

Broad Institute - Encode3 Secondary Antibody Validation

Abcam ab70892 Lot: GR70517

Target: KDM5A

Approved name: lysine demethylase 5A

Additional names frequently found in literature: JARID1A, retinoblastoma-binding protein 2.

Function This protein is a histone demethylase that specifically demethylates K4 of histone H3. It is specific to H3 K4, and does not demethylate histone H3 K9, H3 K27, H3 K36, H3 K79 or H4 K20. It demethylates trimethylated and dimethylated but not monomethylated H3 K4.

References:

The retinoblastoma binding protein RBP2 is an H3K4 demethylase. Klose R.J., Yan Q., Tothova Z., Yamane K., Erdjument-Bromage H., Tempst P., Gilliland D.G., Zhang Y., Kaelin W.G. Jr. *Cell* **128**:889-900 (2007).

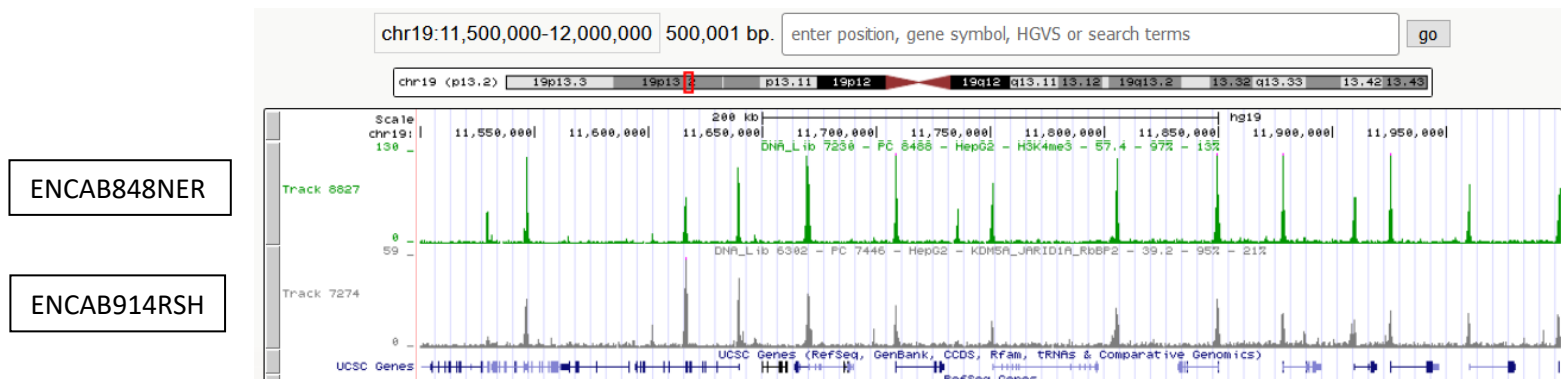
RBP2 belongs to a family of demethylases, specific for tri- and dimethylated lysine 4 on histone 3. Christensen J., Agger K., Cloos P.A.C., Pasini D., Rose S., Sennels L., Rappsilber J., Hansen K.H., Salcini A.E., Helin K. *Cell* **128**:1063-1076 (2007).

Antibody being validated:

1. Abcam ab70892 Lot: GR70517 [Rabbit, polyclonal]
2. Broad Alias: PchAb 1221
3. Immunogen: Synthetic peptide corresponding to Human KDM5A/ Jarid1A/ RBBP2 (C terminal)
4. <https://www.encodeproject.org/antibodies/ENCAB914RSH/>

This validation relies on the use of a chromatin remodeler and a functionally relevant histone modifier in HepG2 cells, which demonstrate highly similar patterns of enrichment obtained with each antibody. The first track shown used an antibody to H3K4me3 (PchAb 1306, ENCAB848NER), previously characterized to Encode standards, and the second track shown used an antibody to KDM5A (PchAb 1221, ENCAB914RSH).

Genomewide correlation 0.776



Antibodies being compared:

1. Abcam ab8580 Lot: GR190229-1 [Rabbit, polyclonal]
2. Broad Alias: PchAb 1306
3. Immunogen: Synthetic methylated peptide corresponding to residues surrounding K4 of human histone H3
4. <https://www.encodeproject.org/antibodies/ENCAB848NER/>