

## Technical Data Sheet

## Recombinant Rat TNF

## Product Information

<b>Material Number:</b>	<b>555109</b>
<b>Size:</b>	5 µg
<b>Concentration:</b>	100 µg/ml
<b>Reactivity:</b>	QC Testing: Rat
<b>Storage Buffer:</b>	Frozen aqueous buffered solution containing BSA.

## Description

Tumor Necrosis Factor (TNF, formerly known as TNF- $\alpha$ ) is a potent multifunctional cytokine which can exert regulatory and cytotoxic effects on a wide range of normal lymphoid and non-lymphoid cells and tumor cells. Rat TNF is a 17.4 kD protein containing 157 amino acid residues. Recombinant rat TNF (Cat. No. 555109) is supplied as a frozen liquid comprised of 0.22 µm sterile-filtered aqueous buffered solution, containing bovine serum albumin, with no preservatives. Recombinant rat TNF is  $\geq 95\%$  pure as determined by SDS-PAGE analysis, and an absorbance assay based on the Beers-Lambert Law. The endotoxin level is  $\leq 0.1$  ng per µg of TNF, as measured in a chromogenic LAL assay.

## Preparation and Storage

Store product at  $-80^{\circ}\text{C}$  prior to use or for long term storage of stock solutions.  
Rapidly thaw and quick-spin product prior to use.  
Avoid multiple freeze-thaws of product.  
This preparation contains no preservatives, thus it should be handled under aseptic conditions.

## Application Notes

## Application

ELISA Standard	Routinely Tested
Bioassay	Tested During Development

## Recommended Assay Procedure:

Upon initial thawing, recombinant rat TNF (Cat. No. 555109) should be aliquoted into polypropylene microtubes and frozen at  $-80^{\circ}\text{C}$  for future use. Alternatively, the product can be diluted in sterile neutral buffer containing not less than 0.5 - 10 mg/mL carrier protein, such as human or bovine albumin, aliquoted and stored at  $-80^{\circ}\text{C}$ . For *in vitro* biological assay use, carrier-protein concentrations of 0.5 - 1 mg/mL are recommended. For use as an ELISA standard, carrier-protein concentrations of 5 - 10 mg/mL are recommended. Failure to add carrier protein or store at indicated temperatures may result in a loss of activity. The product should not be diluted to less than 10 µg/mL for long term storage. Carrier proteins should be pre-screened for possible effects in each investigator's experimental system. Carrier proteins may have an undesired influence on experimental results due to toxicity, high endotoxin levels or possible blocking activity.

**ELISA Standard:** Recombinant rat TNF (Cat. No. 555109) can be useful as a quantitative standard for measuring rat TNF protein levels using sandwich ELISA with the purified TN3-19.12 antibody (Cat. No. 557516) as a capture antibody and biotinylated 516D1A1 antibody (Cat. No. 558415) as the detection antibody. To obtain linear standard curves, investigators may want to consider using doubling dilutions of recombinant rat TNF from 10 - 0.1 ng/mL to be included in each ELISA plate. For measuring rat TNF in serum or plasma, investigators are highly encouraged to use the BD OptEIA™ Rat TNF ELISA Set (Cat. No. 558535) or the BD OptEIA™ Rat TNF ELISA Kit (Cat. No. 560479).

**Bioassay:** Investigators are advised that the Bioassay application is not routinely tested for this material and are highly encouraged to both titrate this material and include appropriate controls in relevant experiments. An activity range of 0.25 - 5.0 x 10<sup>9</sup> units/mg, encompassing an ED50 = 2 - 40 pg/mL, has previously been reported using L929 as indicator cells in an MTT/actinomycin D cytotoxicity assay, with a unit defined as the amount of material needed to stimulate a half-maximal response at cytokine saturation.

## Suggested Companion Products

Catalog Number	Name	Size	Clone
557516	Purified Hamster Anti-Mouse/Rat TNF	0.5 mg	TN3-19.12
558535	Rat TNF ELISA Set	20 plates	(none)
560479	Rat TNF ELISA Kit	2 plates	(none)
558415	Biotin Human anti-Mouse/Rat TNF	0.5 mg	516D1A1
554066	Streptavidin HRP	1.0 ml	(none)
555214	TMB Substrate Reagent Set	each	(none)

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## Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
3. Please refer to [www.bdbiosciences.com/pharming/en/protocols](http://www.bdbiosciences.com/pharming/en/protocols) for technical protocols.

## References

Hogan MM, Vogel SN. Production of tumor necrosis factor by rIFN-gamma-primed C3H/HeJ (Lpsd) macrophages requires the presence of lipid A-associated proteins. *J Immunol.* 1988; 141(12):4196-4202. (Methodology)

Jaattela, M.. Biologic activities and mechanisms of action of tumor necrosis factor- $\alpha$ /cachectin. *Lab Invest.* 1991; 64:724-742. (Biology)

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