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BRD4

Reactivity: Human Mouse Rat

Tested applications:WB IHC ICC

Recommended Dilution:WB 1:500 - 1:2000 IHC 1:50 - 1:200 ICC 1:100 - 1:250

Calculated MW:152kDa

Observed MW: Refer to Figures

Immunogen:

Recombinant protein of human BRD4

Storage Buffer:

Store at -20. Avoid freeze / thaw cycles. Buffer: PBS with 0.02% sodium azide, 50% glycerol, pH7.3.

Synonym:

BRD4; CAP; HUNK1; HUNKI; MCAP; Bromodomain-containing protein 4; Protein HUNK1;

Catalog #:A2249

Antibody Type:

Polyclonal Antibody

Species: Rabbit

Gene ID:23476

Isotype: IgG

Swiss Prot:O60885

Purity: Affinity purification

For research use only.

Background:

Bromodomain-containing protein 4 (BRD4) is a member of the bromodomains and extraterminal (BET) family of proteins, which also includes BRD2, BRD3, and BRDT (1-3). BET family proteins contain two tandem bromodomains and an extra terminal (ET) domain, and bind acetyl lysine residues (3). BRD4 is a chromatin-binding protein with a preference for Lys14 on histone H3 as well as Lys5 and Lys12 on histone H4 (4). BRD4 chromatin binding occurs throughout the cell cycle, including condensed mitotic chromosomes, when the majority of genes are silenced (5). BRD4 association with chromatin during mitosis is thought to be an important part of the bookmarking mechanism to accelerate re-activation of the silenced genes upon exit from mitosis (2,6). BRD4 has been shown to facilitate transcription by recruiting the positive transcription elongation factor b (pTEFb) complex that phosphorylates Ser2 of the heptapeptide repeat of the C-terminal domain of RNA polymerase II, promoting transcription elongation (3,7,8). In addition, BRD4 has been found to be part of the super elongation complex and the polymerase associated factor complex (PAFc) in MLL-fusion derived leukemia cell lines, demonstrating a role for BRD4 in the regulation of transcription elongation (9). Research studies have shown that BRD4 (and BET family proteins) may be promising theraeupic targets for various Myc-driven cancers, such as Burkitts lymphoma and certain acute myeloid leukemias (1,10,11). Investigators have found molecular inhibition of BET proteins to be effective in inducing apoptosis in various MLL-fusion driven leukemic cell lines by competing BRD3 and BRD4 from chromatin, leading to reduced expression of Bcl-2, Myc, and CDK6 (9). BET inhibition has also been shown to have antitumor activities against nuclear protein in testis (NUT) midline carcinoma cell lines and xenografts in mice where BRD4 is found to be a frequent translocation partner of the NUT protein (12). In addition, BRD4 regulates the expression of some inflammatory genes, and inhibition of BRD4 (and BET family proteins) chromatin binding causes reduced expression of a subset of inflammatory genes in macrophages, leading to protection against endotoxic shock and sepsis (13).

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