

## Product datasheet for **RR207452**

### **Pold2 (NM\_001013050) Rat Tagged ORF Clone**

#### **Product data:**

Product Type:	Expression Plasmids
Product Name:	Pold2 (NM_001013050) Rat Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Pold2
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin



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**ORF Nucleotide Sequence:**

>RR207452 representing NM\_001013050  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGGATCGCC**

ATGTTTTTCAGAGCAGGCAGCACAGAGGGCCACACTCTGCTCTCCCCGCCATCAGCCAGCAATGCCACCT  
 TTGCCCGGTGCCTGTGGCCACGTACACCAACTCCTCACAGCCCTCCGACTGGGAGAGCCAGCTTTAA  
 CCGACAGTACGCCATATTTATGCCACACGCCTTATCCAGATGAGACCCTTCTGGTGAGCCGGGCGCAG  
 CAGCACTGGGGCAGCCAAGTTGAAGTGAAGAAGTTGTGTGAGCTGCAGCCGGGGAGCAGTGCTGTGTGG  
 TGGGCAGCTGTTCAAAGCCATGCCTCTCCAACCTCCATCCTGCGGAAATCAGCGAGGAGCACAACCT  
 GATCCCCAGCCGCTCGGAGCAAATACATCCACCCAGATGACGAACTGGTCTTAGAAGATGAATTGCAG  
 CGTATCAAAGTGAAGGGCACCATCGATGTGTCAAAGTTGGTCACAGGAACGGTCTTGGCTGTGTTGGCT  
 CTGTGAAGGATGACGGTAAGTTTTCAGTTGAGGACCAGTCTTTGCTGACCTGGCTCCACAGAATCCTGT  
 GCCCCACTTGACACAGACAGATTTGTGCTACTGGTGTCCGGACTGGGCCTGGGCGCGGTGGCGGGGAG  
 AGCCTCCTGGGCACGCAGCTGCTGGTAGACGTGGTACGGGACAGCTTGGGGACGAAGGGGAGCAGTGCA  
 GTGCTGCCACGTCTCTCGAGTCATCCTTGACAGGCAACCTCCTCAGTCATAACACCCAGAGCCGAGATTC  
 CATCAATAAGGCCAAATACCTCACCAAGAAAACCCAGGCAGCCAGTGTGGAGGCAGTCAAATGCTGGAC  
 GAGATCCTACTGCAACTCAGCGCCTCAGTACCCGTGGATGTGATGCCGGGAGAAATTTGATCCAACCAACT  
 ATACGCTCCCACAGCAGCCCTGCACCCCTGCATGTTCCCCCTGGCCACTGCCTACGCCACACTCCAGCT  
 GGTCACCAACCCATACCAAGCCACTATTGACGGAGTAAGTTCTGGGGACATCTGGGCAGAACGTGAGC  
 GATATCTTCCGGTATAGCAGCATGGAGGACCATTTAGAGATCCTAGAGTGGACCTGCGAGTCCGTCACA  
 TCAGCCCCACGGCCCAGACACCCTAGGGTGCTACCCCTTCTACAAAACCGACCCATTCTTTTGGCGGA  
 ATGCCCTCACGTCTACTTCTGCGGCAACACTCCACAGCTTTGGCTCTAAAGTCATCCGAGGTCTGAGGAC  
 CAGGCCGTGCTGTTGGTGCCGTTCTGACTTCAGTTCACACAGACAGCCTGCCTGGTGAACCTGCGTG  
 GCCTGACCTGCCAGCCTATCAGCTTTCAGGATTTGGGGCAGAGCAAGACGACCTAGAAGACCTGGGGCT  
 GGGTCCC

**ACGCGT**ACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:**

>RR207452 representing NM\_001013050  
 Red=Cloning site Green=Tags(s)

