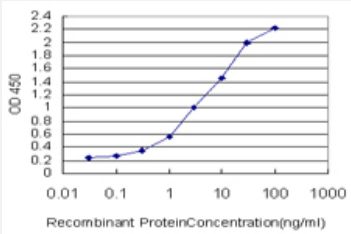
POLD3 monoclonal antibody (M01), clone 3E2

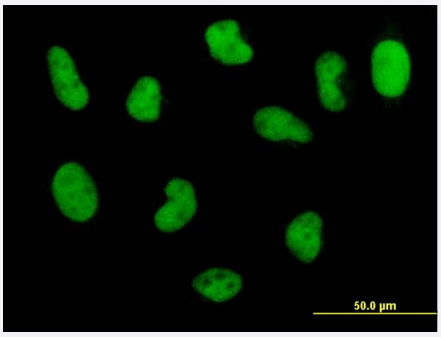
Catalog # H00010714-M01 Size 100 ug

Applications



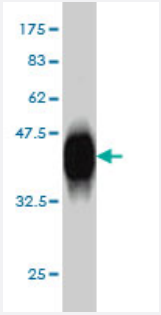
Sandwich ELISA (Recombinant protein)

Detection limit for recombinant GST tagged POLD3 is approximately 0.03ng/ml as a capture antibody.



Immunofluorescence

Immunofluorescence of monoclonal antibody to POLD3 on HeLa cell . [antibody concentration 10 ug/ml]



Western Blot detection against Immunogen (37.84 KDa) .

Specification

Product Description	Mouse monoclonal antibody raised against a partial recombinant POLD3.

Immunogen	POLD3 (NP_006582, 357 a.a. ~ 466 a.a) partial recombinant protein with GST tag. MW of the GST tag alone is 26 KDa.
Sequence	PPLEPVPKTEPEPPSVKSSSGENKRKRKRVLKSKTYLDGEGCIVTEKVYESESCTDSEEELNMK TSSVHRPPAMTVKKEPREERKGPKKGTAALGKANRQVSITGFFQRK
Host	Mouse
Reactivity	Human
Interspecies Antigen Sequence	Mouse (84); Rat (85)
Isotype	IgG2a Kappa
Quality Control Testing	Antibody Reactive Against Recombinant Protein. Western Blot detection against Immunogen (37.84 KDa) .
Storage Buffer	In 1x PBS, pH 7.4
Storage Instruction	Store at -20°C or lower. Aliquot to avoid repeated freezing and thawing.

Applications

- Western Blot (Recombinant protein)

  Protocol Download

- Sandwich ELISA (Recombinant protein)

  Detection limit for recombinant GST tagged POLD3 is approximately 0.03ng/ml as a capture antibody.

  Protocol Download

- ELISA

- Immunofluorescence

  Immunofluorescence of monoclonal antibody to POLD3 on HeLa cell . [antibody concentration 10 ug/ml]

Gene Info — POLD3

Entrez GeneID	10714
GeneBank Accession#	NM_006591

Protein Accession#	NP_006582
Gene Name	POLD3
Gene Alias	KIAA0039, MGC119642, MGC119643, P66, P68
Gene Description	polymerase (DNA-directed), delta 3, accessory subunit
Omim ID	611415
Gene Ontology	Hyperlink
Gene Summary	The DNA polymerase delta complex is involved in DNA replication and repair, and it consists of th e proliferating cell nuclear antigen (PCNA; MIM 176740), the multisubunit replication factor C (see MIM 102579), and the 4 subunit polymerase complex: POLD1 (MIM 174761), POLD2 (MIM 6008 15), POLD3, and POLD4 (MIM 611525) (Liu and Warbrick, 2006 [PubMed 16934752]).[supplied by OMIM
Other Designations	DNA polymerase delta, subunit 3|polymerase (DNA directed), delta 3

Publication Reference

- Oxidative guanine base damage plays a dual role in regulating productive ALT-associated homology-directed repair.

  Sanjana A Thosar, Ryan P Barnes, Ariana Detwiler, Ragini Bhargava, Anne Wondisford, Roderick J O'Sullivan, Patricia L Opresko.

