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SMAD2 Knockout HeLa Cell Line, Homozygous

Catalog No.: RM01897

Basic Information

Catalog No.
RM01897

Category
Cell Line

Parental Cell line
HeLa

Genotype
Knockout

Gene Information

Gene Symbol
SMAD2

Species
Human

Gene ID
4087

Swiss Prot
Q15796

Synonyms
JV18; JV18-1; MADH2; MADR2; hMAD-2; hSMAD2

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Background

The protein encoded by this gene belongs to the SMAD, a family of proteins similar to the gene products of the Drosophila gene 'mothers against decapentaplegic' (Mad) and the C. elegans gene Sma. SMAD proteins are signal transducers and transcriptional modulators that mediate multiple signaling pathways. This protein mediates the signal of the transforming growth factor (TGF)-beta, and thus regulates multiple cellular processes, such as cell proliferation, apoptosis, and differentiation. This protein is recruited to the TGF-beta receptors through its interaction with the SMAD anchor for receptor activation (SARA) protein. In response to TGF-beta signal, this protein is phosphorylated by the TGF-beta receptors. The phosphorylation induces the dissociation of this protein with SARA and the association with the family member SMAD4. The association with SMAD4 is important for the translocation of this protein into the nucleus, where it binds to target promoters and forms a transcription repressor complex with other cofactors. This protein can also be phosphorylated by activin type 1 receptor kinase, and mediates the signal from the activin. Alternatively spliced transcript variants have been observed for this gene. [provided by RefSeq, May 2012]

Product Information

Description
SMAD2 Knockout HeLa Cell Line is engineered from HeLa cell line with Gene-Editing Technology.
Allele-1:68bp deletion in exon1
Allele-2:68bp deletion in exon1
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
1~5x10^6 cells/vial

Storage
Store at -20℃

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 ATTCACGCCGCCAG**********AATGGGCAGGAAGA
Mut ATTCACGCCGCCAG***Deletion***AATGGGCAGGAAGA
Allele-1: 68bp deletion in exon1

WT ATTCACGCCGCCAG**********AATGGGCAGGAAGA
Mut ATTCACGCCGCCAG***Deletion***AATGGGCAGGAAGA
Allele-2: 68bp deletion in exon1

Genome sequence analysis of PCR products from parental (WT) and SMAD2 knockout (KO) HeLa cells, using sanger sequencing.

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