Protein Tat (tat) Recombinant Protein

PRODUCT OVERVIEW

Product Name	Protein Tat (tat), Recombinant Protein
Full Product Name	Recombinant Human immunodeficiency virus type 1 group M subtype B Protein Tat (tat)
Product Gene Name	tat recombinant protein
Sequence	MEPVDPRLEP WKHPGSQPKT ACTNCYCKKC CFHCQVCFIT KALGISYGRK KRRQRRRAHQ NSQTHQASLS KQPTSQPRGD PTGPKE
Host	E Coli or Yeast or Baculovirus or Mammalian Cell
Form/Format	Lyophilized or liquid (Format to be determined during the manufacturing process)
Purity/Purification	Greater or equal to 85% purity as determined by SDS-PAGE. (lot specific)
Preparation and Storage	Store at -20 degrees C. For long-term storage, store at -20 degrees C or -80 degrees C. Store working aliquots at 4 degrees C for up to one week. Repeated freezing and thawing is not recommended.
Molecular Weight	8,389 Da
Sequence Positions	1-86, Full length protein
Tag Information	This protein contains an N-terminal tag and may also contain a C-terminal tag. Tag types are determined by various factors including tag-protein stability, please inquire for tag information.
Sterility	Sterile filter available upon request.
Endotoxin	Low endotoxin available upon request.
3D Structure	ModBase 3D Structure for P04608
Species	Human immunodeficiency virus type 1 group M subtype B (isolate HXB2) (HIV-1)
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Related Product Information for tat recombinant protein	MBS1261340 is a recombinant protein targeting tat. Also known as Recombinant Human immunodeficiency virus type 1 group M subtype B Protein Tat (tat). Host: E Coli or Yeast or Baculovirus or Mammalian Cell.
Other Notes	Small volumes of tat recombinant protein vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for tat. It may not necessarily be applicable to this product.

NCBI GI #	9629358
NCBI GeneID	155871
NCBI Accession #	NP_057853.1
UniProt Primary Accession #	P04608
UniProt Secondary Accession #	O09778
GenBank Nucleotide #	NC_001802.1
NCBI Official Full Name	Tat

NCBI Official Symbol	tat
UniProt Protein Name	Protein Tat
UniProt Synonym Protein Names	Transactivating regulatory protein
Protein Family	Protein
UniProt Gene Name	tat
NCBI Protein Information	p14
UniProt Comments for tat	Nuclear transcriptional activator of viral gene expression, that is essential for viral transcription from the LTR promoter and replication. Acts as a sequence-specific molecular adapter, directing components of the cellular transcription machinery to the viral RNA to promote processive transcription elongation by the RNA polymerase II (RNA pol II) complex, thereby increasing the level of full-length transcripts. In the absence of Tat, the RNA Pol II generates short or non-processive transcripts that terminate at approximately 60 bp from the initiation site. Tat associates with the CCNT1/cyclin-T1 component of the P-TEFb complex (CDK9 and CCNT1), which promotes RNA chain elongation. This binding increases Tat's affinity for a hairpin structure at the 5'-end of all nascent viral mRNAs referred to as the transactivation responsive RNA element (TAR RNA) and allows Tat/P-TEFb complex to bind cooperatively to TAR RNA. The CDK9 component of P-TEFb and other Tat-activated kinases hyperphosphorylate the C-terminus of RNA Pol II that becomes stabilized and much more processive. Other factors such as HTATSF1/Tat-SF1, SUPT5H/SPT5, and HTATIP2 are also important for Tat's function. Besides its effect on RNA Pol II processivity, Tat induces chromatin remodeling of proviral genes by recruiting the histone acetyltransferases (HATs) CREBBP, EP300 and PCAF to the chromatin. This also contributes to the increase in proviral transcription rate, especially when the provirus integrates in transcriptionally silent region of the host genome. To ensure maximal activation of the LTR, Tat mediates nuclear translocation of NF-kappa-B by interacting with host RELA. Through its interaction with host TBP, Tat may also modulate transcription initiation. Tat can reactivate a latently infected cell by penetrating in it and transactivating its LTR promoter. In the cytoplasm, Tat is thought to act as a translational activator of HIV-1 mRNAs.
Research Articles on tat	**1.** the Ras signaling pathway is involved in HIV-1 Tat-induced changes in ZO-1 and NEP.
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