SJHGG061615	Right frontal, parietal, occipital and temporal lobes	Hemispheric	Supratentorial	No	Circumscribed	Yes	1	No	Hypointense	Yes	Hypointense	Yes	Yes	3	Yes	NE	Yes	Yes	Yes	IHG-like tumor	IHG-like tumor
SJHGG063180	Left frontal, parietal and temporal lobes, smaller tumor in right frontal lobe	Hemispheric	Supratentorial	No	Circumscribed	Yes	0	No	isointense	No	Hypointense	Yes	Yes	2	Yes	NE	Yes	No	Yes	IHG-like tumor	IHG-like tumor
SJHGG063177	Left frontal and temporal lobes	Hemispheric	Supratentorial	No	Circumscribed	Yes	2	Yes	Hypointense	Yes	Hypointense	Yes	Yes	2	Yes	NE	Yes	No	Yes	IHG-like tumor	IHG-like tumor
SJHGG063181	Right frontal, parietal and temporal lobes	Hemispheric	Supratentorial	No	Circumscribed	Yes	3	Yes	Hypointense	Yes	Hypointense	Yes	Yes	3	Yes	NE	Yes	No	Yes	IHG-like tumor	IHG-like tumor
SJPNET067661	Left frontal lobe	Hemispheric	Supratentorial	No	Infiltrative	Yes	0	No	isointense	No	Hyperintense	No	Yes	0	No	No	No	No	No	High grade glioma	High grade glioma
SJPNET062468	Left temporal, occipital and parietal lobes	Hemispheric	Supratentorial	No	Circumscribed	Yes	0	No	isointense	No	Hypointense	Yes	Yes	2	Yes	NE	Yes	No	No	High grade glioma/Other (ATRT)	Other
SJEPD066767	Brainstem: right cerebral peduncle, right greater than left pons and right lateral medulla	Brainstem	Infratentorial	No	Circumscribed	No	0	No	Hypointense	Yes	Hyperintense	No	No	0	No	No	No	Yes	No	High grade glioma	High Grade Glioma
SJPNET070484	Right thalamus/posterior limb of internal capsule, cerebral peduncle, corona radiata, centrum semiovale, left thalamus, splenium	Midline	Supratentorial	No	Infiltrative	Yes	0	No	isointense	No	Hyperintense	No	Yes	2	Yes	No	No	Yes	No	High grade glioma	High Grade Glioma
SJHGG031139	Multiple cortical and subcortical lesions in the inferior left frontal lobe	Hemispheric	Supratentorial	No	Circumscribed	Yes	0	No	isointense	No	Hyperintense	No	Yes	0	No	No	No	No	No	High grade glioma	High grade glioma
SJHGG031321	Left globus pallidus, thalamus, optic tract, centrum semiovale, hypothalamus and left cerebral peduncle. Crosses midline at hypothalamus	Midline	Supratentorial	No	Infiltrative	No	0	No	isointense	No	isointense	No	Yes	1	No	No	Yes	No	No	High grade glioma	High grade glioma
SJBT031450	Left occipital and posterior temporal lobes	Hemispheric	Supratentorial	Yes	Circumscribed	Yes	2	Yes	isointense	No	Hyperintense	No	Yes	2	Yes	No	Yes	No	No	IHG like tumor	IHG like tumor
SJHGG031621	Right greater than left pons, right tectum and bilateral thalam	Midline	Infratentorial	No	Infiltrative	yes	0	No	isointense	No	Hyperintense	No	Yes	1	No	No	No	Yes	No	High grade glioma	High grade glioma
SJHGG032168	Brainstem: right greater than left pons and medulla	Midline	Infratentorial	No	Infiltrative	Yes	0	No	Hypointense	Yes	Hyperintense	No	No	0	No	No	No	No	No	High grade glioma	High grade glioma
