

## Product datasheet for **MG201396**

### Ptn (NM\_008973) Mouse Tagged ORF Clone

#### Product data:

**Product Type:** Expression Plasmids  
**Product Name:** Ptn (NM\_008973) Mouse Tagged ORF Clone  
**Tag:** TurboGFP  
**Symbol:** Ptn  
**Synonyms:** HARP; HB-GAM; HBBN; HBGF-8; HBNF; OSF; Osf-1; Osf1  
**Mammalian Cell Selection:** Neomycin  
**Vector:** pCMV6-AC-GFP (PS100010)  
**E. coli Selection:** Ampicillin (100 ug/mL)  
**ORF Nucleotide Sequence:** >MG201396 representing NM\_008973  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGATCGCC**

ATGTCGTCGCCAGCAATATCAGCAGCAACGTAGAAAATTTGCAGCTGCCTTCTGGCATTGATTTTCATCT  
 TGGCAGCTGTGGACTGCTGAGGCCGGGAAGAAAGAAAACCTGAAAAAAGGTGAAAAAGTCTGACTG  
 TGGAGAATGGCAGTGGAGTGTGTGCGTGCCTACCAGCGGGGACTGTGGATTGGGCACCCGGGAGGGCACT  
 CGCACTGGCGCCGAGTCAAACAGACCATGAAGACTCAGAGATGAAGATCCCTTGAACCTGGAAGAAGC  
 AGTTTGGAGCTGAGTGAAGTACCAGTTCAGGCTTGGGGAGAATGTGACCTCAATACCGCCTTGAAGAC  
 CAGAACTGGCAGCCTGAAGCGAGCTCTGCAATGCTGACTGTCAGAAAAGTGTACCATCTCCAAGCCC  
 TGTGGCAAGCTCACCAAGCCCAAGCCTCAAGCGGAGTCAAAGAAGAAGAAAAGGAAGGCAAGAAACAGG  
 AGAAGATGCTGGAT

**ACGCGT**ACGCGGCCGCTCGAG - GFP Tag - GTTTAA

**Protein Sequence:** >MG201396 representing NM\_008973  
 Red=Cloning site Green=Tags(s)

MSSQYQQRRKFAAAFLALIFILAAVDTAEAGKKEKPEKKVKKSDCGEWQWSVCVPTSGDCGLGTREGT  
 RTGAECKQTMKTQRCKIPCNWKKQFGAECKYQFQAWGECDLNTALKTRTGLKRALHNADCKTIVTISKP  
 CGKLTkPKPQAESKkkkKegkKqEKMLD

**TRTRPLE** - GFP Tag - V

**Restriction Sites:** Sgfl-MluI

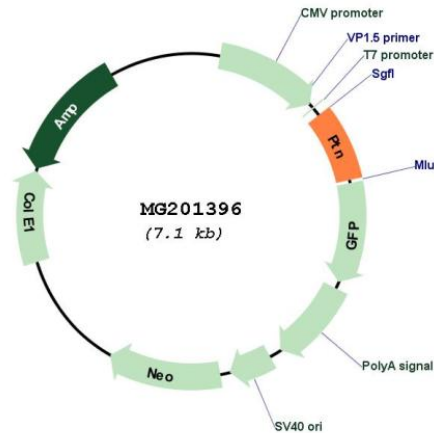


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Cloning Scheme:



Plasmid Map:



ACCN: NM\_008973

ORF Size: 504 bp

OTI Disclaimer: 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.

<b>Components:</b>	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).
<b>Reconstitution Method:</b>	<ol style="list-style-type: none"><li>1. Centrifuge at 5,000xg for 5min.</li><li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li><li>3. Close the tube and incubate for 10 minutes at room temperature.</li><li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li><li>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.</li></ol>
<b>RefSeq:</b>	<u><a href="#">NM_008973.2</a></u> , <u><a href="#">NP_032999.1</a></u>
<b>RefSeq Size:</b>	2021 bp
<b>RefSeq ORF:</b>	507 bp
<b>Locus ID:</b>	19242
<b>UniProt ID:</b>	<u><a href="#">P63089</a></u>
<b>Cytogenetics:</b>	6 15.48 cM

**Gene Summary:**

Secreted growth factor that mediates its signal through cell-surface proteoglycan and non-proteoglycan receptors (By similarity). Binds cell-surface proteoglycan receptor via their chondroitin sulfate (CS) groups (By similarity). Thereby regulates many processes like cell proliferation, cell survival, cell growth, cell differentiation and cell migration in several tissues namely neuron and bone (PubMed:15121180, PubMed:30497772, PubMed:27445335, PubMed:19442624). Also plays a role in synaptic plasticity and learning-related behavior by inhibiting long-term synaptic potentiation (PubMed:11414790, PubMed:25000129). Binds PTPRZ1, leading to neutralization of the negative charges of the CS chains of PTPRZ1, inducing PTPRZ1 clustering, thereby causing the dimerization and inactivation of its phosphatase activity leading to increased tyrosine phosphorylation of each of the PTPRZ1 substrates like ALK or AFAP1L2 in order to activate the PI3K-AKT pathway (PubMed:27445335). Through PTPRZ1 binding controls oligodendrocyte precursor cell differentiation by enhancing the phosphorylation of AFAP1L2 in order to activate the PI3K-AKT pathway (PubMed:27445335). Forms a complex with PTPRZ1 and integrin alpha-V/beta-3 (ITGAV:ITGB3) that stimulates endothelial cell migration through SRC dephosphorylation and activation that consequently leads to ITGB3 'Tyr-773' phosphorylation (By similarity). In adult hippocampus promotes dendritic arborization, spine development, and functional integration and connectivity of newborn granule neurons through ALK by activating AKT signaling pathway (PubMed:30497772). Binds GPC2 and chondroitin sulfate proteoglycans (CSPGs) at the neuron surface, leading to abrogation of binding between PTPRS and CSPGs and neurite outgrowth promotion (By similarity). Binds SDC3 and mediates bone formation by recruiting and attaching osteoblasts/osteoblast precursors to the sites for new bone deposition (By similarity). Binds ALK and promotes cell survival and cell proliferation through MAPK pathway activation (By similarity). Inhibits proliferation and enhances differentiation of neural stem cells by inhibiting FGF2-induced fibroblast growth factor receptor signaling pathway (PubMed:15121180). Mediates regulatory mechanisms in normal hemostasis and in hematopoietic regeneration and in maintaining the balance of myeloid and lymphoid regeneration (PubMed:21791434). In addition may play a role in the female reproductive system, auditory response and the progesterone-induced decidualization pathway (PubMed:17121547, PubMed:28657144, PubMed:16619002).[UniProtKB/Swiss-Prot Function]