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Product datasheet

Human TCF7L2 (TCF-4) knockout HepG2 cell line ab277913

Overview

Product name	Human TCF7L2 (TCF-4) knockout HepG2 cell line
Description	TCF7L2 KO HepG2 cell line
Parental Cell Line	HepG2
Organism	Human
Passage number	<20
Biosafety level	1
General notes	**Recommended control:** Human wild-type HepG2 cell line (ab275467). Please note a wild-type cell line is not automatically included with a knockout cell line order, if required please add recommended wild-type cell line at no additional cost using the code WILDTYPE-TMTK1. **Cryopreservation cell medium:** Cell Freezing Medium-DMSO Serum free media, contains 8.7% DMSO in MEM supplemented with methyl cellulose. **Culture medium:** MEM + 10% FBS **Initial handling guidelines:** Upon arrival, the vial should be stored in liquid nitrogen vapor phase and not at -80ºC. Storage at -80ºC may result in loss of viability. 1. Thaw the vial in 37ºC water bath approximately 1-2 minutes. 2. Transfer the cell suspension (0.8 ml) to a 15 ml/50 ml conical sterile polypropylene centrifuge tube containing 8.4 ml pre-warmed **culture medium**, wash vial with an additional 0.8 ml **culture medium** (total volume 10 ml) to collect remaining cells, and centrifuge at 201 *x g* (rcf) for 5 minutes at room temperature. 10 ml represents minimum recommended dilution. 20 ml represents maximum recommended dilution. 3. Resuspend the cell pellet in 5 ml pre-warmed **culture medium** and count using a haemocytometer (Click here to view haemocytometer protocol) or alternative cell counting method. Based on cell count, seed cells in an appropriate cell culture flask at a density of $2x10^4$ cells/cm^2. This should allow for confluency within 48 hours. Seeding density is given as a guide only and should be scaled to align with individual lab schedules. 4. Incubate the culture at 37ºC incubator with 5% CO_2. Cultures should be monitored daily. **Subculture guidelines:** All seeding densities should be based on cell counts gained by established methods. A guide seeding density of $2x10^4$ cells/cm^2 is recommended for confluency (80-90% confluence) within 48 hours. A partial media change 24 hours prior to subculture may be helpful to encourage growth, if required.

Cells should be passaged when they have achieved 80-90% confluence.
Click here to view the Mammalian cell tissue culture protocol

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Properties

Number of cells	1 x 10^6 cells/vial, 1 mL
Viability	~90%
Adherent /Suspension	Adherent
Tissue	Liver
Cell type	epithelial
Disease	Hepatocellular Carcinoma
Gender	Male
Mycoplasma free	Yes
Storage instructions	Shipped on Dry Ice. Store in liquid nitrogen.
Storage buffer	Constituents: 8.7% DMSO, 2% Cellulose, methyl ether

Target

Function	Participates in the Wnt signaling pathway and modulates MYC expression by binding to its promoter in a sequence-specific manner. Acts as repressor in the absence of CTNNB1, and as activator in its presence. Activates transcription from promoters with several copies of the Tcf motif 5'-CCTTTGATC-3' in the presence of CTNNB1. TLE1, TLE2, TLE3 and TLE4 repress transactivation mediated by TCF7L2 and CTNNB1. Expression of dominant-negative mutants results in cell-cycle arrest in G1. Necessary for the maintenance of the epithelial stem-cell compartment of the small intestine.
Tissue specificity	Detected in epithelium from small intestine, with the highest expression at the top of the crypts and a gradient of expression from crypt to villus. Detected in colon epithelium and colon cancer, and in epithelium from mammary gland and carcinomas derived therefrom.
Involvement in disease	Note=Constitutive activation and subsequent transactivation of target genes may lead to the maintenance of stem-cell characteristics (cycling and longevity) in cells that should normally undergo terminal differentiation and constitute the primary transforming event in colorectal cancer (CRC). Genetic variations in TCF7L2 are associated with susceptibility to non-insulin-dependent diabetes mellitus (NIDDM) [MIM:125853]. NIDDM is characterized by an autosomal dominant mode of inheritance, onset during adulthood and insulin resistance.
Sequence similarities	Belongs to the TCF/LEF family. Contains 1 HMG box DNA-binding domain.
Developmental stage	Highly expressed in crypt regions and barely detectable in villi in epithelium from fetal small intestine at week 16. At week 22 expression in villi had increased strongly.
Domain	The promoter-specific activation domain interacts with the transcriptional coactivator EP300.
Post-translational	In vitro, phosphorylated by TNIK.

modifications	Polysumoylated. Sumoylation is enhanced by PIAS family members and desumoylated by AXAM/SENP2. Sumoylation/desumoylation regulates TCF4 transcription activity in the Wnt signaling pathway without altering interaction with CTNNB1 nor binding DNA.
Cellular localization	Nucleus > PML body. Diffuse pattern. Colocalizes with SUMO1 and PIAS4 in a subset of PML (promyelocytic leukemia) nuclear bodies.

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