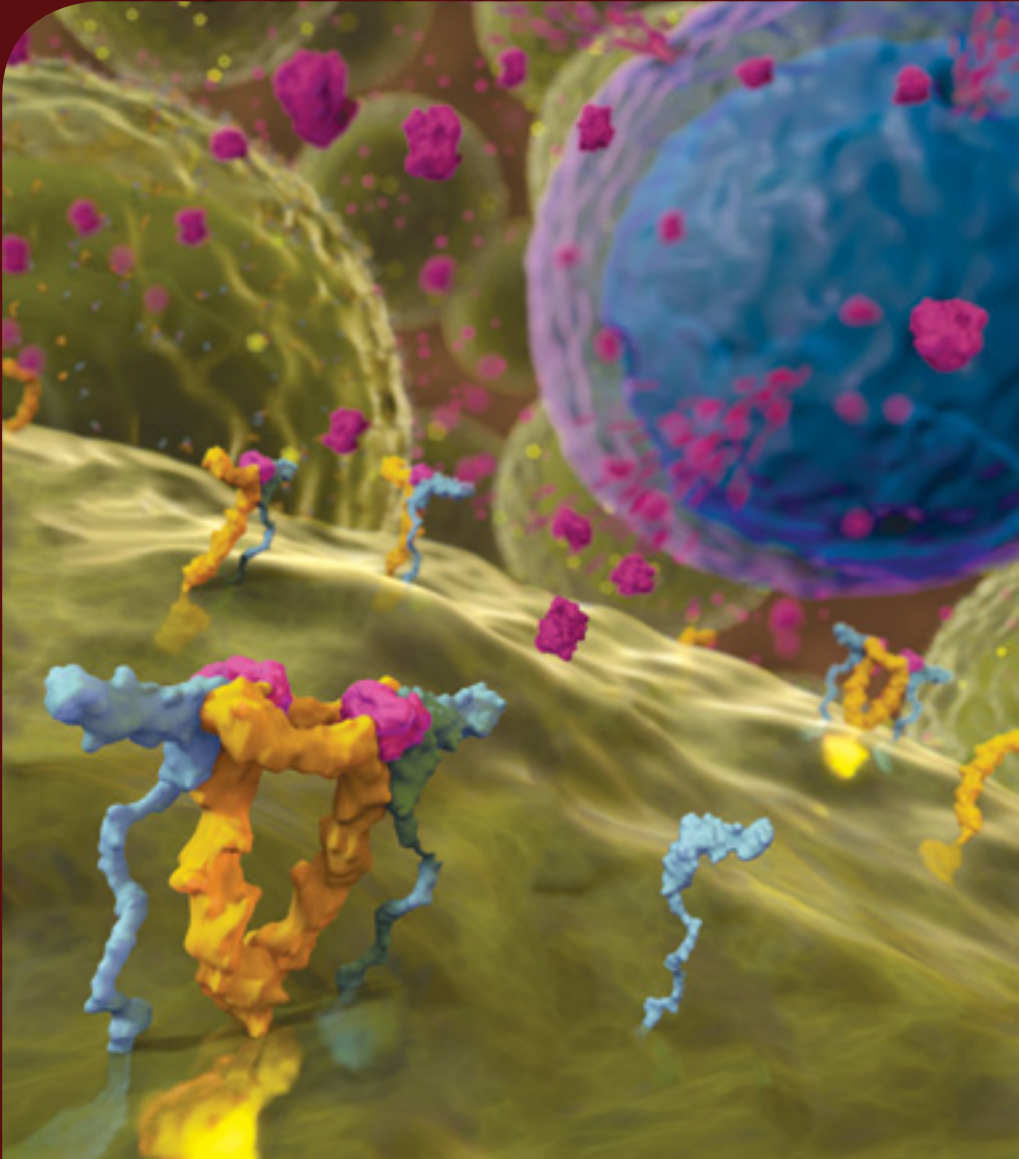




Cell Signaling
TECHNOLOGY®

Recombinant Cytokines and Growth Factors



www.cellsignal.com

UNPARALLELED CYTOKINE QUALITY, CONSISTENCY, AND DEPENDABILITY

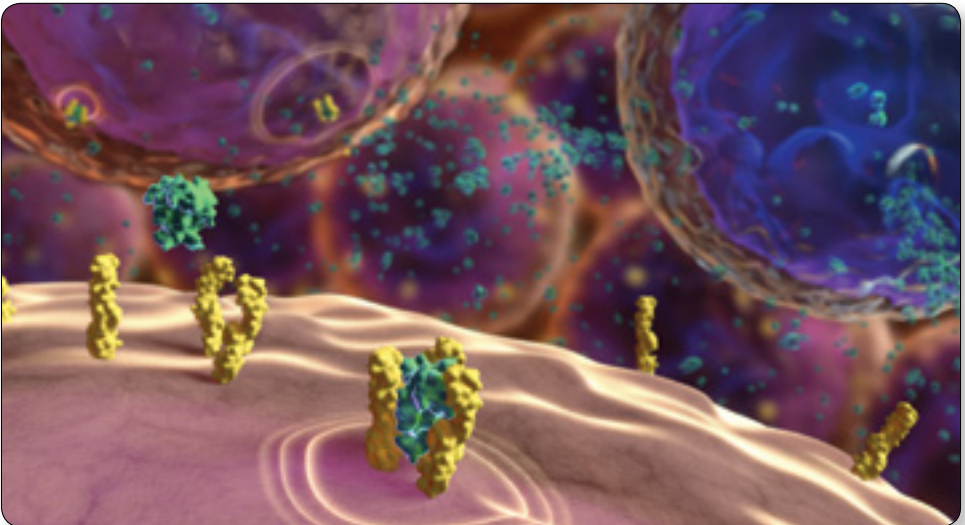
Recombinant Cytokines and Growth Factors

The world's highest quality antibody provider has now extended its expertise to Recombinant Cytokine and Growth Factor production.

Cell Signaling Technology (CST) is now offering a selection of recombinant cytokines and growth factors. These reagents are produced and bioassayed in-house, and are held to the same unparalleled quality standards as the CST™ antibodies you know and trust.

- Produced and bioassayed in-house with the highest purity and bioactivity.
- Comparison of multiple lots, stringent production specifications, and rigorous quality control ensure maximum lot-to-lot consistency.
- Products are produced in the appropriate system to optimize natural folding and conformation.
- Validation includes the use of CST antibodies to assess downstream signaling events.
- Multi-milligram quantities are always available.
- Carrier or carrier free formulation are available.

Visit our website for the most up-to-date product listing.



TNF- α (green), the prototypical member of the TNF protein superfamily, is a homotrimeric type-II membrane protein. TNF- α is produced by a variety of immune cells including T cells, B cells, NK cells and macrophages. Cellular response to TNF- α is mediated through interaction with receptors TNF-R1 and TNF-R2 (yellow) and results in activation of pathways that favor both cell survival and apoptosis depending on the cell type and biological context. Activation of pathways (including JNK, Erk (p44/42), p38 MAPK, and NF- κ B signaling) promotes the survival of cells, while TNF- α -mediated activation of caspase-8 leads to programmed cell death. The role of TNF- α in autoimmunity is underscored by blocking TNF- α action to treat rheumatoid arthritis and Crohn's disease.

Quality

- Most are greater than 98% pure as demonstrated by SDS-PAGE.
- Endotoxin levels are tested by the LAL assay and are less than 0.01 ng/μg cytokine.
- Reduced and non-reduced protein is run on SDS-PAGE.
- Bioactivity is determined by a cell-based assay for every lot.
- Several lots are tested side-by-side to ensure consistent bioactivity.
- Bioactivity and purity data is shown on each product webpage and datasheet.