  Cell Reports 2024 Jan; 43(1):113656.

  Application: IF, Human, HeLa LT FAP, U2OS FAP cells

- Alternative lengthening of telomeres (ALT) cells viability is dependent on C-rich telomeric RNAs.

  Ilaria Rosso, Corey Jones-Weinert, Francesca Rossiello, Matteo Cabrini, Silvia Brambillasca, Leonel Munoz-Sagredo, Zeno Lavagnino, Emanuele Martini, Enzo Tedone, Massimiliano Garre', Julio Aguado, Dario Parazzoli, Marina Mione, Jerry W Shay, Ciro Mercurio, Fabrizio d'Adda di Fagagna.

  Nature Communications 2023 Nov; 14(1):7086.

  Application: IF, Human, U2OS cells

- Break-induced replication orchestrates resection-dependent template switching.

  Tianpeng Zhang, Yashpal Rawal, Haoyang Jiang, Youngho Kwon, Patrick Sung, Roger A Greenberg.

  Nature 2023 Jul; 619(7968):201.

  Application: WB-Ce, Human, HeLa, U2OS cells

- Mitotic tethering enables inheritance of shattered micronuclear chromosomes.

  Prasad Trivedi, Christopher D Steele, Franco K C Au, Ludmil B Alexandrov, Don W Cleveland.

  Nature 2023 Jun; 618(7967):1049.

  Application: WB-Tr, Human, HEK293 cells

- Pathway choice in the alternative telomere lengthening in neoplasia is dictated by replication fork processing mediated by EXD2's nuclease activity.

  Ronan Broderick, Veronica Cherdyntseva, Jadwiga Nieminuszczy, Eleni Dragona, Maria Kyriakaki, Theodora Evmorfopoulou, Sarantis Gagos, Wojciech Niedzwiedz.

  Nature Communications 2023 Apr; 14(1):2428.

  Application: WB-Ce, Human, U2OS cells

- Excessive reactive oxygen species induce transcription-dependent replication stress.

  Martin Andrs, Henriette Stoy, Barbora Boleslavska, Nagaraja Chappidi, Radhakrishnan Kanagaraj, Zuzana Nascakova, Shruti Menon, Satyajeet Rao, Anna Oravetzova, Jana Dobrovolna, Kalpana Surendranath, Massimo Lopes, Pavel Janscak

  Nature Communications 2023 Mar; 14(1):1791.

  Application: WB-Ce, Human, Human Bone Osteosarcoma Epithelial Cells (H2OS cells)

- XPF activates break-induced telomere synthesis.

  Chia-Yu Guh, Hong-Jhih Shen, Liv WeiChien Chen, Pei-Chen Chiu, I-Hsin Liao, Chen-Chia Lo, Yunfei Chen, Yu-Hung Hsieh, Ting-Chia Chang, Chien-Ping Yen, Yi-Yun Chen, Tom Wei-Wu Chen, Liuh-Yow Chen, Ching-Shyi Wu, Jean-Marc Egly, Hsueh-Ping Catherine Chu.

  Nature Communications 2022 Oct; 13(1):5781.

  Application: IF, Human, U2OS cells

- Error-prone repair of stalled replication forks drives mutagenesis and loss of heterozygosity in haploinsufficient BRCA1 cells.

  Madhura Deshpande, Theodore Paniza, Nahed Jalloul, Gouri Nanjangud, Jerzy Twarowski, Amnon Koren, Nikica Zaninovic, Qiansheng Zhan, Kalyani Chadalavada, Anna Malkova, Hossein Khiabanian, Advaitha Madireddy, Zev Rosenwaks, Jeannine Gerhardt.

  Molecular Cell 2022 Oct; 82(20):3781.

  Application: IF, Human, MCF10A cells

- Cockayne syndrome group B protein uses its DNA translocase activity to promote mitotic DNA synthesis.

  Shixin Cui, John R Walker, Nicole L Batenburg, Xu-Dong Zhu.

  DNA Repair 2022 Aug; 116:103354.

  Application: IF, Human, U2OS cells

- DNA replication is highly resilient and persistent under the challenge of mild replication stress.

