

# 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 anti-apoptotic 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* 29: 4182-4190.
- 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.* 8: 1143-1151.

## 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  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166692 HRP), 200  $\mu$ g/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  $\mu$ g/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  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## STORAGE

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

## APPLICATIONS

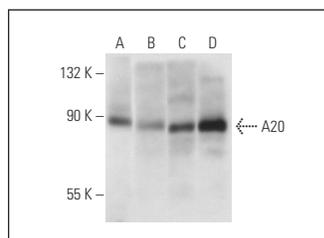
A20 (A-12) is recommended for detection of A20 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution 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.

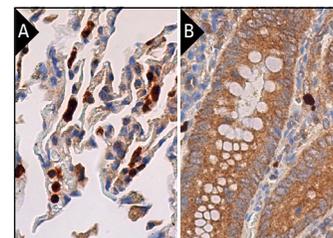
A20 (A-12) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of A20: 90 kDa.

## 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, paraffin-embedded human lung tissue showing strong cytoplasmic staining of pneumocytes and weak cytoplasmic staining of macrophages (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded 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 NF $\kappa$ B regulatory protein A20 (TNFAIP3) reveals a role in the control of epidermal homeostasis. *Cell Death Differ.* 18: 1845-1853.
- Lafont, E., et al. 2017. The linear ubiquitin chain assembly complex regulates TRAIL-induced gene activation and cell death. *EMBO J.* 36: 1147-1166.
- 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.
- 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.