

## Product datasheet for **RN215211**

### Emp2 (NM\_001007721) Rat Untagged Clone

#### Product data:

**Product Type:** Expression Plasmids  
**Product Name:** Emp2 (NM\_001007721) Rat Untagged Clone  
**Tag:** Tag Free  
**Symbol:** Emp2  
**Synonyms:** EMP-2  
**Mammalian Cell Selection:** Neomycin  
**Vector:** pCMV6-Entry (PS100001)  
**E. coli Selection:** Kanamycin (25 ug/mL)  
**Fully Sequenced ORF:** >RN215211 representing NM\_001007721  
Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGGATCGCC**

ATGTTGGTGATTCTTGCCTTCATCATCGTCTTCCACATCGTGTCTACGGCACTCTTGTTCAATTTCAACCA  
TTGACAATGCCTGGTGGTAGGAGATGGCTTCTCAGCTGACATCTGGAGAGTGTGCACCAACAGCACAAA  
CTGTACAGAGATCAATGACCTGAGCAGTACCGAGGAGTTTTCAGGTTACTCTGTGATGCAGGCGGTGCAG  
GCCACCATGATCCTCTCCACCATCCTCTCCTGCATCTCCTTCTCATCTTTCTGCTCCAGCTCTTCCGCC  
TCAAGCAGGGAGAGAGGTTTCGTCCTGACGGCCATCATCCAGCTCATGTCCTGTCTGTGTGTCATGATCGG  
GGCTTCCGTCTATACAGACCGGGCAAGACCTTCAACATCAGAACAGCCAGCTCTATTACCTACTGCAA  
GAAGGCAGCTACGGTTACTCCTTCATCCTGGCCTGGGTGGCTTTCGCCTTCACTTTCATCAGCGGCCTCA  
TGTACATGATCCTGAGGAAGCGCAATAG

**ACGCGT**ACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
ACAAGGATGACGACGATAAGGTTTAA

**Restriction Sites:** SgfI-MluI  
**ACCN:** NM\_001007721  
**Insert Size:** 519 bp



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**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](mailto: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](#)

**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\\_001007721.1](#), [NP\\_001007722.1](#)

**RefSeq Size:** 3154 bp

**RefSeq ORF:** 519 bp

**Locus ID:** 360468

**UniProt ID:** [Q66HH2](#)

**Cytogenetics:** 10q11

**Gene Summary:**

Functions as a key regulator of cell membrane composition by regulating proteins surface expression. Also, plays a role in regulation of processes including cell migration, cell proliferation, cell contraction and cell adhesion. Negatively regulates caveolae formation by reducing CAV1 expression and CAV1 amount by increasing lysosomal degradation. Facilitates surface trafficking and the formation of lipid rafts bearing GPI-anchor proteins. Regulates surface expression of MHC1 and ICAM1 proteins increasing susceptibility to T-cell mediated cytotoxicity. Regulates the plasma membrane expression of the integrin heterodimers ITGA6-ITGB1, ITGA5-ITGB3 and ITGA5-ITGB1 resulting in modulation of cell-matrix adhesion. Also regulates many processes through PTK2. Regulates blood vessel endothelial cell migration and angiogenesis by regulating VEGF protein expression through PTK2 activation. Regulates cell migration and cell contraction through PTK2 and SRC activation. Regulates focal adhesion density, F-actin conformation and cell adhesion capacity through interaction with PTK2. Positively regulates cell proliferation. Plays a role during cell death and cell blebbing. Promotes angiogenesis and vasculogenesis through induction of VEGFA via a HIF1A-dependent pathway. Also plays a role in embryo implantation by regulating surface trafficking of integrin heterodimer ITGA5-ITGB3. May play a role in glomerular filtration. [UniProtKB/Swiss-Prot Function]