

# AP-2 $\alpha$ / $\beta$ (3H547): sc-70361

## BACKGROUND

AP-2 transcription factor family members include AP-2 $\alpha$ , AP-2 $\beta$  and AP-2 $\gamma$ , which specifically bind to the DNA consensus sequence CCCCAGGC and initiate transcription of selected genes. AP-2, also known as ERF-1, plays a role in regulating estrogen receptor expression. AP-2 $\beta$ , a splice variant of AP-2 $\alpha$ , inhibits AP-2 activity. Besides subscribing to the AP-2 complex, AP-2 $\alpha$ , AP-2 $\beta$  and AP-2 $\gamma$  proteins compose the OB2-1 transcription factor complex. OB2-1 specifically upregulates expression of the proto-oncogene c-ErbB-2, which is overexpressed in 25-30% of breast cancers. The gene encoding AP-2 $\alpha$  maps to human chromosome 6p24. AP-2 $\alpha$  may play an important role in the development of ectodermal-derived tissues. Deleterious mutations involving the AP-2 $\alpha$  gene are linked to microphthalmia, corneal clouding and other anterior eye chamber defects. The ubiquitously expressed AP-4 transcription factor specifically binds to the DNA consensus sequence 5'-CAGCTG-3'. AP-4 interacts with promoters for immunoglobulin- $\kappa$  gene families and simian virus 40. AP-4 may enhance the transcription of the human Huntington's disease gene. AP-4 is a helix-loop-helix protein that contains two distinctive leucine repeat elements.

## REFERENCES

- Williams, T., et al. 1988. Cloning and expression of AP-2, a cell-type-specific transcription factor that activates inducible enhancer elements. *Genes Dev.* 2: 1557-1569.
- Buettner, R., et al. 1993. An alternatively spliced mRNA from the AP-2 gene encodes a negative regulator of transcriptional activation by AP-2. *Mol. Cell. Biol.* 13: 4174-4185.
- Moser, M., et al. 1995. Cloning and characterization of a second AP-2 transcription factor: AP-2 $\beta$ . *Development* 121: 2779-2788.
- Williamson, J.A., et al. 1996. Chromosomal mapping of the human and mouse homologues of two new members of the AP-2 family of transcription factors. *Genomics* 35: 262-264.

## CHROMOSOMAL LOCATION

Genetic locus: TFAP2A (human) mapping to 6p24.3, TFAP2B (human) mapping to 6p12.3; Tfp2a (mouse) mapping to 13 A3.3, Tfp2b (mouse) mapping to 1 A3.

## SOURCE

AP-2 $\alpha$ / $\beta$  (3H547) is a mouse monoclonal antibody raised against the C-terminus of AP-2 $\alpha$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG $_1$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

AP-2 $\alpha$ / $\beta$  (3H547) is available conjugated to either phycoerythrin (sc-70361 PE) or fluorescein (sc-70361 FITC), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM.

## STORAGE

Store at 4 $^{\circ}$  C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

AP-2 $\alpha$ / $\beta$  (3H547) is recommended for detection of AP-2 $\alpha$  and AP-2 $\beta$  of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1  $\mu$ g per 1 x 10 $^6$  cells).

Molecular Weight of AP-2 $\alpha$ : 48 kDa.

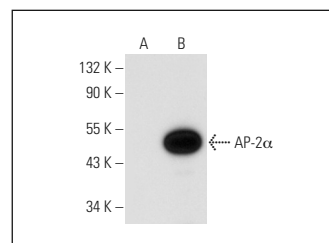
Molecular Weight of AP-2 $\beta$ : 47 kDa.

Positive Controls: AP-2 $\alpha$  (m): 293T Lysate: sc-118446.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>TM</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



AP-2 $\alpha$ / $\beta$  (3H547): sc-70361. Western blot analysis of AP-2 $\alpha$  expression in non-transfected: sc-117752 (A) and mouse AP-2 $\alpha$  transfected: sc-118446 (B) 293T whole cell lysates.

## SELECT PRODUCT CITATIONS

- Lian, W., et al. 2017. AP-2 $\alpha$  reverses vincristine-induced multidrug resistance of SGC7901 gastric cancer cells by inhibiting the Notch pathway. *Apoptosis* 22: 933-941.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## CONJUGATES

See **AP-2 $\alpha$  (3B5): sc-12726** for AP-2 $\alpha$  antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor<sup>®</sup> 488, 546, 594, 647, 680 and 790.