SJPNET062466	Right greater than left postero-inferior cerebellar hemispheres and vermis	Cerebellar	Infratentorial	No	Circumscribed	Yes	1	No	Hypointense	Yes	Hyperintense	No	Yes	2	Yes	NE	No	Yes	No	Other (ATRT)	Other
SJBT032267	Right parietal, temporal and occipital lobes, extending into right lateral ventricle	Hemispheric	Supratentorial	No	Circumscribed	Yes	2	Yes	Hypointense	Yes	Hyperintense	No	Yes	0	No	NE	Yes	No	No	High grade glioma/Other (ETMR)	Other
SJHGG063184	Left frontal deep white matter, extending into the left lateral ventricle	Hemispheric	Supratentorial	No	Circumscribed	NE	3	Yes	Hypointense	Yes	Hyperintense	No	Yes	4	Yes	NE	Yes	No	No	No ADC map-NE	NE
SJHGG030242	Left basal ganglia/subinsular region	Hemispheric	Supratentorial	No	Circumscribed	Yes	2	Yes	Hypointense	Yes	Hyperintense	No	Yes	3	Yes	No	No	No	No	High grade glioma/Other (ATRT)	Other
SJHGG030319	Left temporal lobe	Hemispheric	Supratentorial	No	Circumscribed	Yes	1	No	isointense	No	Hyperintense	No	Yes	0	No	Yes	No	No	No	High grade glioma/Other(ETMR)	Other

Supplemental Table 3

	IHG (N=20)	HGG (N=6)	Other-CNS tumor (N=5)	LGG (n=4)	Total (N=35)	P-value
Anatomical Location N (%)						0.0011
Brainstem	0 (0.0%)	1 (16.7%)	0 (0.0%)	0 (0.0%)	1 (2.9%)	
Cerebellar	0 (0.0%)	0 (0.0%)	1 (20.0%)	0 (0.0%)	1 (2.9%)	
Hemispheric	20 (100.0%)	2 (33.3%)	4 (80.0%)	3 (75.0%)	29 (82.9%)	
Midline	0 (0.0%)	3 (50.0%)	0 (0.0%)	1 (25.0%)	4 (11.4%)	
Missing	0	0	0	0	0	
Anatomical Location N (%)						0.0512
Infratentorial	0 (0.0%)	3 (33.3%)	1 (20.0%)	0 (0.0%)	4 (10.0%)	
Supratentorial	20 (100.0%)	4 (66.7%)	4 (80.0%)	4 (100.0%)	36 (90.0%)	
Missing	0	0	0	0	0	
Leptomeningeal Spread N (%)						0.0881
No	16 (94.1%)	6 (100.0%)	5 (100.0%)	2 (50.0%)	29 (90.6%)	
Yes	1 (5.9%)	0 (0.0%)	0 (0.0%)	2 (50.0%)	3 (9.4%)	
Not evaluable	3	0	0	0	3	
Margins N (%)						0.0073
Circumscribed	19 (95.0%)	2 (33.3%)	5 (100.0%)	3 (75.0%)	20 (82.9%)	
Infiltrative	1 (5.0%)	4 (66.7%)	0 (0.0%)	1 (25.0%)	6 (17.1%)	
Restricted Diffusion N (%)						0.0057
No	2 (14.3%)	2 (33.3%)	0 (0.0%)	4 (100.0%)	8 (28.6%)	
Yes	12 (85.7%)	4 (66.7%)	4 (100.0%)	0 (0.0%)	24 (71.4%)	
Not evaluable	6	0	1	0	7	
>25% Tumor Hemorrhage N (%)						0.0036
No	7 (35.0%)	6 (100.0%)	2 (40.0%)	4 (100.0%)	19 (54.3%)	
Yes	13 (65.0%)	0 (0.0%)	3 (60.0%)	0 (0.0%)	17 (45.7%)	
T1 Hypointensity N (%)						0.0207
No	17 (85.0%)	5 (83.3%)	1 (20.0%)	2 (50.0%)	25 (71.4%)	
Yes	3 (15.0%)	1 (16.7%)	4 (80.0%)	2 (50.0%)	10 (28.6%)	
T2 Hypointensity N (%)						0.3453
No	13 (65.0%)	5 (83.3%)	5 (100.0%)	4 (100.0%)	27 (77.1%)	
Yes	7 (35.0%)	1 (16.7%)	0 (0.0%)	0 (0.0%)	8 (22.9%)	
Enhancement N (%)						0.5172
No	0 (0.0%)	1 (16.7%)	0 (0.0%)	0 (0.0%)	1 (3.4%)	
Yes	14 (100.0%)	5 (83.3%)	5 (100.0%)	4 (100.0%)	28 (96.6%)	
Not evaluable	6	0	0	0	6	
> 25% Tumor Cystic N (%)						0.2612
No	5 (29.4%)	4 (66.7%)	2 (40.0%)	3 (75.0%)	14 (43.8%)	
Yes	12 (70.6%)	2 (33.3%)	3 (60.0%)	1 (25.0%)	18 (62.3%)	
Not evaluable	3	0	0	0	3	
Calcification N (%)						0.1516
