

Product datasheet for **MG225735**

Polr2a (NM_009089) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Polr2a (NM_009089) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Polr2a
Synonyms:	220kDa; Rpb1; Rpo2-1
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)
ORF Nucleotide Sequence:	>MG225735 representing NM_009089, codon optimized . Due to the complexity of NM_009089, the ORF clone is codon optimized for mammalian Expression. The nucleotide sequence differs from the reference sequence, yet the amino acid sequence remains identical.

Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGATCTGCC
GCC**CGATCGCC**

ATGCACGGGGGTGGCCCCCTCCGGGGACAGCGCATGCCCGCTGCGCACCATCAAGAGAGTGCAGTTCCG
GAGTCCCTGAGTCCGGATGAATTGAAGCGGATGTCTGTGACAGAGGGTGGTATCAAATACCCAGAAACAAC
GGAGGGAGGTGCGCCCAAACCTGGGGGACTAATGGATCCACGGCAGGGGGTATTGAGCGGACTGGCCGC
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CGAGGGAATCTAATGGCAAGCGAGTGGACTTCTCAGCCCGCACTGTCATCACCCCTGACCCTAACCTAT



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CCATTGACCAAGTGGGTGTGCCCGCTCCATTGCTGCCAACATGACCTTTGCAGAGATTGTCACACCCTT
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 ACCTACTCACCACCTCTCCAAGGCTCCACCTACTCTCCACTTCTCCTGGTACTCACCACCTAGCC
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ACGCGTACGCGGCGCTCGAG – GFP Tag – GTTTAA

Protein Sequence:

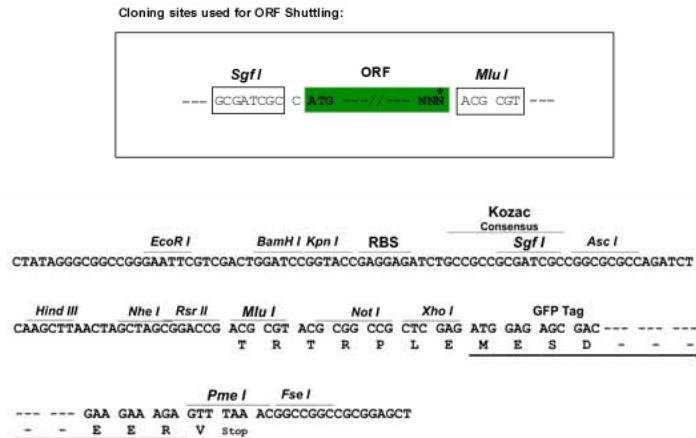
>MG225735 representing NM_009089
 Red=Cloning site Green=Tags(s)