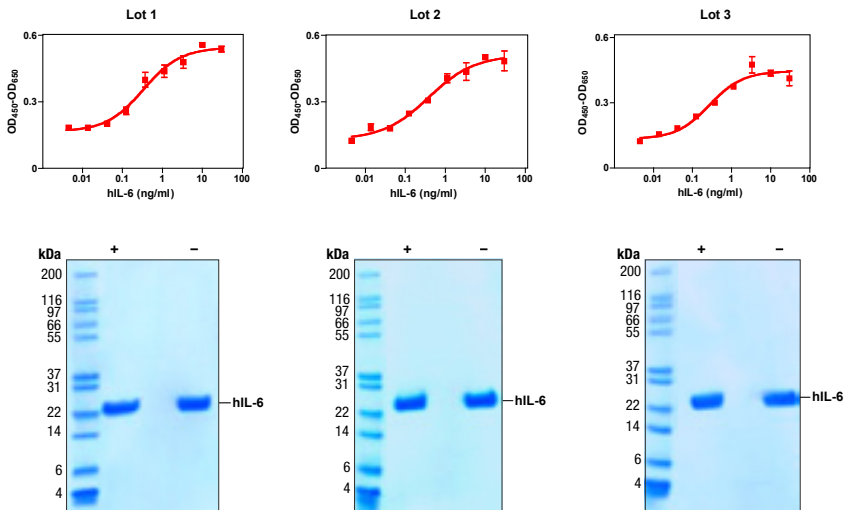
Consistency

- Strict specifications are set and enforced.
- Each lot is compared to previous lots for consistency in purity and bioactivity.
- All lots are quality assured for sterility and bioactivity.

Dependability

- Products are produced in-house and ready to ship.
- Products are available in multi-milligram sizes.
- CST sales and technical support ensure the highest quality customer service support.

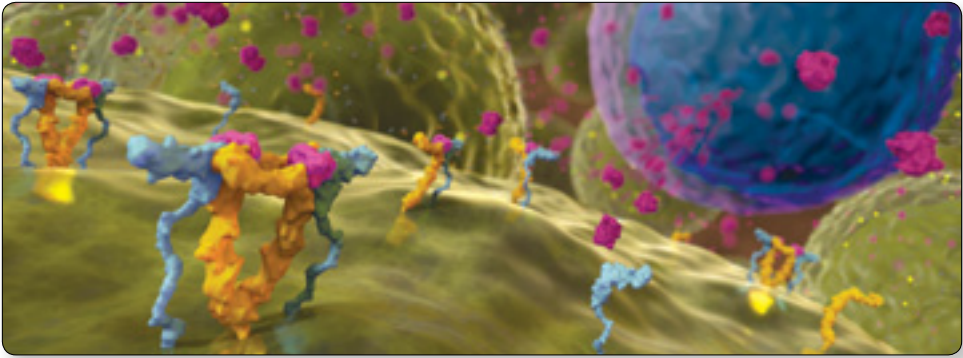
Lot-to-Lot Consistency



Comparison of purity and bioactivity of three independent lots of Human Interleukin-6 (hIL-6) #8904:

The proliferation of TF-1 cells was assessed after 48 hour treatment with increasing concentrations of hIL-6. Cells were incubated with a tetrazolium salt and the OD₄₅₀ - OD₆₅₀ was determined (upper panels).

The purity of recombinant hIL-6 was determined by SDS-PAGE using 6 μg reduced (+) and non-reduced (-) recombinant hIL-6 and staining overnight with Coomassie Blue (lower panels).

