

**CERTIFICATE OF ANALYSIS – TECHNICAL DATA SHEET**

<b>Product name</b>	TNF-RI, Mouse, clone 55R-170		
<b>Catalog number</b>	HM1097-5MG		
<b>Lot number</b>	-	<b>Expiry date</b>	-
<b>Volume</b>	-	<b>Amount</b>	5 mg
<b>Formulation</b>	0.2 µm filtered in PBS	<b>Concentration</b>	>0.5 mg/ml
<b>Host Species</b>	Armenian Hamster IgG	<b>Conjugate</b>	None
<b>Endotoxin</b>	<24 EU/mg	<b>Purification</b>	Affinity
<b>Storage</b>	4°C		

**Application notes**

	IHC-F	IHC-P	IF	FC	FS	IA	IP	W
Reference #				5	1-4,6,7		1	
Yes				•	•	•	•	
No								
N.D.	•	•	•					•

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

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.

- FS: The monoclonal antibody 55R-170 is an antagonistic antibody useful for blocking of TNF-RI both *in vitro* and *in vivo*.
- FS: the 55R-170 antibody is not capable of completely inhibiting the binding of labeled TNF. Theoretically it could be that the lack of endogenous TNF stimulation turns the TNFR1 antagonist HM1097 55R-170, into a partial agonist (Ref. 7)
- IA: Antibody 55R-170 can be used as a detection antibody.

**General Information**

**Description** The monoclonal antibody 55R-170 recognizes the extracellular part of mouse Tumor Necrosis Factor Receptor superfamily member 1A (TNF-RI), also known as CD120a or p55. TNF-RI belongs to the large TNF receptor family, among which TNF-RII (TNF-R p75-80), lymphotoxin-beta receptor (LTbetaR) and the Herpes virus entry mediator (HVEM). Ligands for these receptors belong to the Tumor Necrosis Factor (TNF) superfamily of cytokines, which activate signaling pathways for cell survival, death, and differentiation that orchestrate the development, organization and homeostasis of lymphoid, mammary, neuronal and ectodermal tissues.

TNF-RI contains a characteristic structural cassette termed death domain in its sequence that is conserved within a distinct subset of other TNF-R family members, such as CD95, DR3, DR4, and DR5. This death domain, was characterized as being essential for induction of apoptosis *in vitro* and has been structurally conserved within these TNF-R superfamily members. Deletion of the death domain of the TNF-RI results in a non-functional receptor, indicating that the death domain is required for the signal transduction of the physiological functions of TNF-RI *in vivo*.

TNF-RI is a 55 kD type I transmembrane protein and is expressed on a variety of cell types at low levels. It is considered to play a prominent role in cell stimulation by TNF-alpha. Induction of cytotoxicity and other functions are mediated largely via TNF-RI. TNF-RI is present as soluble form in body fluids (for instance plasma and CSF). This extracellular TNF-RI is generated by two mechanisms, namely proteolytic cleavage of TNF-RI ectodomains and release of full-length TNF-RI in the membranes of exosome-like vesicles. TNF-RI and TNF-RII both interact with the homomeric forms of LTbeta or TNF. However, TNF-RI functions as the high affinity receptor for soluble TNF (sTNF). TNF-RI has been shown to be involved in a wide variety of inflammatory diseases, among which neurodegenerative diseases (Parkinson's and Alzheimer's disease), multiple sclerosis, asthma, atherosclerosis, rheumatology.

The monoclonal antibody 55R-170 also recognizes the soluble receptor.

**Immunogen** Purified soluble extracellular domain of mouse TNF-RI.

**Aliases** TNFR type I, CD120a, TNF-RI, TNF-R55, TNFRp55, p55-R, TNF receptor alpha chain

**Gene** Gene name: Tnfrsf1a, Tnfr-1, Tnfr1

- References**
- Sheehan, K et al; Monoclonal antibodies specific for murine p55 and p75 tumor necrosis factor receptors: identification of a novel *in vivo* role for p75. *J Exp Med* 1995, 181: 607
  - Pinckard, J et al; Ligand-induced formation of p55 and p75 tumor necrosis factor receptor heterocomplexes on intact cells. *J Biol Chem* 1997, 272: 10784

3. Ji, H et al; Critical roles for interleukin 1 and tumor necrosis factor alpha in antibody-induced arthritis. *J Exp Med* 2002, *196*: 77
4. Droin, N et al; Egr Family Members Regulate Nonlymphoid Expression of Fas Ligand, TRAIL, and Tumor Necrosis Factor during Immune Responses. *Mol Cell Biol* 2003, *23*:7638
5. Lee, S et al; Inhibition of TCR-induced CD8 T cell death by IL-12: regulation of Fas ligand and cellular FLIP expression and caspase activation by IL-12. *J Immunol* 2003, *170*: 2456
6. Williams, S et al; Antibody-Mediated Inhibition of TNFR1 Attenuates Disease in a Mouse Model of Multiple Sclerosis. *PLoS ONE* 2014, *9*: e90117
7. Gouweleeuw, L et al; Effects of selective TNFR1 inhibition or TNFR2 stimulation, compared to non-selective TNF inhibition, on (neuro)inflammation and behavior after myocardial infarction in male mice. *Brain Beh and Immun* 2021, *96*: 156

**Storage&stability** Product should be stored at 4°C. Under recommended storage conditions, product is stable for at least one year.

**Precautions** 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.

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We hereby certify that the above-stated information is correct and that this product has been successfully tested by the Quality Control Department. This product was released for sale according to the existing specifications. This document has been produced electronically and is valid without a signature.

Approved by Manager of QC  
Brenda Teunissen

Date  
01/06/2021

Do you have any questions or comments regarding this product? Please contact us via [support@hycultbiotech.com](mailto:support@hycultbiotech.com).