MHGGGPPSGDSACPLRTIKRVQFVLSPEDELKRMVTEGGIKYPETTEGGRPKLGGLMDPRQGVIERGTR
 CQTCAGNMTCEPGHFGHIELAKPVFHVGLVKTMLRVCVFCFKLLVDSNNPKIKDILAKSKGQPKKR
 LTHVYDLCKGKNICEGGEEMDNKFGVEQPEGDELTKKEGHGGCGRYQPRIRRSGLLEYAEWKHVNEDSQ
 EKKILLSPERVHEIFKRISDEECFVLGMEPRYARPEWMIIVTLVPPPLSVRPAVVMQGSARNQDDLTHKL
 ADIVKINNQLRRNEQNGAAAHVIAEDVKLLQFHVATMVDNELPGLPRAMQKSGRPLKSLKQRLKGKEGRV
 RGNLMGKRVDFASARTVITPDPNLSIDQVGVPRISANMTFAEIVTPFNIDRLQELVRRGNSQYPGAKYII
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 PYNADFQDDEMNLHLPQSLETRAEIQELAMVPRMIVTPQSNRPVMGIVQDTLTAVRKFTKRDVFLERGEV
 MNLLMFLSTWDGKVPQPAILKPRPLWTGKQIFSLIIPGHINCIRTHSTHPDDEDSGPYKHISPGDTKVVV
 ENGELIMGILCKKSLGTSAGSLVHISYLEMGHDITRLFYSNIQTVINNWLLIEGHTIGIGDSIADSKTYQ
 DIQNTIKKAKQDVIEVIEKAHNELEPTPGNLTQTFENQVNRILNDARDKTGSSAQKSLSEYNNFKSMV
 VSGAKGSKINISQVIAVVGQQNVEGKRIPFGFKHRTLPHFIKDDYGPESRGFVENSYLAGLTPTEFFHHA
 MGGREGLIDTAVKTAETGYIQRRLIKSMESVMKYDATVRNSINQVQLRYGEDGLAGESVEFQNLATLK
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 VPRLKELINISKKPKTPSLTVFLLGQSARDAERAKDILCRLEHTTLRKVTANTAIYYDPNPQSTVVAEDQ
 EWNVYVEPFDVARI SPWLLRVELDRKHMTDRKL TMEQIAEKINAGFGDDLNCIFNDDNAEKLVLRI
 IMNSDENKMQEEEEVVDKMDDDVFLRCIESNMLTDMTLQGIEQISKVYMHLPQTDNKKKIIITEDGEFKA
 LQEWILETDGVSLMRVLSEKDVDPVRTTSNDIVEIFTVLGIEAVRKALERELYHVISFDGYSVYNRHLAL
 LCDTMTCRGHLMAITRHGVNRQDTGPMKCSFEETVDVLMEEAAHGESDPMKGVSENIIMLGLAPAGTGC
 FDLLLDIAEKCKYGMIEPTNIPGLGAAGRSGMTPGAAGFSPSAASDASGFSYSPGSPAWSPTPGSPGSPGSP
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 TYSPSPKYSTYSPSPGYSPSPSYSPSPSYSPSPSYSPSPSYSPSPSYSPSPSYSPSPSYSPSPSYSPSPSYSP

TRTRPLE – GFP Tag – V

Restriction Sites:

Sgfl-MluI

Cloning Scheme:


ACCN: NM_009089

ORF Size: 5796 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.

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_009089.2](#), [NP_033115.1](#)

RefSeq Size: 5799 bp

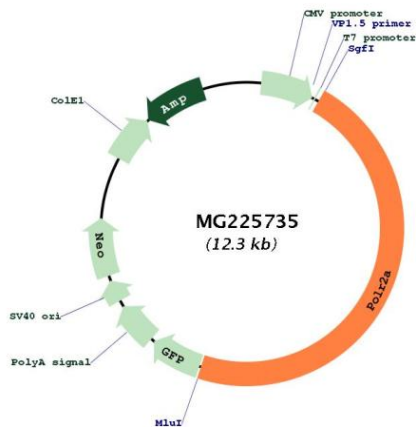
RefSeq ORF: 5799 bp

Locus ID: 20020

Cytogenetics: 11 42.86 cM

Gene Summary:

DNA-dependent RNA polymerase catalyzes the transcription of DNA into RNA using the four ribonucleoside triphosphates as substrates. Largest and catalytic component of RNA polymerase II which synthesizes mRNA precursors and many functional non-coding RNAs. Forms the polymerase active center together with the second largest subunit. Pol II is the central component of the basal RNA polymerase II transcription machinery. It is composed of mobile elements that move relative to each other. RPB1 is part of the core element with the central large cleft, the clamp element that moves to open and close the cleft and the jaws that are thought to grab the incoming DNA template. At the start of transcription, a single-stranded DNA template strand of the promoter is positioned within the central active site cleft of Pol II. A bridging helix emanates from RPB1 and crosses the cleft near the catalytic site and is thought to promote translocation of Pol II by acting as a ratchet that moves the RNA-DNA hybrid through the active site by switching from straight to bent conformations at each step of nucleotide addition. During transcription elongation, Pol II moves on the template as the transcript elongates (By similarity). Elongation is influenced by the phosphorylation status of the C-terminal domain (CTD) of Pol II largest subunit (RPB1), which serves as a platform for assembly of factors that regulate transcription initiation, elongation, termination and mRNA processing (By similarity). Regulation of gene expression levels depends on the balance between methylation and acetylation levels of the CTD-lysines (PubMed:26687004). Initiation or early elongation steps of transcription of growth-factors-induced immediate early genes are regulated by the acetylation status of the CTD (PubMed:24207025). Methylation and dimethylation have a repressive effect on target genes expression (PubMed:26687004). [UniProtKB/Swiss-Prot Function]

Product images:

Circular map for MG225735