MFSEQAAQRAHTLLSPPSASNATFARVPVATYTNSSQPFRLGERSFNQYAHYATRLIQMRPFLVSRAQ  
 QHWGSQVEVKKLCELQPGEQCCVVGTLFKAMPLQPSILREISEEHNLIPQPPRSKYIHPDDELVLEDELQ  
 RIKLKGTIDVSKLVTGTVLAVFGSVKDDGKFQVEDHCFADLAPQNPVPLDTRFVLLVSLGLGGGGGE  
 SLLGTQLLVVVTGQLGDEGEQCSAAHVSRLVILAGNLLSHNTQSRDSINKAKYLTKKTQAASVEAVKMLD  
 EILLQLSASVPVDVMPGEFDPTNYTLPQQPLHPCMFPLATAYATLQLVTNPYQATIDGVRFLLGTSGQNV  
 DIFRYSSMEDHLEILEWTLRVRHISPTAPDTLGCYPFYKTDPFIFAECPHYVFCGNTPSFGSKVIRGPED  
 QAVLLVAVPDFSSTQTACLNLRLGLTCQPI SFAGFGAEQDDLEDLGLGP

**TR**TRPLEQKLISEEDLAANDILDYKDDDDKV

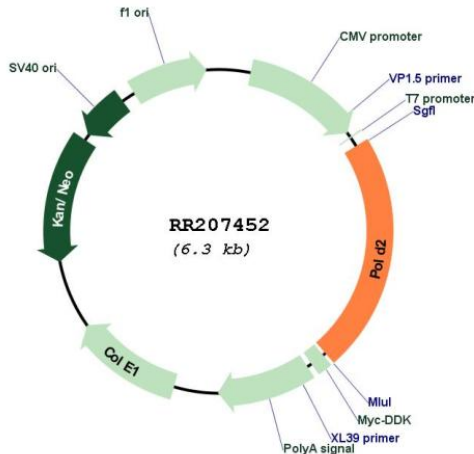
**Restriction Sites:**

Sgfl-MluI

**Cloning Scheme:**



**Plasmid Map:**



**ACCN:** NM\_001013050

**ORF Size:** 1407 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\\_001013050.1](#), [NP\\_001013068.1](#)

**RefSeq Size:** 1585 bp

**RefSeq ORF:** 1410 bp

**Locus ID:** 289758

**UniProt ID:** [Q6AXY4](#)

**Cytogenetics:** 14q21

**MW:** 51.3 kDa

**Gene Summary:** As a component of the trimeric and tetrameric DNA polymerase delta complexes (Pol-delta3 and Pol-delta4, respectively), plays a role in high fidelity genome replication, including in lagging strand synthesis, and repair. Pol-delta3 and Pol-delta4 are characterized by the absence or the presence of POLD4. They exhibit differences in catalytic activity. Most notably, Pol-delta3 shows higher proofreading activity than Pol-delta4. Although both Pol-delta3 and Pol-delta4 process Okazaki fragments in vitro, Pol-delta3 may also be better suited to fulfill this task, exhibiting near-absence of strand displacement activity compared to Pol-delta4 and stalling on encounter with the 5'-blocking oligonucleotides. Pol-delta3 idling process may avoid the formation of a gap, while maintaining a nick that can be readily ligated. Along with DNA polymerase kappa, DNA polymerase delta carries out approximately half of nucleotide excision repair (NER) synthesis following UV irradiation. Under conditions of DNA replication stress, required for the repair of broken replication forks through break-induced replication (BIR). Involved in the translesion synthesis (TLS) of templates carrying O6-methylguanine or abasic sites performed by Pol-delta4, independently of DNA polymerase zeta (REV3L) or eta (POLH). Facilitates abasic site bypass by DNA polymerase delta by promoting extension from the nucleotide inserted opposite the lesion. Also involved in TLS as a component of the POLZ complex. Along with POLD3, dramatically increases the efficiency and processivity of DNA synthesis of the minimal DNA polymerase zeta complex, consisting of only REV3L and REV7. [UniProtKB/Swiss-Prot Function]