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# GLUL Knockout 293T Cell Line, Homozygous

**Catalog No.: RM02238**

## Basic Information

**Catalog No.**
RM02238

**Category**
Cell Line

**Parental Cell line**
293T

**Genotype**
Knockout

## Gene Information

**Gene Symbol**
GLUL

**Species**
Human

**Gene ID**
2752

**Swiss Prot**
P15104

**Synonyms**
GLNS; GS; PIG43; PIG59

## Contact


400-999-6126

cn.market@abclonal.com.cn

www.abclonal.com.cn


## Background

The protein encoded by this gene belongs to the glutamine synthetase family. It catalyzes the synthesis of glutamine from glutamate and ammonia in an ATP-dependent reaction. This protein plays a role in ammonia and glutamate detoxification, acid-base homeostasis, cell signaling, and cell proliferation. Glutamine is an abundant amino acid, and is important to the biosynthesis of several amino acids, pyrimidines, and purines. Mutations in this gene are associated with congenital glutamine deficiency, and overexpression of this gene was observed in some primary liver cancer samples. There are six pseudogenes of this gene found on chromosomes 2, 5, 9, 11, and 12. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Dec 2014]

## Product Information

**Description**
GLUL Knockout cell line is engineered from 293T cell line with Gene-Editing Technology.
Allele-1:exon1 was destroyed
Allele-2:exon1 was destroyed
Mammalian cells such as human, rat and mouse cells are normally diploid with two alleles.
Homozygote: both alleles were knocked out, mRNA has no signal, no expression of proteins.
Heterozygote: only one allele was knocked out, the mRNA transcript levels was decreased compared to wild type, and the protein expression levels was also lower than that of the wild type.

**Packaging**
1 vial parental cell line and 1 vial knockout cell line

**Shipping Conditions**
Dry ice

**Amount**
1~5x$10^6$ cells/vial

**Storage**
Stored in liquid nitrogen for a long time less than -130℃. Minimizing freeze-thaw cycles.

**Protocol**
Upon arrival, it should be maintained in DMEM medium with 10%(v/v) fetal bovine serum and 100U penicillin-streptomycin, at 37℃ with 5% $CO_2$ condition.

1. Thaw the vial in 37℃ water bath ,and shake it to melt as soon as possible.
2. Transfer the cell suspension to a 15mL conical tube with pre-warmed 5mL complete medium and centrifuge 1000rpm for approximately 5 minutes at room temperature.
3. Remove and discard the supernatant.
4. Resuspend the cell pellet with 1mL pre-warmed complete medium and seed in 10cm dish.
5. Add 8-10mL of complete medium.
6. Incubate the culture at 37℃ incubator with 5% $CO_2$.
7. A subcultivation ratio of 1:2-1:4 is recommended.

## Sequencing data

```
WT    CTGCAAGACCCGGA**************ATGCTGGGTGGGAT
Mut   CTGCAAGACCCGGA***Deletion***ATGCTGGGTGGGAT
Allele-1: exon1 was destroyed

WT    CTGCAAGACCCGGA**************TGCTGGGTGGGATC
Mut   CTGCAAGACCCGGA***Deletion***TGCTGGGTGGGATC
Allele-2: exon1 was destroyed
```

Genome sequence analysis of PCR products from parental (WT) and GLUL knockout (KO) 293T cells, using sanger sequencing.