

Product datasheet for **MG227584**

Lep (NM_008493) Mouse Tagged ORF Clone

Product data:

Product Type: Expression Plasmids
Product Name: Lep (NM_008493) Mouse Tagged ORF Clone
Tag: TurboGFP
Symbol: Lep
Synonyms: ob; obese
Mammalian Cell Selection: Neomycin
Vector: pCMV6-AC-GFP (PS100010)
E. coli Selection: Ampicillin (100 ug/mL)
ORF Nucleotide Sequence: >MG227584 representing NM_008493
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGATCGCC**

ATGTGCTGGAGACCCCTGTGTCGGTTCCTGTGGCTTTGGTCTATCTGTCTTATGTTCAAGCAGTGCCTA
 TCCAGAAAGTCCAGGATGACACCAAAACCTCATCAAGACCATTGTCACCAGGATCAATGACATTTACA
 CACGCAGTCGGTATCCGCCAAGCAGAGGGTCACTGGCTTGGACTTCATTCTGGGCTTACCCCATTTCTG
 AGTTTGTCCAAGATGGACCAGACTCTGGCAGTCTATCAACAGGTCCTCACCAGCCTGCCTCCCAAATG
 TGCTGCAGATAGCCAATGACCTGGAGAATCTCCGAGACCTCCTCCATCTGCTGGCCTTCTCCAAGAGCTG
 CTCCCTGCCTCAGACCAGTGGCCTGCAGAAGCCAGAGAGCCTGGATGGCTCCTGGAAGCCTCACTCTAC
 TCCACAGAGGTGGTGGCTTTGAGCAGGCTGCAGGGCTCTCTGCAGGACATTCTTCAACAGTTGGATGTTA
 GCCCTGAATGC

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

Protein Sequence: >MG227584 representing NM_008493
 Red=Cloning site Green=Tags(s)

MCWRPLCRFLWLWSYLSYVQAVPIQKVQDDTKLTIKTIVTRINDISHTQSVSAKQRVTLDFIPGLHPIL
 SLSKMDQTLAVYQQVLTSLPSQNVLQIANDLENLRDLLHLLAFSKSCSLPQTSGLQKPELSDGVLEASLY
 STEVVALSRLQGSQDILQQLDVSPEC

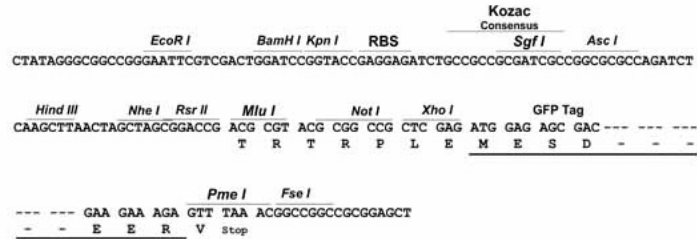
TRTRPLE - GFP Tag - V

Restriction Sites: Sgfl-MluI

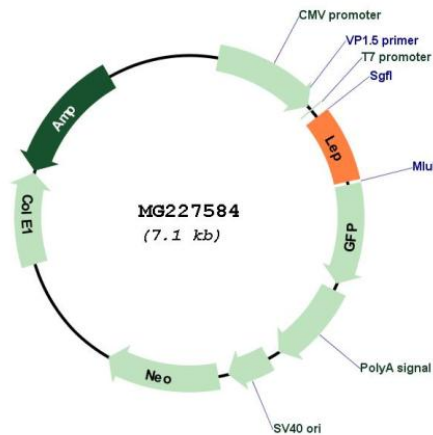


Cloning Scheme:

Cloning sites used for ORF Shutting:



Plasmid Map:



ACCN: NM_008493

ORF Size: 501 bp

OTI Disclaimer: Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at custsupport@origene.com or by calling 301.340.3188 option 3 for pricing and delivery.

The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. [More info](#)

OTI Annotation: This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

Components: The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

Reconstitution Method:

1. Centrifuge at 5,000xg for 5min.
2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.
5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.

RefSeq: [NM_008493.3](#), [NP_032519.1](#)

RefSeq Size: 3257 bp

RefSeq ORF: 504 bp

Locus ID: 16846

UniProt ID: [P41160](#)

Cytogenetics: 6 12.3 cM

Gene Summary:

Key player in the regulation of energy balance and body weight control. Once released into the circulation, has central and peripheral effects by binding LEPR, found in many tissues, which results in the activation of several major signaling pathways (PubMed:15899045, PubMed:16825198, PubMed:11373681, PubMed:12594516, PubMed:20620997). In the hypothalamus, acts as an appetite-regulating factor that induces a decrease in food intake and an increase in energy consumption by inducing anorexigenic factors and suppressing orexigenic neuropeptides, also regulates bone mass and secretion of hypothalamo-pituitary-adrenal hormones. In the periphery, increases basal metabolism, influences reproductive function, regulates pancreatic beta-cell function and insulin secretion, is pro-angiogenic for endothelial cell and affects innate and adaptive immunity (By similarity) (PubMed:8589726, PubMed:10660043, PubMed:25383904, PubMed:25060689, PubMed:9732873, PubMed:12594516). In the arcuate nucleus of the hypothalamus, activates by depolarization POMC neurons inducing FOS and SOCS3 expression to release anorexigenic peptides and inhibits by hyperpolarization NPY neurons inducing SOCS3 with a consequent reduction on release of orexigenic peptides (By similarity) (PubMed:20620997, PubMed:11373681). In addition to its known satiety inducing effect, has a modulatory role in nutrient absorption. In the intestine, reduces glucose absorption by enterocytes by activating PKC and leading to a sequential activation of p38, PI3K and ERK signaling pathways which exerts an inhibitory effect on glucose absorption. Acts as a growth factor on certain tissues, through the activation of different signaling pathways increases expression of genes involved in cell cycle regulation such as CCND1, via JAK2-STAT3 pathway, or VEGFA, via MAPK1/3 and PI3K-AKT1 pathways (By similarity) (PubMed:16825198, PubMed:20620997). May also play an apoptotic role via JAK2-STAT3 pathway and up-regulation of BIRC5 expression (By similarity). Pro-angiogenic, has mitogenic activity on vascular endothelial cells and plays a role in matrix remodeling by regulating the expression of matrix metalloproteinases (MMPs) and tissue inhibitors of metalloproteinases (TIMPs) (PubMed:16825198). In innate immunity, modulates the activity and function of neutrophils by increasing chemotaxis and the secretion of oxygen radicals. Increases phagocytosis by macrophages and enhances secretion of pro-inflammatory mediators. Increases cytotoxic ability of NK cells (Probable). Plays a pro-inflammatory role, in synergy with IL1B, by inducing NOS2 which promotes the production of IL6, IL8 and Prostaglandin E2, through a signaling pathway that involves JAK2, PI3K, MAP2K1/MEK1 and MAPK14/p38 (PubMed:15899045). In adaptive immunity, promotes the switch of memory T-cells towards T helper-1 cell immune responses (By similarity). Increases CD4(+)CD25(-) T cells proliferation and reduces autophagy during TCR (T cell receptor) stimulation, through MTOR signaling pathway activation and BCL2 up-regulation (PubMed:25060689).[UniProtKB/Swiss-Prot Function]