

## Recombinant BRD4 (44-168) protein

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**Catalog No:** 31380, 31880

**Expressed In:** *E. coli*

**Quantity:** 100, 1000 µg

**Concentration:** 2 µg/µl

**Source:** Human

**Buffer Contents:** Recombinant BRD4 (44-168) protein was expressed in *E. coli* and is supplied in 25 mM Tris-HCl pH 8.0, 300 mM NaCl and 10% glycerol.

**Background: Bromodomain-containing protein 4 (BRD4)** belongs to the BET subclass of proteins, which are characterized by two N-terminal bromodomains and one ET (Extra Terminal) domain. BRDs associate with chromatin through their bromodomains that recognize acetylated histone lysine residues. Bromodomains function as 'readers' of these epigenetic histone marks and regulate chromatin structure and gene expression by linking associated proteins to the acetylated nucleosomal targets. The ET domain functions as a protein binding motif and exerts atypical serine-kinase activity. The BET family consists of at least four members in mouse and human, BRD2 (also referred to as FSRG1, RING3), BRD3 (FSRG2, ORFX), BRD4 (FSRG4, MCAP/HUNK1), and BRDT (FSRG3, BRD6). BRD proteins are related to the female sterile homeotic protein gene in *Drosophila*, a gene required maternally for proper expression of other homeotic genes, such as *Ubx*, which is involved in pattern formation. BRD4 has been identified recently as a therapeutic target in many cancers, including acute myeloid leukemia, multiple myeloma, Burkitt's lymphoma, NUT midline carcinoma, colon cancer, and breast cancer. BRD4 regulates the transcription of oncogenes, HIV, and human papilloma virus (HPV). It has been shown to bind and phosphorylate RNA pol II, which implicates its involvement in the regulation of eukaryotic transcription.

**Protein Details:** The peptide corresponding to amino acids 44 - 168 that contains the bromodomain sequences of BRD4 (accession number NM\_058243.2) was expressed in *E. coli* and contains an N-terminal His-Tag and C-terminal FLAG-Tag with an observed molecular weight of 20 kDa. It shows binding specificity for acetylated H3K9, H3K9/K14, H4K5, H4K8, H4K12, H4K5/K8, H4K5/K12, H4K8/K12, H4K12/K16, H4K12/K16/K20 and H4K5/K8/K12/K16, as well as acetylated RelA-K310. The recombinant protein is >90% pure by SDS-PAGE.

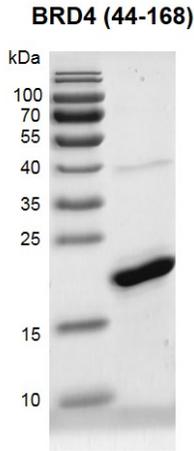
**Application Notes:** Recombinant BRD4 (44-168) is suitable for use in binding assays, inhibitor screening, and selectivity profiling.

### References:

This product was used in the following publications:

*Bioorg. Med. Chem.* (2017). 25(8):2482-2490. PMID: 28314513.

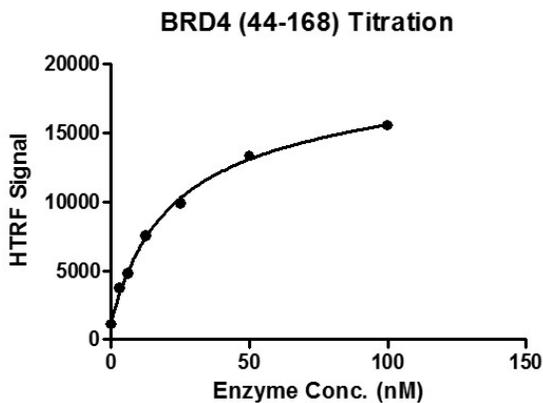
**Storage and Guarantee:** Recombinant proteins in solution are temperature sensitive and must be stored at -80°C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. This product is for research use only and is not for use in diagnostic procedures. This product is guaranteed for 6 months from date of arrival.



**Recombinant BRD4 (44-168) protein gel.**

BRD4 (44-168) protein was run on an 12.5% SDS-PAGE gel and stained with Coomassie blue.

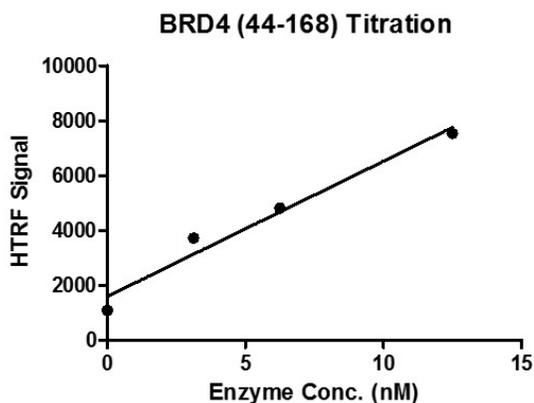
MW: 20 kDa  
Purity: > 88%



**HTRF assay for BRD4 (44-168) activity**

3  $\mu$ M histone H4K5/8/12/16(ac4) peptide was incubated with different concentrations of BRD4 (44-168) protein in a 10  $\mu$ l reaction system containing 50 mM HEPES-NaOH pH 7.4, 0.1% BSA for 1 hour, then 10  $\mu$ l FLAG antibody and SA-XL665 mixture (each 1:100 dilution in the reaction buffer) was added to each reaction system and incubated for 30 min.

All the operations and reactions were performed at room temperature. HTRF assay was used for detection.



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