

A20

Cat. # DB209

Background: A20 is Ubiquitin-editing enzyme that contains both ubiquitin ligase and deubiquitinase activities. Involved in immune and inflammatory responses signaled by cytokines, such as TNF-alpha and IL-1 beta, or pathogens via Toll-like receptors (TLRs) through terminating NF-kappa-B activity. Essential component of a ubiquitin-editing protein complex, comprising also RNF11, ITCH and TAX1BP1, that ensures the transient nature of inflammatory signaling pathways. In cooperation with TAX1BP1 promotes disassembly of E2-E3 ubiquitin protein ligase complexes in IL-1R and TNFR-1 pathways; affected are at least E3 ligases TRAF6, TRAF2 and BIRC2, and E2 ubiquitin-conjugating enzymes UBE2N and UBE2D3. In cooperation with TAX1BP1 promotes ubiquitination of UBE2N and proteasomal degradation of UBE2N and UBE2D3. Upon TNF stimulation, deubiquitinates 'Lys-63'-polyubiquitin chains on RIPK1 and catalyzes the formation of 'Lys-48'-polyubiquitin chains. This leads to RIPK1 proteasomal degradation and consequently termination of the TNF- or LPS-mediated activation of NF-kappa-B. Deubiquitinates TRAF6 probably acting on 'Lys-63'-linked polyubiquitin. Upon T-cell receptor (TCR)-mediated T-cell activation, deubiquitinates 'Lys-63'-polyubiquitin chains on MALT1 thereby mediating disassociation of the CBM (CARD11:BCL10:MALT1) and IKK complexes and preventing sustained IKK activation. Deubiquitinates NEMO/IKBK; the function is facilitated by TNIP1 and leads to inhibition of NF-kappa-B activation.

Alternate Names: TNF alpha-induced protein 3, OTU domain-containing protein 7C, Putative DNA-binding protein A20, Zinc finger protein A20

Product Information:

Molecular Weight:	100 kDa
Quantity:	25 µg
Physical State:	Liquid
Purity:	>90%
Source:	Human Recombinant
Tag:	N-terminal His6-SUMO
Activity:	This enzyme cleaves K11-, K48- and K63- linked ubiquitin chains <i>in vitro</i>
Storage:	Store at -80°C, avoiding repeated freeze-thaw cycles.

References

- 1) Song, HY et al. *The tumor necrosis factor-inducible zinc finger protein A20 interacts with TRAF1/TRAF2 and inhibits NF-kappaB activation.* [Proc Natl Acad Sci U S A](#). 1996 Jun 25;93(13):6721-5.
- 2) De Valck D et al. A20 inhibits NF-kappaB activation independently of binding to 14-3-3 proteins. [Biochem Biophys Res Commun](#). 1997 Sep 18;238(2):590-4.
- 3) Evans, PC et al. *Zinc-finger protein A20, a regulator of inflammation and cell survival, has de-ubiquitinating activity.* [Biochem J](#). 2004 Mar 15;378(Pt 3):727-34.

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