No	13 (81.3%)	5 (100.0%)	1 (50.0%)	2 (50.0%)	21 (77.8%)	
Yes	3 (18.8%)	0 (0.0%)	1 (50.0%)	2 (50.0%)	6 (22.2%)	
Not evaluable	4	1	3	0	8	
Midline Shift N (%)						0.5084
No	8 (40.0%)	4 (66.7%)	3 (60.0%)	3 (75.0%)	18 (51.4%)	
Yes	12 (60.0%)	2 (33.3%)	2 (40.0%)	1 (25.0%)	17 (48.6%)	
Hydrocephalous N (%)						0.6378
No	9 (45.0%)	3 (50.0%)	4 (80.0%)	2 (50.0%)	18 (51.4%)	
Yes	11 (55.0%)	3 (50.0%)	1 (20.0%)	2 (50.0%)	17 (48.6%)	
Uncal Herniation N (%)						0.6516
No	16 (80.0%)	6 (100.0%)	5 (100.0%)	4 (100.0%)	31 (88.6%)	
Yes	4 (20.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4 (11.4%)	

Supplemental Table 4

Diagnosis	ID	First Craniotomy Indication	Result of First Craniotomy	Transfusion During Required During Surgery	Hypovolemic Shock During Surgery	Craniotomy -2	Reason/Indication	Result	Massive Transfusion During Required During Surgery	Hypovolemic Shock During Surgery	Craniotomy -3	Reason/Indication	Result	Massive Transfusion During Surgery
IHG	SJBT031842	Decompression of Brain	STR	Yes	No	No	NA	NA	NA	NA	NA	NA	NA	NA
IHG	SJBT031676	Maximal Safe Surgical Resection	Aborted Due to Bleeding (STR)	Yes	Yes	Yes	Maximal Safe Surgical Resection	Aborted Due to Bleeding (STR)	Yes	No	Yes	Attempt-Maximal Safe Surgical Resection	GTR	No
IHG	SJBT031450	Tissue Diagnosis/Biopsy	Biopsy	No	No	Yes	Worsening Clinical status - increased ICP	NTR	Yes	No	Yes	Recurrence	NTR	NA
IHG	SJHGG010328	Decompression of Brain	STR	Yes	No	Yes	Maximal Safe Surgical Resection	GTR	No	No	No	NA	NA	NA
IHG	SJHGG030166	Maximal Safe Surgical Resection	GTR	No	No	No	NA	NA	NA	NA	NA	NA	NA	NA
IHG	SJHGG030397	Maximal Safe Surgical Resection	GTR	Yes	No	Yes	Evacuation of Resection Bed Hemorrhage	Successful	Yes	No	No	NA	NA	NA
IHG	SJHGG030673	Maximal Safe Surgical Resection	GTR	No	No	Yes	NA	NA	NA	NA	No	NA	NA	NA
IHG	SJHGG030796	Maximal Safe Surgical Resection/ Decompression of Brain	Aborted Due to Bleeding (STR)	Yes	No	Yes	Development of Intra-Tumoral Hemorrhage	STR	Yes	Yes	No	NA	NA	NA
IHG	SJHGG031139	Tissue Diagnosis/Biopsy	Biopsy	No	No	No	NA	NA	NA	NA	NA	NA	NA	NA
IHG	SJHGG031178	Maximal Safe Surgical Resection/ Decompression of Brain	NTR	No	No	Yes	Tumor Re-growth	NTR	No	No	Yes	Recurrence	NTR	No
IHG	SJHGG063182	Maximal Safe Surgical Resection	GTR	No	No	No	NA	NA	NA	NA	NA	NA	NA	NA
IHG	SJHGG063178	Maximal Safe Surgical Resection	NTR	No	No	No	NA	NA	NA	NA	NA	NA	NA	NA
IHG	SJHGG063176	Maximal Safe Surgical Resection/ Decompression of Brain	GTR	Yes	Yes	Yes	Evacuation of ventricular hemorrhage	Successful	No	No	No	NA	NA	NA
IHG	SJHGG063176	Tissue Diagnosis/Biopsy	Biopsy	Yes	No	Yes	Maximal Safe Surgical Resection	GTR	Yes	No	No	NA	NA	NA
IHG	SJHGG063179	Maximal Safe Surgical Resection	GTR	Yes	Yes	No	NA	NA	NA	NA	NA	NA	NA	NA
IHG	SJHGG058477	Tissue Diagnosis/Biopsy	Biopsy	No	No	Yes	Post Chemotherapy cyst formation	GTR	No	No	Yes	Acquired Hydrocephalous, shunt failure	Shunt Revision and fluid drainage	No