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LIG4 Antibody (monoclonal) (M01)

Mouse monoclonal antibody raised against a partial recombinant LIG4.
Catalog # AT2713a

Product Information

Application	E
Primary Accession	P49917
Other Accession	BC037491
Reactivity	Human
Host	mouse
Clonality	monoclonal
Isotype	IgG2a kappa
Clone Names	1A4
Calculated MW	103971

Additional Information

Gene ID	3981
Other Names	DNA ligase 4, DNA ligase IV, Polydeoxyribonucleotide synthase [ATP] 4, LIG4
Target/Specificity	LIG4 (AAH37491, 802 a.a. ~ 911 a.a) partial recombinant protein with GST tag. MW of the GST tag alone is 26 KDa.
Dilution	E~~N/A
Format	Clear, colorless solution in phosphate buffered saline, pH 7.2 .
Storage	Store at -20°C or lower. Aliquot to avoid repeated freezing and thawing.
Precautions	LIG4 Antibody (monoclonal) (M01) is for research use only and not for use in diagnostic or therapeutic procedures.

Background

The protein encoded by this gene is a DNA ligase that joins single-strand breaks in a double-stranded polydeoxynucleotide in an ATP-dependent reaction. This protein is essential for V(D)J recombination and DNA double-strand break (DSB) repair through nonhomologous end joining (NHEJ). This protein forms a complex with the X-ray repair cross complementing protein 4 (XRCC4), and further interacts with the DNA-dependent protein kinase (DNA-PK). Both XRCC4 and DNA-PK are known to be required for NHEJ. The crystal structure of the complex formed by this protein and XRCC4 has been resolved. Defects in this gene are the cause of LIG4 syndrome. Alternatively spliced transcript variants encoding the same protein have been observed.

References

The role of common variants of non-homologous end-joining repair genes XRCC4, LIG4 and Ku80 in thyroid cancer risk. Gomes BC, et al. Oncol Rep, 2010 Oct. PMID 20811692.A large-scale candidate gene approach identifies SNPs in SOD2 and IL13 as predictive markers of response to preoperative chemoradiation in rectal cancer. Ho-Pun-Cheung A, et al. Pharmacogenomics J, 2010 Jul 20. PMID 20644561.Gamma-Radiation Sensitivity and Polymorphisms in RAD51L1 Modulate Glioma Risk. Liu Y, et al. Carcinogenesis, 2010 Jul 7. PMID 20610542.Variation within DNA repair pathway genes and risk of multiple sclerosis. Briggs FB, et al. Am J Epidemiol, 2010 Jul 15. PMID 20522537.Analysis of the polymorphisms in non-homologous DNA end joining (NHEJ) gene Ku70 and Ligase IV in sporadic breast cancer in women. Sobczuk A, et al. Pol J Pathol, 2010. PMID 20496270.