

U87MG is a human glioblastoma cell line, and genes associated with the characteristics of glioblastoma are typically expressed in U87MG. Here are some genes that may be expressed in U87MG and are relevant to glioblastoma:

1. EGFR (Epidermal Growth Factor Receptor): expression of EGFR is common in glioblastomas, and U87MG usually exhibits EGFR expression.
2. TP53: TP53, the encoding gene for the tumor suppressor p53, is associated with the development of various tumors, including glioblastoma.
3. PTEN (Phosphatase and Tensin Homolog): PTEN, a tumor suppressor gene, is implicated in the occurrence and progression of glioblastoma.
4. PDGFRA (Platelet-Derived Growth Factor Receptor Alpha): PDGFRA, a receptor tyrosine kinase associated with the PDGF signaling pathway, may be expressed in U87MG.
5. IDH1 (Isocitrate Dehydrogenase 1): IDH1 are associated with certain subtypes of glioblastoma, and examining its expression can provide insights into the genetic characteristics of U87MG.

6. NF1 (Neurofibromin 1): NF1, related to neurofibromatosis 1, is implicated in the development of some glioblastomas.
7. AURKA (Aurora Kinase A): AURKA, a kinase involved in cell division and tumorigenesis, may be expressed in U87MG.
8. MGMT (O-6-methylguanine-DNA methyltransferase): U87MG is an MGMT-deficient GBM cell line.

The expression levels of these genes are analyzed through RNA sequencing to ensure that the expression profile of U87MG aligns with the characteristics of glioblastoma.

*RNA sequencing.* Total RNA extraction was performed using the REzol reagent supplied by Protech Technology Enterprise CO., Ltd (Taipei, Taiwan). The subsequent steps of library construction and sequencing were conducted by Genomics Co., Ltd. (New Taipei City, Taiwan), utilizing the Illumina HiSeq/NovaSeq platform. This resulted in the generation of 150 bp paired-end reads, capturing comprehensive transcriptomic information. To ensure accurate quantification, Transcript Per Million (TPM) values were calculated during the analysis.

## Results

			Transcripts Per Million (TPM)			
			TPM1	TPM2	TPM3	Average
ENSG00000146648	EGFR	Epidermal growth factor receptor	38.1846	40.25736	29.78464	36.07554
ENSG00000141510	TP53	Tumor protein p53	20.5516	14.21886	16.99154	17.254
ENSG00000171862	PTEN	Phosphatase and tensin homolog	34.50758	49.29042	43.01516	42.27105
ENSG00000134853	PDGFRA	Platelet derived growth factor receptor alpha	2.287705	2.347327	2.176315	2.270449
ENSG00000138413	IDH1	Isocitrate dehydrogenase [NADP(+)] 1	306.2815	175.1774	165.2801	215.5797
ENSG00000196712	NF1	Neurofibromin 1	13.31974	14.67775	9.224683	12.40739
ENSG00000087586	AURKA	Aurora kinase A	81.88235	115.5409	113.5828	103.6687
ENSG00000170430	MGMT	O-6-methylguanine-DNA Methyltransferase	0	0	0	0