

Recombinant Human Tumor Necrosis Factor- α (TNF- α)

Catalog Number PHC3015 (10 μ g), PHC3016 (50 μ g), PHC3011 (100 μ g), PHC3013 (1 mg), PHC3019 (20 mg)

Pub. No. MAN0003622 Rev. A.0

Product specifications

Lot number	See product label.
Molecular weight	17.5 kDa
Purity	>95% as determined by SDS PAGE analysis.
Amino acid sequence	VRSSSRTPSD KPVAHVVANP QAEGQLQWLN RRANALLANG VELRDNQLVW PSEGLYLIYS QVLFKGGQCP STHVLLTHTI SRIAVSYQTK VNLLSAIKSP CQRETPEGAE AKPWYEPIYL GGVFQLEKGD RLSAEINRPD YLDFAESGQV YFGIIL
Biological activity	ED ₅₀ <0.050 ng/mL, determined by the dose dependent cytotoxic effect on L929 cells in the presence of actinomycin D. Determine the optimal concentration for each specific application using an initial dose response assay.
Formulation	Lyophilized, carrier free.
Sterility	Filtered before lyophilization through a 0.22 micron sterile filter.
Endotoxin	<0.1 ng/ μ g
Production	Produced in <i>E. coli</i> and purified via sequential chromatography .
Reconstitution recommendation	Centrifuge the vial briefly, before opening to bring the contents to the bottom. Reconstitute the lyophilized protein in sterile, distilled water to a concentration of 0.1–1.0 mg/mL. Apportion the reconstituted protein into working aliquots and store at $\leq -20^{\circ}\text{C}$. Make any further dilutions of the reconstituted protein in low endotoxin medium or a buffered solution containing a carrier protein such as heat inactivated FCS or tissue culture grade BSA.
Suggested working dilutions	The optimal concentration should be determined for each specific application.
Storage	Store the lyophilized protein at $2-8^{\circ}\text{C}$, preferably desiccated. Upon reconstitution, apportion into working aliquots and store at $\leq -20^{\circ}\text{C}$. Avoid repeated freeze-thaw cycles.
Expiration date	Expires one year from date of receipt when stored as instructed.
References	<p>Aggarwal, BB, Kohr, WJ, Hass, PE, Moffat, B, Spencer, SA, Henzel, WJ, Bringman, TS, Nedwin, GE, Goeddel, DV, and Harkins, RN. (1984) Human tumor necrosis factor production, purification and characterization. J. Biol. Chem. 260:2345-2354.</p> <p>Chew, LJ, Pan, HG, Yu, JY, Tian, S, Huang, WQ, Zhang, JY, Pang, S, and Li, LY. (2002) A novel secreted splice variant of vascular endothelial cell growth inhibitor. FASEB J. 16:742-744.</p> <p>Cignetti, A, Bryant, E, Allione, B, Vitale, A, Foa, R, and Cheever, MA. (1999) CD34(+) acute myeloid and lymphoid leukemic blasts can be induced to differentiate into dendritic cells. Blood 94(6):2048-2055.</p> <p>Kim, SG, Soltysiak, KA, Gao, ZG, Chang, TS, Chung, EJ, and Jacobson, KA. (2003) Tumor necrosis factor alpha-induced apoptosis in astrocytes is prevented by the activation of P2Y(6), but not P2Y(4) nucleotide receptors. Biochem. Pharmacol. 65(6):923-931.</p> <p>Kim, SG, Gao, ZG, Soltysiak, KA, Chang, TS, Brodie, C and Jacobson, KA. (2003) P2Y6 nucleotide receptor activates PKC to protect 1321N1 astrocytoma cells against tumor necrosis factor-induced apoptosis. Cell. Mol. Neurobiol. 23(3):401-418.</p> <p>Kruszynski, M, Shealy, DJ, Leone, AO, and Heavner, GA. (1999) Identification of TNF-alpha binding peptides from a D-amino acid hexapeptide library that specifically inhibit TNF-alpha binding to recombinant p55 receptor. Cytokine 11(1):37-44.</p> <p>Mazanet, MM, Neote, K, and Hughs, CCW. (2000) Expression of IFN-inducible T cell chemoattractant by human endothelial cells is cyclosporin A-resistant and promotes T cells adhesion: implications for cyclosporine A-resistant immune inflammation. J. Immunol. 164:5383-5388.</p>