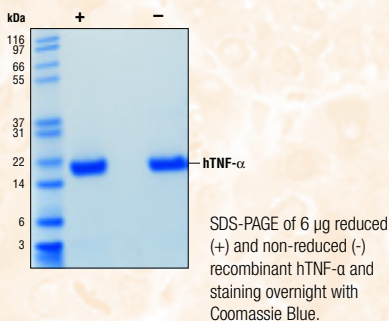


IL-6 (pink) is a potent inducer of the acute phase response and is produced by T cells, macrophages, fibroblasts, endothelial, and other cells. IL-6 induces proliferation and differentiation, and in concert with TGF- β is important for developing Th17 responses. IL-6 binds to IL-6R α (light blue) inducing gp130 (yellow) homodimerization. gp130 homodimerization triggers the Jak/Stat cascade and the SHP2/Erk MAP Kinase cascade. IL-6, through increasing expression of proangiogenic VEGF, may contribute to metastatic breast cancer.

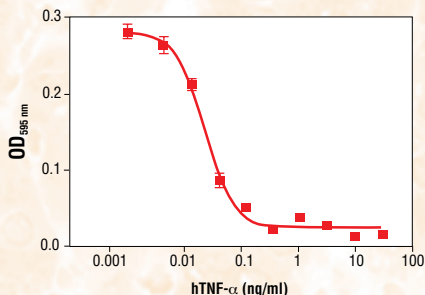
New	#5413 Human His6BAFF/TNFSF13B (hHis6 BAFF)	#8905 Human Interleukin-13 (hIL-13)	
New	#3583 Human CD40 Ligand (hCD40L)	New	#5242 Mouse Interleukin-13 (mIL-13)
New	#5717 Human Cystatin C (hCystatin C)		#8928 Human Interleukin-17A (hIL-17A)
	#8916 Human Epidermal Growth Factor (hEGF)	New	#5227 Mouse Interleukin-17A (mIL-17A)
	#5493 Human Epigen		#8906 Human Interleukin-17F (hIL-17F)
	#5494 Human Epregrulin		#8920 Human Interleukin-21 (hIL-21)
New	#5452 Human His6Fas Ligand/TNFSF6 (hHis6FasL)		#8931 Human Interleukin-22 (hIL-22)
New	#5234 Human FGF acidic (hFGF acidic)		#5224 Mouse Interleukin-22 (mIL-22)
	#8910 Human Basic Fibroblast Growth Factor (hFGF basic/FGF2)	New	#5164 Human Interleukin-28A (hIL-28A/IFN- λ 2)
New	#5414 Mouse Basic Fibroblast Growth Factor (mFGF basic/FGF2)		#5183 Human Interleukin-29 (hIL-29)
	#8924 Human Fms-related Tyrosine Kinase 3 Ligand (hFLT3L)		#8929 Human Macrophage Colony Stimulating Factor (hM-CSF)
	#8930 Human Granulocyte Colony Stimulating Factor (hG-CSF)	New	#5221 Human β -Nerve Growth Factor (h β -NGF)
	#8922 Human Granulocyte Macrophage Colony Stimulating Factor (hGM-CSF)		#5218 Human Neuregulin-1 (hNRG-1)
	#5191 Mouse Granulocyte Macrophage Colony Stimulating Factor (mGM-CSF)	New	#5371 Mouse Oncostatin M (mOSM)
	#8927 Human Interferon- α 1 (hIFN- α 1)		#8913 Human Platelet-Derived Growth Factor AA (hPDGF-AA)
	#8901 Human Interferon- γ (hIFN- γ)		#8912 Human Platelet-Derived Growth Factor BB (hPDGF-BB)
	#8917 Human Insulin-like Growth Factor I (hIGF-I)		#8925 Human Stem Cell Factor (hSCF)
New	#5236 Human Interleukin-1 α (hIL-1 α)		#5495 Human Transforming Growth Factor α (hTGF- α)
New	#5273 Mouse Interleukin-1 α (mIL-1 α)	New	#5154 Human Latent Transforming Growth Factor β 1 (hLatent TGF- β 1)
	#8900 Human Interleukin-1 β (hIL-1 β)		#8915 Human Transforming Growth Factor β 1 (hTGF- β 1)
New	#5204 Mouse Interleukin-1 β (mIL-1 β)	New	#5231 Mouse Transforming Growth Factor β 1 (mTGF- β 1)
New	#5454 Human Interleukin-2 (hIL-2) (mammalian derived)		#8406 Human Transforming Growth Factor β 2 (hTGF- β 2)
	#8907 Human Interleukin-2 (hIL-2)		#8425 Human Transforming Growth Factor β 3 (hTGF- β 3)
New	#5201 Mouse Interleukin-2 (mIL-2)		#8902 Human Tumor Necrosis Factor- α (hTNF- α)
	#8918 Human Interleukin-3 (hIL-3)		#5178 Mouse Tumor Necrosis Factor- α (mTNF- α)
	#8923 Mouse Interleukin-3 (mIL-3)		#4698 Mouse His6 Tumor Necrosis Factor- α (mHis6TNF- α)
	#8919 Human Interleukin-4 (hIL-4)		#8908 Human Vascular Endothelial Growth Factor-121 (hVEGF121)
New	#5208 Mouse Interleukin-4 (mIL-4)		#5211 Mouse Vascular Endothelial Growth Factor-164 (mVEGF164)
	#8904 Human Interleukin-6 (hIL-6)		#8065 Human Vascular Endothelial Growth Factor-165 (hVEGF165)
New	#5358 Human Interleukin-10 (hIL-10) (mammalian derived)		
	#8903 Human Interleukin-10 (hIL-10)		

