gibco
by life technologies

Recombinant Human Interleukin 4 (IL–4)

Publication Number MAN0003621 **Revision Date** 29 April 2011

Catalog Number:	PHC0044	PHC0045	PHC0041	PHC0043
Quantity:	10 µg	25 µg	100 µg	1 mg

Lot Number:	See product label.
Molecular Weight:	14.9 kDa
Purity:	>95% as determined by SDS-PAGE analysis.
Amino Acid Sequence:	HKCDITLQEI IKTLNSLTEQ KTLCTELTVT DIFAASKNTT EKETFCRAAT VLRQFYSHHE KDTRCLGATA QQFHRHKQLI RFLKRLDRNL WGLAGLNSCP VKEANQSTLE NFLERLKTIM REKYSKCSS
Biological Activity:	ED_{50} = 0.05–0.4 ng/mL (Specific Activity: 2.0×10^7–2.5×10^6 units/mg). The biological activity is determined by measuring the dose-dependent proliferation of human TF–1 cells. A concentration range of 0.1–10.0 ng/mL is effective for most in vitro applications.
Formulation:	Lyophilized, carrier free.
Sterility:	Filtered through a 0.22 micron sterile filter.
Endotoxin:	<0.1 ng/µg
Production:	Recombinant human IL–4 is produced in *E. coli* and purified via sequential chromatography.
Reconstitution Recommendation:	We recommend that the vial be briefly centrifuged prior to opening to bring the contents to the bottom. Lyophilized human IL–4 may be reconstituted in sterile deionized H_2O to 0.1–1.0 mg/mL to regain full activity. These stock solutions should be apportioned into working aliquots and stored at ≤ –20°C. Further dilution should be made in low endotoxin medium or buffered solution with FCS or tissue culture grade BSA.
Suggested Working Dilutions:	The optimal concentration should be determined for each specific application.
Storage:	Lyophilized human IL–4 should be stored at 2°C to 8°C, preferably desiccated. Store reconstituted human IL–4 at ≤ –20°C (not in a frost-free freezer). Keep freeze-thaw cycles to a minimum.
Expiration Date:	Expires one year from date of receipt when stored as instructed.
References:	Paul, W.E. (1991) Interleukin 4: A prototypical immunoregulatory lymphokine. Blood 77:1859–1870. Chapoval, A.I., K. Tamada, and L.P. Chen (2000). In vitro growth inhibition of a broad spectrum of tumor cell lines by activated human dendritic cells. Blood 95(7):2346–2351. Francisco, J.A., K.L. Donaldson, D. Chace, C.B. Siegall, and A.F. Wahl (2000) Agonistic properties and in vivo antitumor activity of the anti-CD40 antibody SGN-14. Cancer Research 60(12):3225–3231. Gubina, E., X. Luo, E. Kwon, K. Sakamoto, Y.F. Shi, and R.A. Mufson (2001) βc cytokine receptor-induced stimulation of cAMP response element binding protein phosphorylation requires protein kinase C in myeloid cells: A novel cytokine signal transduction cascade. J. Immunol. 167(8):4303–4310. Kahlert, H., E. Grage-Griebenow, H. T. Stuwe, O. Cromwell, and H. Fiebig (2000) T cell reactivity with allergoids: Influence of the type of APC. J. Immunol. 165(4):1807–1815. Kim, D.-K., T.V. Lee, A. Catilleja, B.W. Anderson, G.E. Peoples, A.P. Kudelka, J.L. Murray, T. Sittisomwong, J.T. Wharton, J.-W. Kim, and C.G. Ioannides (1999) Folate binding protein peptide 191–199 presented on dendritic cells can stimulate CTL from ovarian and breast cancer patients. Anticancer Research 19:2907–2916. Parada, N.A., D.M. Center, H. Kornfeld, W.L. Rodriguez, J. Cook, M. Vallen, and W.W. Cruikshank (1998) Synergistic activation of CD4+ T cells by IL-16 and IL-2. J. Immunol. 160(5):2115–2120. Piccinini, G., A. Foli, G. Comolli, J. Lisziewicz, and F. Lori (2002) Complementary antiviral efficacy of hydroxyurea and protease inhibitors in human immunodeficiency virus-infected dendritic cells and lymphocytes. J. Virol.76 (5):2274–2278.

References, Continued:	Rao, R.M., D.O. Haskard, and R.C. Landis (2002) Enhanced recruitment of TH2 and CLA-Negative lymphocytes by the S128R polymorphism of E-Selectin(1). J. Immunol. 169 (10):5860–5865. Voburka, Z., V. Vetvicka, J. Vetvickova, and M. Fusek (2002) Cytokines affect procathepsin D-stimulated proliferation of breast cancer cells. Anticancer Res. 22(2A):913–919. Wagers, A.J., C.M. Waters, L.M. Stoolman, and G.S. Kansas (1998) Interleukin 12 and interleukin 4 control T cell adhesion to endothelial selectins through opposite effects on alpha1,3-fucosyltransferase VII gene expression. J. Exp. Med. 188(12):2225–2231. Wang, H.S., H.J. Cao, V.D. Winn, L.J. Rezanka, Y. Frobert, C.H. Evans, D. Sciaky, D.A. Young, and T.J. Smith (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. Yu, Y., M. Hagihara, K. Ando, B. Gansuvd, H. Matsuzawa, T. Tsuchiya, Y. Ueda, H. Inoue, T. Hotta, and S. Kato (2001) Enhancement of human cord blood CD34(+) cell-derived NK cell cytotoxicity by dendritic cells. J. Immunol. 166(3):1590–1600.

Explanation of Symbols

The symbols present on the product label are explained below:

Symbol	Description
REF	Catalog Number
RUO	Research Use Only
	Use by
	Manufacturer
[–]	Without, does not contain
	Protect from light
	Directs the user to consult instructions for use (IFU), accompanying the product.

Symbol	Description
LOT	Batch code
IVD	In vitro diagnostic medical device
	Temperature limitation
EC REP	European Community authorized representative
[+]	With, contains
⚠	Consult accompanying documents

Limited Use Label License: Research Use Only

The purchase of this product conveys to the purchaser the limited, non-transferable right to use the purchased amount of the product only to perform internal research for the sole benefit of the purchaser. No right to resell this product or any of its components is conveyed expressly, by implication, or by estoppel. This product is for internal research purposes only and is not for use in commercial applications of any kind, including, without limitation, quality control and commercial services such as reporting the results of purchaser's activities for a fee or other form of consideration. For information on obtaining additional rights, please contact outlicensing@lifetech.com or Out Licensing, Life Technologies, 5791 Van Allen Way, Carlsbad, California 92008.

For Research Use Only. Caution: Not for human or animal therapeutic or diagnostic use.

Manufactured under ISO 13485 Quality Standard

Manufacturing site: 7335 Executive Way | Frederick, MD 21704 | Toll Free in USA 800.955.6288

.

© 2011 Life Technologies Corporation. All rights reserved. The trademarks mentioned herein are the property of Life Technologies Corporation or their respective owners.

For support visit www.lifetechnologies.com/support or email techsupport@lifetech.com

www.lifetechnologies.com

life technologies™