

**FITC CONJUGATED MONOCLONAL ANTIBODY TO  
MOUSE TUMOR NECROSIS FACTOR ALPHA (TNF- $\alpha$ )  
clone V1q**



**Catalog no** HM1021F (lot number and expiry date are indicated on the label)

**Description** The monoclonal antibody V1q recognizes mouse tumor necrosis factor alpha (TNF- $\alpha$ ). TNF- $\alpha$  is the prototype cytokine of the family of TNF-related ligands, which are based on structural and functional homologies. TNF- $\alpha$  is synthesized as type II transmembrane protein. TNF- $\alpha$  can be recognized by two different membrane receptors, namely TNF-R1 and TNF-R2. TNF- $\alpha$  is present in a membrane-bound (tmTNF) as well as soluble form (sTNF). The membrane-bound form of TNF- $\alpha$  is recognized by both TNF receptors with high affinity, whereas the soluble form is recognized more superiorly by TNF-R1. TNF- $\alpha$  is produced by many different cell types including macrophages, T lymphocytes, NK cells, neutrophils and endothelial cells. Cells differ in the expression of the two TNF-receptors and sTNF versus tmTNF, respectively.

TNF- $\alpha$ , a homotrimeric 17 kDa protein, is a potent mediator of inflammatory and metabolic functions. TNF- $\alpha$  was originally detected as a highly cytotoxic cytokine for tumor cells, it causes tumor necrosis *in vivo* and shows cytolytic activity against tumor cells *in vitro*. Furthermore, TNF- $\alpha$  has been implied as central mediator in shock induced by gram negative micro-organisms. TNF- $\alpha$  induces on its turn the production of many other cytokines. Furthermore, TNF- $\alpha$  has been found in inflammatory foci such as synovial effusions in rheumatoid arthritis, systemic circulation in septic shock, parasitemia and rejection of renal transplants. The monoclonal antibody V1q recognizes both natural and recombinant TNF- $\alpha$  and shows neutralizing activity.

**Aliases** TNF, TNF-SF2, DIF, cachectin, TNF- $\alpha$ , tumor necrosis factor ligand superfamily member 2

**Immunogen** Cytotoxin purified from conA induced T cell clone 29

**Species** Rat IgD

<b>Cross reactivity</b>	<b>Cross reactant</b>	<b>Reactivity</b>
	Chinese hamster TNF- $\alpha$	Yes
Receptor-bound mouse TNF- $\alpha$	No	

**Formulation** 1 ml (100  $\mu$ g/ml) 0.2  $\mu$ m filtered FITC conjugated antibody solution in PBS, containing 1% bovine serum albumin.

<b>Application</b>	F	FC <sup>2,4</sup>	FS <sup>1,3,5</sup>	IA	IF	IP	P	W
Yes		•	•					
No								
N.D.	•			•	•	•	•	•

*N.D.*= Not Determined; *F* = Frozen sections; *FC* = Flow Cytometry; *FS* = Functional Studies; *IA* = Immuno Assays; *IF* = Immuno Fluorescence; *IP* = Immuno Precipitation; *P* = Paraffin sections; *W* = Western blot

**Application notes** FC: Antibody V1q stains the extracellular domain of mouse TNF- $\alpha$ . The CHO cells were fixed in PBA containing 0.2 % formaldehyde before staining. As positive control mTNF- $\alpha$  transfected cells were used. (Ref.2)  
FS: Antibody V1q functions as a neutralizing antibody. The antibody was functionally tested by neutralization of the cytopathic effect of cytotoxin in the L929 TNF bioassay. The biological activity of the antibody can be defined as the concentration of V1q required to neutralize 100 U/ml of TNF/cytotoxin. (Ref.1)

- References**
- Echtenacher, B et al; Requirement of endogenous tumor necrosis factor/cachectin for recovery from experimental peritonitis. *J Immunol* 1990, 145: 3762
  - Gerspach, J et al; Detection of membrane-bound tumor necrosis Factor (TNF): an analysis of TNF-specific reagents. *Microsc Res Tech* 2000, 50: 243
  - Demjen, D et al; Neutralization of CD95 ligand promotes regeneration and functional recovery after spinal cord injury. *Nat Med* 2004, 10: 389
  - Rajashkhar, G et al; Divergent and convergent effects on gene expression and function in acute versus chronic endothelial activation. *Physiol Genomics* 2007, 31: 104
  - Sangaletti, S et al; Oncogene-driven intrinsic inflammation induces leukocyte production of tumor necrosis factor that critically contributes to mammary carcinogenesis. *Cancer Res* 2010, 70:

<b>Use</b>	For flow cytometry, dilutions to be used depend on detection system applied. It is recommended that users test the reagent and determine their own optimal dilutions. The typical starting working dilution is 1:50. For functional studies, <i>in vitro</i> dilutions have to be optimized in user's experimental setting.
<b>Positive control</b>	Monocytes/macrophages
<b>Storage and stability</b>	Product should be stored at 4°C. Under recommended storage conditions, product is stable for at least one year. The exact expiry date is indicated on the label.
<b>Precautions</b>	For research use only. Not for use in or on humans or animals or for diagnostics. It is the responsibility of the user to comply with all local/state and federal rules in the use of this product. Hycult Biotech is not responsible for any patent infringements that might result from the use or derivation of this product.
<b>Also available</b>	HM1021      Monoclonal antibody against Mouse TNF- $\alpha$ , clone V1q HC1060      Recombinant Mouse TNF-alpha (E.coli-derived), > 5x10 <sup>4</sup> units HM2010      Monoclonal antibody against Human TNF- $\alpha$ , clone 52B83 HP8001      Polyclonal antibody against Mouse TNF- $\alpha$ ; cross-reactive with rat TNF- $\alpha$