

Broad Institute - Encode3 Secondary Antibody Validation

Bethyl Labs A301-985A50 Lot 3

Target: BRD4

Approved name: bromodomain containing 4

Function: BRD4 is a member of the BET family (bromodomain and extra terminal domain), and like other BET proteins has two bromodomains, a structural motif involved in binding to acetyl-lysine. It functions to recruit transcriptional regulatory complexes, such as P-TEFb, to acetylated chromatin. It is capable of binding to diverse acetylated histone residues on each of histones H2A, H2B, H3, and H4. It binds detectably to Histone H3 that is multiply acetylated at lysine residue 27 in combination with lysine residues 18 and / or 23.

Member of complex: not relevant to this validation

References:

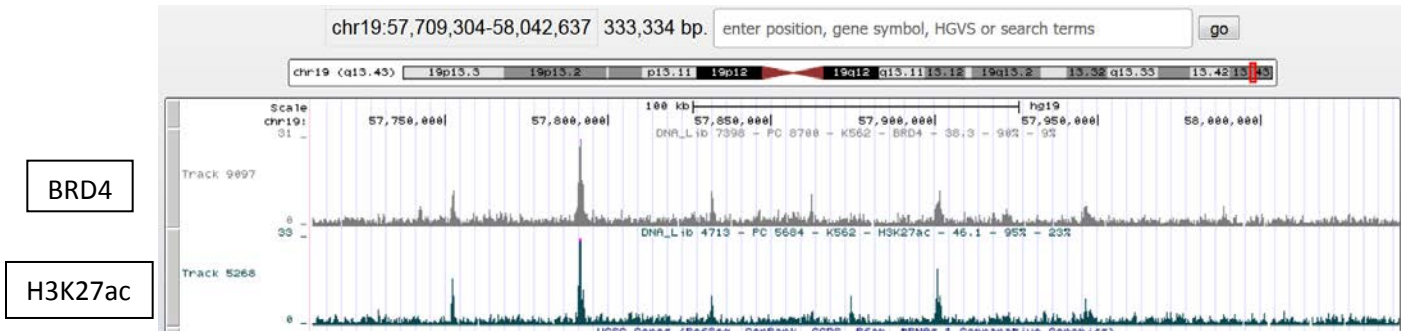
1. Cell. 2012. 149(1):214-31. Histone regulation and large-scale structural analysis of the human bromodomain family. Filippakopoulos P, Picaud S, Mangos M, Keates T, Lambert JP, Baryte-Lovejoy D, Felletar I, Volkmer R, Müller S, Pawson T, Gingras AC, Arrowsmith CH, Knapp S. [PMID: 22464331](#)
2. Mol Cell. 2015. 54(5):728-736. The mechanisms behind the therapeutic activity of BET bromodomain inhibition. Junwei S and Vakoc CR. [PMCID: PMC4236231](#)

Antibody being validated:

1. Bethyl Labs A301-985A50 Lot 3 [Rabbit polyclonal, affinity purified]
2. Broad Alias: PchAb 1271
3. Immunogen: Between residues 1312 and 1362
4. <https://www.encodeproject.org/antibodies/ENCAB782ZNQ/>

This validation relies on the use of antibodies to a chromatin regulator (BRD4) and a histone modification (H3K27ac) in K562 cells, and the demonstration that highly similar patterns of enrichment are obtained with each antibody. The first track shown used an antibody to BRD4 (PchAb 1271, ENCAB782ZNQ), and the second track shown used an antibody to H3K27ac previously characterized to Encode standards (PchAb 205, ENCAB000AQN).

Overall correlation score = 0.8046



Antibody being compared (H3K27ac):

1. Active Motif 39133 Lot# 31610003 (rabbit polyclonal, Protein A chromatography purified)
2. Broad Alias: PchAb 205
3. Immunogen: antibody was raised against a peptide including acetyl-lysine 27 of histone H3
4. <https://www.encodeproject.org/antibodies/ENCAB000AQN/>