# SANTA CRUZ BIOTECHNOLOGY, INC.

# A20 (A-12): sc-166692



# BACKGROUND

A20 is a Cys2/Cys2 zinc finger protein that is induced by a variety of inflammatory stimuli and regulates gene expression. Specifically, A20 is induced by tumor necrosis factor (TNF) and interleukin 1 (IL-1), and acts as a negative regulator of nuclear factor  $\kappa$  B (NF $\kappa$ B) gene expression. By inhibiting NF $\kappa$ B activation, A20 plays a critical role in terminating NF $\kappa$ B responses to various stimuli. Although the C-terminal region of A20 contains seven zinc finger domains, only four of these domains are required for *in vitro* inhibition of TNF-induced NF $\kappa$ B activation. A20 also interacts with several other proteins, such as TRAF2, TRAF6 and I $\kappa$ B kinase (IKK)  $\gamma$  protein, and can thereby inhibit cell death. TXBP151, a novel A20-binding protein, may mediate the antiapoptotic activity of A20. Involved in the negative feedback regulation of signal transduction, A20 and A20-binding proteins may be useful as novel therapeutic tools in the treatment of a variety of diseases.

## REFERENCES

- De Valck, D., et al. 1999. The zinc finger protein A20 interacts with a novel anti-apoptotic protein which is cleaved by specific caspases. Oncogene 18: 4182-4190.
- 2. Beyaert, R., et al. 2000. A20 and A20-binding proteins as cellular inhibitors of nuclear factor- $\kappa$  B-dependent gene expression and apoptosis. Biochem. Pharmacol. 60: 1143-1151.
- Van Huffel, S., et al. 2001. Identification of a novel A20-binding inhibitor of nuclear factor-κB activation termed ABIN-2. J. Biol Chem. 276: 30216-30223.

# **CHROMOSOMAL LOCATION**

Genetic locus: TNFAIP3 (human) mapping to 6q23.3; Tnfaip3 (mouse) mapping to 10 A3.

## SOURCE

A20 (A-12) is a mouse monoclonal antibody raised against amino acids 1-100 of A20 of human origin.

# PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-166692 X, 200  $\mu$ g/0.1 ml.

A20 (A-12) is available conjugated to agarose (sc-166692 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166692 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166692 PE), fluorescein (sc-166692 FITC), Alexa Fluor<sup>®</sup> 488 (sc-166692 AF488), Alexa Fluor<sup>®</sup> 546 (sc-166692 AF546), Alexa Fluor<sup>®</sup> 594 (sc-166692 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-166692 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-166692 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-166692 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

### **STORAGE**

Store at 4° C, \*\*D0 NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

A20 (A-12) is recommended for detection of A20 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for A20 siRNA (h): sc-37655, A20 siRNA (m): sc-37656, A20 shRNA Plasmid (h): sc-37655-SH, A20 shRNA Plasmid (m): sc-37656-SH, A20 shRNA (h) Lentiviral Particles: sc-37655-V and A20 shRNA (m) Lentiviral Particles: sc-37656-V.

A20 (A-12) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of A20: 90 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204,  $BC_3H1$  cell lysate: sc-2299 or KNRK nuclear extract: sc-2141.

# DATA





A20 (A-12): sc-166692. Western blot analysis of A20 expression in Jurkat (A) and BC<sub>3</sub>H1 (B) whole cell lysates and NIH/3T3 (C) and KNRK (D) nuclear extracts.

A20 (A-12): sc-166692. Immunoperoxidase staining of formalin fixed, parafifin-embedded human lung tissue showing strong cytoplasmic staining of pneumocytes and weak cytoplasmic staining of macrophages (A). Immunoperoxidase staining of formalin fixed, paraffinembedded human appendix tissue showing cytoplasmic staining of glandular cells and lymphoid cells (B).

### SELECT PRODUCT CITATIONS

- Lippens, S., et al. 2011. Keratinocyte-specific ablation of the NFκB regulatory protein A20 (TNFAIP3) reveals a role in the control of epidermal homeostasis. Cell Death Differ. 18: 1845-1853.
- van Krüchten, A., et al. 2018. *Staphylococcus aureus* triggers a shift from influenza virus-induced apoptosis to necrotic cell death. FASEB J. 32: 2779-2793.
- Polykratis, A., et al. 2019. A20 prevents inflammasome-dependent arthritis by inhibiting macrophage necroptosis through its ZnF7 ubiquitin-binding domain. Nat. Cell Biol. 21: 731-742.
- 4. Schürmann, M., et al. 2020. Stem cell-induced inflammation in cholesteatoma is inhibited by the TLR4 antagonist LPS-RS. Cells 9: 199.

### **RESEARCH USE**

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