



Anti-DCLRE1C (DNA cross-link repair 1C protein) Phospho Polyclonal Antibody

Category: Phospho-Polyclonal Antibody

Catalog#: Phospho-AB1F069 (Phospho site: 645S)

Antigen Synonym: ARTEMIS, ASCID, SCIDA, SNM1C

Species Reactivity: Human

Immunogen/Specificity:

Polyclonal antibody produced in rabbits immunizing with a synthetic peptide corresponding to C-residues of human DCLRE1C (DNA cross-link repair 1C protein)

Description: DCLRE1C (DNA cross-link repair 1C protein) is required for V(D)J recombination, the process by which exons encoding the antigen-binding domains of immunoglobulins and T-cell receptor proteins are assembled from individual V, (D), and J gene segments. V(D)J recombination is initiated by the lymphoid specific RAG endonuclease complex, which generates site specific DNA double strand breaks (DSBs). These DSBs present two types of DNA end structures: hairpin sealed coding ends and phosphorylated blunt signal ends. These ends are independently repaired by the non homologous end joining (NHEJ) pathway to form coding and signal joints respectively. This protein exhibits single-strand specific 5'-3' exonuclease activity in isolation and acquires endonucleolytic activity on 5' and 3' hairpins and overhangs when in a complex with PRKDC. The latter activity is required specifically for the resolution of closed hairpins prior to the formation of the coding joint. May also be required for the repair of complex DSBs induced by ionizing radiation, which require substantial end-processing prior to religation by NHEJ.

Reference:

- Moshous,D., et al, Cell 105 (2), 177-186 (2001)
- Ma,Y., et al, Cell 108 (6), 781-794 (2002)
- Callebaut,I., et al, Nucleic Acids Res. 30 (16), 3592-3601 (2002)
- Pannicke,U., et al, EMBO J. 23 (9), 1987-1997 (2004)
- Poinsignon,C., et al, Eur. J. Immunol. 34 (11), 3146-3155 (2004)
- Poinsignon,C., et al, J. Exp. Med. 199 (3), 315-321 (2004)
- Ma,Y., et al, Mol. Cell 16 (5), 701-713 (2004)

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