

POLQ RABBIT PAB

Cat.#: S221913

Product Name: Anti-POLQ Rabbit Polyclonal Antibody

Synonyms: PRO0327

UNIPROT ID: O75417 (Gene Accession - NP_955452)

Background: DNA polymerase that promotes microhomology-mediated end-joining (MMEJ), an alternative non-homologous end-joining (NHEJ) machinery triggered in response to double-strand breaks in DNA (PubMed:25642963, PubMed:25643323). MMEJ is an error-prone repair pathway that produces deletions of sequences from the strand being repaired and promotes genomic rearrangements, such as telomere fusions, some of them leading to cellular transformation (PubMed:25642963, PubMed:25643323). POLQ acts as an inhibitor of homology-recombination repair (HR) pathway by limiting RAD51 accumulation at resected ends (PubMed:25642963). POLQ-mediated MMEJ may be required to promote the survival of cells with a compromised HR repair pathway, thereby preventing genomic havoc by resolving unrepaired lesions (By similarity). The polymerase acts by binding directly the 2 ends of resected double-strand breaks, allowing microhomologous sequences in the overhangs to form base pairs. It then extends each strand from the base-paired region using the opposing overhang as a template. Requires partially resected DNA containing 2 to 6 base pairs of microhomology to perform MMEJ (PubMed:25643323). The polymerase activity is highly promiscuous: unlike most polymerases, promotes extension of ssDNA and partial ssDNA (pssDNA) substrates (PubMed:18503084, PubMed:21050863, PubMed:22135286). Also exhibits low-fidelity DNA synthesis, translesion synthesis and lyase activity, and it is implicated in interstrand-cross-link repair, base excision repair and DNA end-joining (PubMed:14576298, PubMed:18503084, PubMed:19188258, PubMed:24648516). Involved in somatic hypermutation of immunoglobulin genes, a process that requires the activity of DNA polymerases to ultimately introduce mutations at both A/T and C/G base pairs (By similarity).

Immunogen: Synthetic peptide of human POLQ

Applications: ELISA, IHC

Recommended Dilutions: IHC: 50-100; ELISA: 5000-10000

Host Species: Rabbit

Clonality: Rabbit Polyclonal

Isotype: Immunogen-specific rabbit IgG

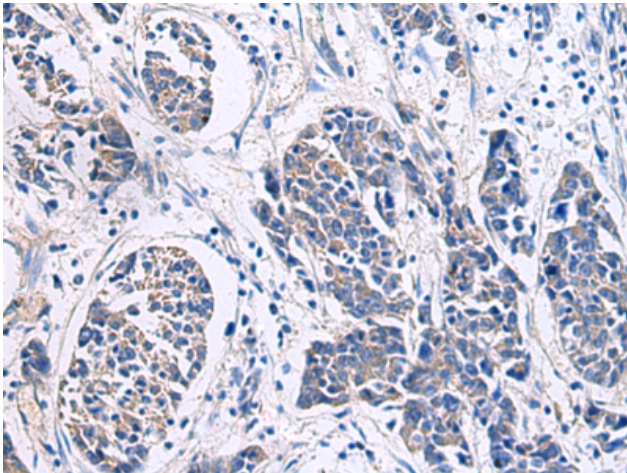
Purification: Antigen affinity purification

Species Reactivity: Human, Mouse

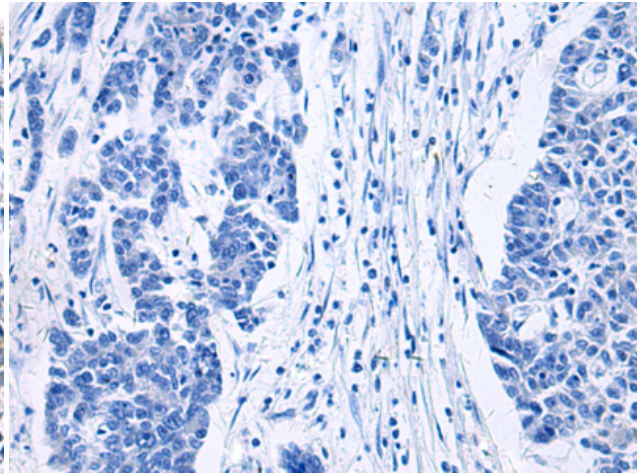
Constituents: PBS (without Mg²⁺ and Ca²⁺), pH 7.4, 150 mM NaCl, 0.05% Sodium Azide and 40% glycerol

Research Areas: Epigenetics and Nuclear Signaling

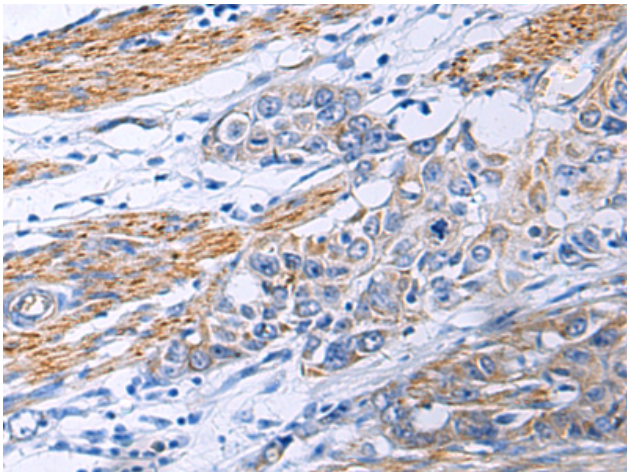
Storage & Shipping: Store at -20°C. Avoid repeated freezing and thawing



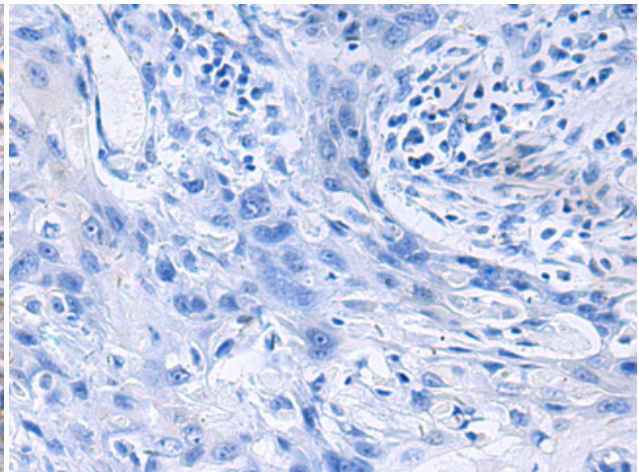
Immunohistochemistry analysis of paraffin embedded Human colorectal cancer using 221913 (POLQ Antibody) at a dilution of 1/30 (Cytoplasm).



In comparison with the IHC on the left, the same paraffin-embedded Human colorectal cancer is first treated with the synthetic peptide and then with 221913 (Anti-POLQ Antibody) at dilution 1/30.



The image on the left is immunohistochemistry of paraffin-embedded Human esophagus cancer using 221913 (Anti-POLQ Antibody) at a dilution of 1/30.



In comparison with the IHC on the left, the same paraffin-embedded Human esophagus cancer is first treated with synthetic peptide and then with D263727 (Anti-POLQ Antibody) at dilution 1/30.