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# COL1A2 Knockout 293T Cell Line, Homozygous

**Catalog No.: RM02715**

## Basic Information

**Catalog No.**
RM02715

**Category**
Cell Line

**Parental Cell line**
293T

**Genotype**
Knockout

## Gene Information

**Gene Symbol**
COL1A2

**Species**
Human

**Gene ID**
1278

**Swiss Prot**
P08123

**Synonyms**
OI4; EDSCV; EDSARTH2; Collagen I/COL1A2

## Contact


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## Background

This gene encodes the pro-alpha2 chain of type I collagen whose triple helix comprises two alpha1 chains and one alpha2 chain. Type I is a fibril-forming collagen found in most connective tissues and is abundant in bone, cornea, dermis and tendon. Mutations in this gene are associated with osteogenesis imperfecta types I-IV, Ehlers-Danlos syndrome type VIIB, recessive Ehlers-Danlos syndrome Classical type, idiopathic osteoporosis, and atypical Marfan syndrome. Symptoms associated with mutations in this gene, however, tend to be less severe than mutations in the gene for the alpha1 chain of type I collagen (COL1A1) reflecting the different role of alpha2 chains in matrix integrity. Three transcripts, resulting from the use of alternate polyadenylation signals, have been identified for this gene.

## Product Information

**Description**
COL1A2 Knockout cell line is engineered from 293T cell line with Gene-Editing Technology.
Allele-1:exon1 was deleted
Allele-2:exon1 was deleted
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    GGGGCTCTGCGAC**********TAAGTGCCTTCAGC
Mut   GGGGCTCTGCGAC***Deletion***TAAGTGCCTTCAGC
Allele-1:    exon1 was deleted

WT    GGGGCTCTGCGAC**********TAAGTGCCTTCAGC
Mut   GGGGCTCTGCGAC***Deletion***TAAGTGCCTTCAGC
Allele-2:    exon1 was deleted
```

Genome sequence analysis of PCR products from parental (WT) and COL1A2 knockout (KO) 293T cells, using sanger sequencing.