References continued	<p>Means, TK, Jones, BW, Schromm, AB, Shurtleff, BA, Smith, JA, Keane, J, Golenbock, DT, Vogel, SN, and Fenton, MJ. (2001) Differential effects of a toll-like receptor antagonist on Mycobacterium tuberculosis-induced macrophage responses. J. Immunol. 166 6):4074-4082.</p> <p>Nixon, CS, Steffen, MJ, and Ebersole, JL. (2000) Cytokine responses to Treponema pectinovorum and Treponema denticola in human gingival fibroblasts. Infect and Immun. 68(9):5284-5292.</p> <p>Ottonello, L, Morone, P, Dapino, P, and Dallegri, F. (1996) Monoclonal Lym-1 antibody-dependent lysis of B-lymphoblastoid tumor targets by human complement and cytokine-exposed mononuclear and neutrophilic polymorphonuclear leukocytes. Blood 87(12):5171-5178.</p> <p>Pati, S, Pelser, CB, Dufraigne, J, Bryant, JL, Reitz, MS Jr, and Weichold, FF. (2002) Antitumorigenic effects of HIV protease inhibitor ritonavir: inhibition of Kaposi sarcoma. Blood 99 (10):3771-3779.</p> <p>Qiu, D, Zhao, G, Aoki, Y, Shi, L, Uyei, A, Nazarian, S, Ng, JC, and Kao, PN. (1999) Immunosuppressant PG490 (triptolide) inhibits T-cell interleukin-2 expression at the level of purine-box/nuclear factor of activated T-cells and NF-kappaB transcriptional activation. J. Biol. Chem. 274(19):13443-13450.</p> <p>Rajan, R, Vanderslice, R, Kapur, S, Lynch, J, Thompson, R, and Djakiew, D. (1996) Epidermal growth factor (EGF) promotes chemomigration of a human prostate tumor cell line, and EGF immunoreactive proteins are present at sites of metastasis in the stroma of lymph nodes and medullary bone. Prostate 28(1):1-9.</p> <p>Rodriguez, P, Heyman, M, Candalh, C, Blaton, MA, and Bouchaud, C. (1995) Tumour necrosis factor-alpha induces morphological and functional alterations of intestinal HT29 cl.19A cell monolayers. Cytokine 7(5):441-448.</p> <p>Sciaky, D, Brazer, W, Center, DM, Cruikshank, WW, and Smith, TJ. (2000) Cultured human fibroblasts express constitutive IL-16 mRNA: Cytokine induction of active IL-16 protein synthesis through a caspase-3-dependent mechanism. J. Immunol. 164 (7):3806-3814.</p> <p>Shields, DC, Avgeropoulos, NG, Banik, NL, and Tyor, WR. (2000) Acute multiple sclerosis characterized by extensive mononuclear phagocyte infiltration. Neurochem. Res. 25(11):1517-1520.</p> <p>Siegel, SA, Shealy, DJ, Nakada, MT, Le, J, Woulfe, DS, Probert, L, Kollias, G, Ghayeb, J, Vilcek, J, and Daddona, PE. (1995) The mouse/human chimeric monoclonal antibody cA2 neutralizes TNF in vitro and protects transgenic mice from cachexia and TNF lethality in vivo. Cytokine 7(1):15-25.</p> <p>Wang, HS, Cao, HJ, Winn, VD, Rezanka, LJ, Frobert, Y, Evans, CH, Sciaky, D, Young, DA, and Smith, TJ. (1996) Leukoregulin induction of prostaglandin-endoperoxide H synthase-2 in human orbital fibroblasts. An in vitro model for connective tissue inflammation. J. Biol. Chem. 271(37):22718-22728.</p> <p>Yu, Y, Hagihara, M, Ando, K, Gansuud, B, Matsuzawa, H, Tsuchiya, T, Ueda, Y, Inoue, H, Hotta, T, and Kato, S. (2001) Enhancement of human cord blood CD34(+) cell-derived NK cell cytotoxicity by dendritic cells. J. Immunol. 166(3):1590-1600.</p>
-----------------------------	--

Limited product warranty

Life Technologies Corporation and/or its affiliate(s) warrant their products as set forth in the Life Technologies' General Terms and Conditions of Sale at www.thermofisher.com/us/en/home/global/terms-and-conditions.html. If you have any questions, please contact Life Technologies at www.thermofisher.com/support.

Explanation of Symbols

Symbol	Description	Symbol	Description	Symbol	Description
	Manufacturer		Catalog number		Batch code
	Use by		Temperature limitation		
	Consult instructions for use		Caution, consult accompanying documents		



Life Technologies Corporation | 5781 Van Allen Way | Carlsbad, CA 92008

For descriptions of symbols on product labels or product documents, go to thermofisher.com/symbols-definition.

The information in this guide is subject to change without notice.

DISCLAIMER: TO THE EXTENT ALLOWED BY LAW, THERMO FISHER SCIENTIFIC INC. AND/OR ITS AFFILIATE(S) WILL NOT BE LIABLE FOR SPECIAL, INCIDENTAL, INDIRECT, PUNITIVE, MULTIPLE, OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH OR ARISING FROM THIS DOCUMENT, INCLUDING YOUR USE OF IT.

Important Licensing Information: This product may be covered by one or more Limited Use Label Licenses. By use of this product, you accept the terms and conditions of all applicable Limited Use Label Licenses.

©2019 Thermo Fisher Scientific Inc. All rights reserved. All trademarks are the property of Thermo Fisher Scientific and its subsidiaries unless otherwise specified.

