

## Product datasheet for RN200240

### Bag6 (NM\_053609) Rat Untagged Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Bag6 (NM_053609) Rat Untagged Clone
Tag:	Tag Free
Symbol:	Bag6
Synonyms:	Bat3
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin
Fully Sequenced ORF:	>RN200240 representing NM_053609 Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCCGCGATCGCC

ATGGAGCCGAGTGATAGTACCAGTACCGCTATGGAGGAGCCTGACAGCCTGGAGGTACTGGTGAAGACCC  
TGGACTCTCAGACTCGGACTTTTATTGTGGGGCCAGATGAATGTAAGGAGTTAAGGAACACATAGC  
TGCTCTGTGTCAGCATCCCTTCCGAGAAACAGCGGCTCATCTACCAGGGCCGGTCTACAAGATGACAAG  
AAGCTCCAGGACTACAATGTTGGGGAAAGTTATCCACCTGGTGAACGGGCTCCTCCTCAGACTCAGC  
TACCTTCTGGAGCATCTTCTGGGACAGGCTCTGCCTCAGCTACTCATGGTGGGGGCCCTTCCCTGGCAC  
TCGGGGCCCTGGGGCCTCTGGTCATGACCGGAATGCCAACAGTTATGTCATGGTTGGAACCTTAACTCTT  
CCTAGTGACGGCTCTGTGTGGACGTTACATCAACATGGAACAGGCCCAATTCAGAGTGAGCCCCGGG  
TACGGCTGGTGATGGCTCAGCACATGATTAGGGATATACAGACCTTACTGTCCCGGATGGAGTGTGAGG  
GGGAACCAAGCACAGGCCAGTCAGCCACCCCGCAGACTCCGACTGTGGCCTCAGAGACAGTAGCTTTG  
AACTCACAACATCAGAGCCAGTTGAAAGTGAAGCTCCTCCTCGAGAGCCATGGAGTCAGAAGAAATGG  
AGGAACGTCCCCAACCCAGACTCCAGAGCTTCCACCTCTGGCCAGCTCCAGCAGCCAGCACCCCGC  
ACCAGAGACAAATGCACCAACCACCTTCCCCTGCAGAGCACGTGGAGGTGCTCCAGGAGCTTCAGCGC  
TTGCAACGCCGTCTTCAGCCCTTCTGCAGCGCTACTGTGAGGTCTGGGTGCTGCTGCCACTACAGACT  
ACAATAACAATCATGAGGGCCGAGAAGAGGACCAGAGGTTGATTAACCTGGTGGGGGAGAGCCTGCGGCT  
ACTGGGCAACACTTTCGTGGCATTGTCTGATCTGCGCTGTAATCTAGCCTGTGCACCCCCACGGCACCTG  
CATGTGGTACGGCCTATGTCTCACTACAGACTCCCATGGTGCTCCAGCAGGCAGCCATTCCCATTCAGA  
TCAATGTGGGACTACTGTGACCATGACAGGCAATGGGGCTCGGCTCCACCAGCTCCCGGTGCAGAGGC  
AGCATCCCCAGGTTCTGGCCAGGCTCATCCCTCCTCCATCTTCTGCCACTGTTGATTCATCAACGGAA  
GGAGCTCCCCACCAGGGCCAGCACACCACCAGCCACCAGCCATCCACGGGTGTCATCCGGATTTCCACCC  
AGAGTGTGGAACCTGTGGTCATGATGCACATGAACATTCAAGACTCCGGAGCACAGCCTGGAGGTGTGCC  
CAGTGCTCCCCTGGCCCCCTGGGACCTCTGGTCATGGACAGAGCCTGGGACAGCAGGTGCCCGGCTTC  
CCAACAGCACCAACTCGGGTGGTGATTGCCCGACCCACTCCTCCACAGGCTCGGCTTCCATCTGGGG



