UHRF1 monoclonal antibody

Catalog: MB66472 Host: Mouse Reactivity: Human, Mouse

BackGround:

Ubiquitin-like PHD and RING finger domain-containing protein 1 (UHRF1), also known as Inverted CCAAT box-binding protein of 90 kDa (ICBP90) and Nuclear Zinc Finger Protein NP95 (NP95), is a nuclear protein that was first discovered as a CCAAT box-binding protein that regulates the expression of the Topoisomerase IIα and Rb1 genes. Later studies have shown that UHRF1 is required for maintenance of CpG DNA methylation, the process of copying pre-existing methylation patterns onto the newly synthesized DNA strand after DNA replication . UHRF1 localizes primarily with highly methylated pericentromeric heterochromatin and is required for proper structure and function of these regions of the genome. However, UHRF1 also localizes to euchromatic regions of the genome and functions to negatively regulate the expression of a subset of tumor suppressor genes. The localization and repressive functions of UHRF1 are both mediated by several protein domains, including a ubiquitin-like domain (UBQ), Tudor domain, PHD domain, SET and RING finger-associated (SRA) domain, and a RING finger domain. The SRA domain of UHRF1 binds with high affinity to hemi-methylated DNA and functions to properly target the associated maintenance DNA methyltransferase DNMT1 protein to mediate faithful methylation of the newly synthesized DNA strand . Additional targeting of UHRF1 to heterochromatin is mediated by the Tudor domain, which binds specifically to tri-methylated lysine 9 of histone H3, a histone mark associated with pericentromeric heterochromatin. Targeting of UHRF1 to euchromatin is further mediated by the PHD domain, which binds specifically to un-methylated arginine 2 of histone H3, which is commonly associated with euchromatin . In addition to recruiting DNMT1, UHRF1 recruits the histone deacetylase 1 (HDAC1) protein to target loci, resulting in deacetylation of histones, and providing an additional mechanism for transcriptional repression. Taken together, these studies demonstrate that UHRF1 functions to link DNA methylation and histone modifications to the maintenance of repressive chromatin structures. These functions of UHRF1 are important for proper maintenance of cell growth and proliferation, as research studies have shown UHRF1 over-expression in a number of cancers (breast, lung, colon, and prostate cancer) is associated with increased proliferation and malignancy.

Product:

Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide, pH 7.3.

Molecular Weight:

~ 90 kDa

Swiss-Prot:

Q96T88

Purification&Purity:

The antibody was purified by immunogen affinity chromatography.

Applications:

WB (1/500 - 1/1000)

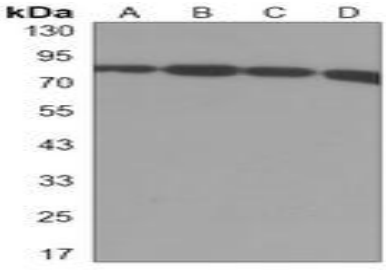
Storage&Stability:

Store at 4℃ short term. Aliquot and store at -20℃ long term. Avoid freeze-thaw cycles.

Specificity:

Recognizes endogenous levels of UHRF1 protein.

DATA:



Western blot analysis of UHRF1 expression in mouse heart (A), 293T

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(B), Hela (C), Hela (D) whole cell lysates.

For research use only, not for use in diagnostic procedure.

Note:

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