  Camelia Mocanu, Eleftheria Karanika, María Fernández-Casañas, Alex Herbert, Tomisin Olukoga, Mete Emir Özgürses, Kok-Lung Chan.

  Cell Reports 2022 Apr; 39(3):110701.

  Application: WB-Tr, Human, U2OS cells

- Anti-recombination function of MutSα restricts telomere extension by ALT-associated homology-directed repair.

  Jonathan Barroso-González, Laura García-Expósito, Pablo Galaviz, Michelle Lee Lynskey, Joshua A M Allen, SongMy Hoang, Simon C Watkins, Hilda A Pickett, Roderick J O'Sullivan.

  Cell Reports 2021 Dec; 37(10):110088.

  Application: IF-Tr, Human, U-2 OS cells

- CSB cooperates with SMARCAL1 to maintain telomere stability in ALT cells.

  Feng E, Batenburg NL, Walker JR, Ho A, Mitchell TRH, Qin J, Zhu XD.

  Journal of Cell Science 2020 Feb; 133(4): jcs234914.

  Application: IF, Human, U-2 OS cells

- Nuclear Body Phase Separation Drives Telomere Clustering in ALT Cancer Cells.

  Huaiying Zhang, Rongwei Zhao, Jason Tones, Michel Liu, Robert Dilley, David M Chenoweth, Roger A Greenberg, Michael A Lampson.

  Molecular Biology of the Cell 2020 Aug; 31(18):2048.

  Application: IF, Human, U-2 OS cells

- FANCM suppresses DNA replication stress at ALT telomeres by disrupting TERRA R-loops.

  Pan X, Chen Y, Biju B, Ahmed N, Kong J, Goldenberg M, Huang J, Mohan N, Klosek S, Parsa K, Guh CY, Lu R, Pickett HA, Chu HP, Zhang D.

  Scientific Reports 2019 Dec; 9(1):19110.

  Application: WB-Tr, Human, U2OS cells

- Fork Cleavage-Religation Cycle and Active Transcription Mediate Replication Restart after Fork Stalling at Co-transcriptional R-Loops.

  Chappidi N, Nascakova Z, Boleslavska B, Zellweger R, Isik E, Andrs M, Menon S, Dobrovolna J, Balbo Pogliano C, Matos J, Porro A, Lopes M, Janscak P.

  Molecular Cell 2020 Feb; 77(3):528.

  Application: WB-Tr, Human, U-2 OS cells

- RAD51AP1 Is an Essential Mediator of Alternative Lengthening of Telomeres.

  Barroso-González J, García-Expósito L, Hoang SM, Lynskey ML, Roncaioli JL, Ghosh A, Wallace CT, Modesti M, Bernstein KA, Sarkar SN, Watkins SC, O'Sullivan RJ.

  Molecular Cell 2019 Oct; 76(1):217.

  Application: WB, Human, HeLa, U-2 OS cells

- An OB-fold complex controls the repair pathways for DNA double-strand breaks.

  Gao S, Feng S, Ning S, Liu J, Zhao H, Xu Y, Shang J, Li K, Li Q, Guo R, Xu D.

  Nature Communications 2018 Sep; 9(1):3925.

  Application: WB-Tr, Human, HEK 293 cells

- Replication stress activates DNA repair synthesis in mitosis.

  Minocherhomji S, Ying S, Bjerregaard VA, Bursomanno S, Aleliunaite A, Wu W, Mankouri HW, Shen H, Liu Y, Hickson ID.

  Nature 2015 Dec; 528(7581):286.

  Application: WB, IF, Human, HeLa, U2OS cells

- Proteome-wide analysis of SUMO2 targets in response to pathological DNA replication stress in human cells.

  Bursomanno S, Beli P, Khan AM, Minocherhomji S, Wagner SA, Bekker-Jensen S, Mailand N, Choudhary C, Hickson ID, Liu Y.

  DNA Repair 2015 Jan; 25:84.

  Application: WB-Tr, Human, U2OS cells

Pathway

- Base excision repair
- DNA replication
- Homologous recombination
- Metabolic pathways
- Mismatch repair
- Nucleotide excision repair
- Purine metabolism
- Pyrimidine metabolism

Disease

- Urinary Bladder Neoplasms