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GCCCTCCAGTCTCTGGAGCTCTAGGTGCTGGGCTGGGTACAAACTTCATTGGCCAGATGGTGAGCGG  
 CCTTGTGGGGCAACTTCTCATGCAGCCTGTTCTTGTGGCTCAGGGGACTCCAGGAATGGCTCCGGCTTCT  
 GCTTCAGCTCCGGCTACGGCCAGGCACAGGCCCGCCAGCCAGCTCCGGCCAGCTCCGGCCA  
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 TCCAGCCACAGCTACGATCTTTCTCCACCAGCACTACCTGGGTGGCCAGGAGCCACGTCCAGCAACAT  
 CCGGATGGCAACCCACACGTTGATCACGGGGCTGGAAGAGTATGTACGGGAGAGTTTCTCTTTGGTGCAG  
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 CTACGTGCTGCACTGTACAGACAGTGGATTTGGAGCCCGCTGCTGGAGCTATGTAACCAGGGCCTGTT  
 TGAATGCTTGGCCCTGAACCTGCACTGCTTGGGGGCCAGCAAATGGAGCTTGTGCTGTATCAATGGC  
 CGAATTCGCCGATGTCTCGTGGGGTGAATCCATCCTTGGTGAGCTGGCTGACAACTATGATGGGACTCA  
 GGCTTCAGGTGGTCTTAGAGCAGATGCCCGTGGTCCCAGCCATCCTCAGATATGTGCGCAGGATTGG  
 TGATCCTCCTCAGGCACTTCTGAAGAGCAATGGAAGTTCAGGGAGCAGAAAGAACTTCCCCTGAGCCT  
 CAGAGAGAGGATGCTTCCCAGCCCCGGAACAACAGCAGAAGAAGCCATGTCCCAGGTCCACCCCTG  
 CTCTGAAGGAGGTTCCCAGACGAACAGGATGGAGCTTCAGCCGATGCAGAGCCCTGGGAGTGCAGT  
 CCCCCCTGAATGGGTACCTATTATCCAGCAGGACATTAGAGCCAGCGGAAGGTGAAACCTCAGCCGCC  
 CTGAGTGATGCCTACCTCAGTGGCATGCCTGCCAAGAGACGAAAGCTCCGGTCTGATATTTAAAAACGAC  
 TGCAGGAAGATCCCAACTACAGCCCCAGCGCTTCCCTAATGCCACCGGCATTTGCTGATGACCCTA  
 G

**ACGCGT**ACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

- Restriction Sites:** SgfI-MluI
- ACCN:** NM\_053609
- Insert Size:** 3291 bp
- OTI Disclaimer:** Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).
- 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\\_053609.2](#), [NP\\_446061.2](#)

RefSeq Size: 3659 bp

RefSeq ORF: 3291 bp

Locus ID: 94342

UniProt ID: [Q6MG49](#)

Cytogenetics: 20p12

**Gene Summary:**

ATP-independent molecular chaperone preventing the aggregation of misfolded and hydrophobic patches-containing proteins. Functions as part of a cytosolic protein quality control complex, the BAG6/BAT3 complex, which maintains these client proteins in a soluble state and participates to their proper delivery to the endoplasmic reticulum or alternatively can promote their sorting to the proteasome where they undergo degradation. The BAG6/BAT3 complex is involved in the post-translational delivery of tail-anchored/type II transmembrane proteins to the endoplasmic reticulum membrane. Recruited to ribosomes, it interacts with the transmembrane region of newly synthesized tail-anchored proteins and together with SGTA and ASNA1 mediates their delivery to the endoplasmic reticulum. Client proteins that cannot be properly delivered to the endoplasmic reticulum are ubiquitinated by RNF126, an E3 ubiquitin-protein ligase associated with BAG6 and are sorted to the proteasome. SGTA which prevents the recruitment of RNF126 to BAG6 may negatively regulate the ubiquitination and the proteasomal degradation of client proteins. Similarly, the BAG6/BAT3 complex also functions as a sorting platform for proteins of the secretory pathway that are mislocalized to the cytosol either delivering them to the proteasome for degradation or to the endoplasmic reticulum. The BAG6/BAT3 complex also plays a role in the endoplasmic reticulum-associated degradation (ERAD), a quality control mechanism that eliminates unwanted proteins of the endoplasmic reticulum through their retrotranslocation to the cytosol and their targeting to the proteasome. It maintains these retrotranslocated proteins in an unfolded yet soluble state condition in the cytosol to ensure their proper delivery to the proteasome. BAG6 is also required for selective ubiquitin-mediated degradation of defective nascent chain polypeptides by the proteasome. In this context, it may participate to the production of antigenic peptides and play a role in antigen presentation in immune response. BAG6 is also involved in endoplasmic reticulum stress-induced pre-emptive quality control, a mechanism that selectively attenuates the translocation of newly synthesized proteins into the endoplasmic reticulum and reroutes them to the cytosol for proteasomal degradation. BAG6 may ensure the proper degradation of these proteins and thereby protects the endoplasmic reticulum from protein overload upon stress. By inhibiting the polyubiquitination and subsequent proteasomal degradation of HSPA2 it may also play a role in the assembly of the synaptonemal complex during spermatogenesis. Also positively regulates apoptosis by interacting with and stabilizing the proapoptotic factor AIFM1. By controlling the steady-state expression of the IGF1R receptor, indirectly regulates the insulin-like growth factor receptor signaling pathway.

[UniProtKB/Swiss-Prot Function]

Transcript Variant: This variant (2) differs in the 5' UTR and at several locations in the coding region compared to variant 1 but maintains the reading frame. The resulting protein (isoform 2) is shorter than isoform 1 but has the same N- and C-termini.