

BRD4 Protein, Human (His-Flag)

Cat. No.:	HY-P7846
Synonyms:	rHuBromodomain-containing protein 4/BRD4, His-Flag; HUNK1; HUNK1bromodomain-containing protein 4; HUNK1; MCAP
Species:	Human
Source:	E. coli
Accession:	O60885 (E49-E460)
Gene ID:	23476
Molecular Weight:	Approximately 54-60 kDa

PROPERTIES

AA Sequence	<pre> E T S N P N K P K R Q T N Q L Q Y L L R V V L K T L W K H Q F A W P F Q Q P V D A V K L N L P D Y Y K I I K T P M D M G T I K K R L E N N Y Y W N A Q E C I Q D F N T M F T N C Y I Y N K P G D D I V L M A E A L E K L F L Q K I N E L P T E E T E I M I V Q A K G R G R G R K E T G T A K P G V S T V P N T T Q A S T P P Q T Q T P Q P N P P P V Q A T P H P F P A V T P D L I V Q T P V M T V V P P Q P L Q T P P P V P P Q P Q P P P A P A P Q P V Q S H P P I I A A T P Q P V K T K K G V K R K A D T T T P T T I D P I H E P P S L P P E P K T T K L G Q R R E S S R P V K P P K K D V P D S Q Q H P A P E K S S K V S E Q L K C C S G I L K E M F A K K H A A Y A W P F Y K P V D V E A L G L H D Y C D I I K H P M D M S T I K S K L E A R E Y R D A Q E F G A D V R L M F S N C Y K Y N P P D H E V V A M A R K L Q D V F E M R F A K M P D E </pre>
Biological Activity	Measured in a cell proliferation assay using M-NFS-60 cells. The ED ₅₀ for this effect is ≤13.78 ng/mL, corresponding to a specific activity is ≥7.26×10 ⁴ units/mg.
Appearance	Solution.
Formulation	Supplied as a 0.2 μm filtered solution of 50 mM HEPES, 200 mM NaCl, 1 mM DTT, 10% Glycerol, pH 7.5 or 50 mM HEPES, 300 mM NaCl, 1 mM DTT, 10% Glycerol, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconstitution	N/A
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice

DESCRIPTION

Background

BRD4 protein functions as a chromatin reader, specifically recognizing and binding acetylated histones, thereby playing a crucial role in transmitting epigenetic memory across cell divisions and regulating transcription. It remains associated with acetylated chromatin throughout the cell cycle, preserving the acetylated chromatin status and maintaining high-order chromatin structure, contributing to epigenetic memory for postmitotic G1 gene transcription. During interphase, BRD4 is pivotal in regulating the transcription of signal-inducible genes by associating with the P-TEFb complex and recruiting it to promoters. Additionally, it collaborates with JMJD6 in recruiting the P-TEFb complex to distal enhancers, known as anti-pause enhancers, displacing negative regulators and transforming P-TEFb into an active form that can phosphorylate the C-terminal domain of RNA polymerase II. BRD4 also acts as an atypical protein kinase, promoting phosphorylation of 'Ser-2' of the C-terminal domain of RNA polymerase II. Beyond histones, BRD4 recognizes and binds acetylated RELA, facilitating the recruitment of the P-TEFb complex and activating NF-kappa-B. Furthermore, it acts as a regulator of p53/TP53-mediated transcription, being recruited to specific target promoters upon phosphorylation by CK2. In the DNA damage response pathway, BRD4 acts as a chromatin insulator, inhibiting DNA damage response signaling by recruiting the condensin-2 complex to acetylated histones and limiting the spreading of histone H2AX/H2A.x phosphorylation. These diverse functions underscore the versatile role of BRD4 in epigenetic regulation, transcriptional control, and maintenance of chromatin structure.

Caution: Product has not been fully validated for medical applications. For research use only.

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