Clinically relevant, orthotopically-developed glioblastoma (GBM) models enable accurate assessment of a therapeutic's interaction with the blood-brain barrier (BBB), including permeability and transport.

Orthotopic patient-derived xenograft (O-PDX) models have been shown to retain the same genomic, histological, epigenetic, and treatment response characteristics as parental tumors and identify the gene signatures and pathways signatures associated with the clinical aggressiveness of GBMs.^{1,2}

Model Id	Туре		Biopsy Site			
CRT00358	Spheroid	57 M, Prim	Brain			
CRT00359	Spheroid	54 F, Prim	ary tumor, patient was treatment naïve	Brain		
CRT00362	Spheroid	51 F, Tem	odar + Radiotherapy (RT) prior treatment	Brain		
CRT00433	Spheroid		60 F, Primary tumor, patient was treatment naïve	Left temporal mass		
CRT00434	Spheroid	Same Patient	60 F, recurrent tumor, patient still treatment naïve at time of biopsy	Recurrent brain tumor, left		
CRT00435	Spheroid		61 F, recurrent tumor after treatment with Temodar + Radiotherapy (RT)	Left brain mass, partial excision		
CRT00438	Spheroid	Age, gend	er, and prior treatment unknown	Unknown		
CRT00467	Spheroid	Same	56 F, primary tumor, patient was treatment naïve	Right temporal mass		
CRT00361	Spheroid	Patient	57 F, recurrent tumor after treatment with Temodar + Radiotherapy (RT)	Brain lesion		

- ✓ 9 GBM Models
- ✓ 2 Treatment Naïve
- ✓ 3 Pretreated with TMZ & RT

ONCOLOGY INTELLIGENCE

- ✓ RNAseq & WES data
- ✓ Histology Slides
- ✓ IC50 with TMZ & Irradiation
- ✓ Spectral Flow Cytometry
- ✓ Sphere-Forming Analysis
- ✓ Intracranial MRI images
- ✓ Intracranial, Sub-Q, & In Vitro Use



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Table 1: Summarized expression data on a subset of genes from RNAseq compared to GTEx matched normal tissue on 9 GBM 3D spheroid models.

	RT00358	RT00359	RT00361	RT00362	RT00433	RT00434	RT00435	RT00438	RT00467
Gene	U.	CH CH	Ч	Ъ	U.	Ъ	CH CH	Ц С	Ľ.
BRAF									
CDK4									
CDK6									
CDKN2A									
CDKN2B									
CDKN2C									
COL1A2									
DYNC1I1									
EGFR									
EZH2									
IDH1									
IDH2									
MDM2									
MET									
MGMT									
NF1									
PTEN									
SEMA3C									
TERT									
TP53									

Key								
	High							
	Normal							
	Low							

CONTACT US

Let's discuss how we can help you overcome your GBM preclinical research challenges.



Schedule a meeting



Figure 3: Spectral flow cytometry data from 6 selected markers on 5 GBM 3D spheroid models



Table 2: Mutational summary of a subset of genes via Whole Exome Sequencing (WES) on 9 GBM 3D spheroid models

REFERENCES

1 Patrizii M, Bartucci M, Pine SR, Sabaawy HE. <u>Utility of Glioblastoma Patient-Derived</u> <u>Orthotopic Xenografts in Drug Discovery and</u> <u>Personalized Therapy</u>. *Front Oncol.* 2018;8:23.

2 Joo KM, Kim J, Jin J, *et al.* <u>Patient-Specific</u> <u>Orthotopic Glioblastoma Xenograft Models</u> <u>Recapitulate the Histopathology and Biology of</u> <u>Human Glioblastomas *In Situ. Cell Rep.* 2013;3(1):260-273.</u>

Model	BRAF	CDK4	CDK6	CDKN2A	CDKN2C	COL1A2	DYNC111	EGFR	EZH2	IDH1	IDH2	MDM2	MET	MGMT	NF1	PTEN	SEMA3C	TERT	TP53
CRT00358			X					X								X		X	X
CRT00359															X			X	X
CRT00361	X					X			X				X		X				Χ
CRT00362	X		X												X				
CRT00433	X	X			X	X	X	X	X	X	X	X	X		X			X	Χ
CRT00434	X	X			X	X		X	X	X	X	X	X		X	X	X	X	X
CRT00435	X			X			X			X	X		X	X	X	X		X	Χ
CRT00438	X				X			X	X	X	X	X	X		X	X			Χ
CRT00467	X	X	X					X						X	X			X	Х