Human Tumor Necrosis Factor- α (hTNF- α) #8902

Purity

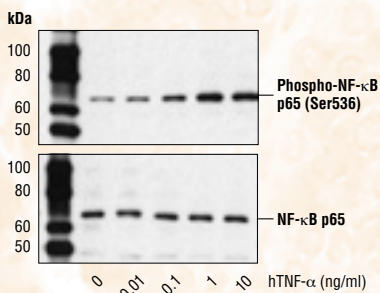


Bioactivity



The viability of L-929 cells treated with increasing amounts of hTNF- α in the presence of 2 ng/ml actinomycin D was determined. Cells were stained with crystal violet at the end of treatment and the OD₅₉₅ was determined.

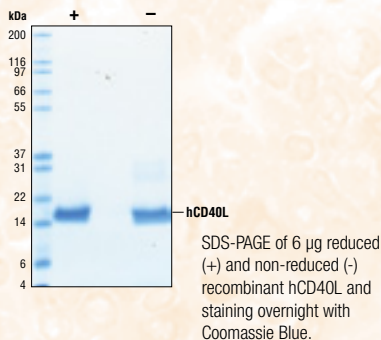
Downstream Signaling



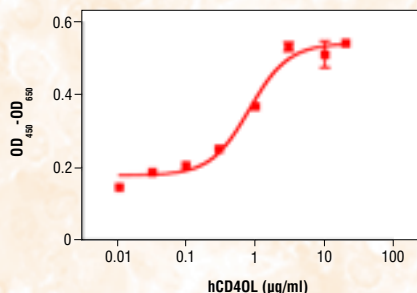
Western blot analysis of extracts from HeLa cells, untreated or treated with increasing amounts of hTNF- α for 20 minutes, using Phospho-NF- κ B p65 (Ser536) (93H1) Rabbit mAb #3033 (upper) or NF- κ B p65 Antibody #3034 (lower).

Human CD40 Ligand (hCD40L) #3583

Purity

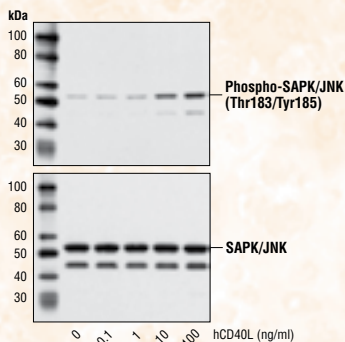


Bioactivity



The proliferation of human B cells treated with increasing concentrations of hCD40L in the presence of 20 ng/ml human IL-4 #8919 was assessed. After 96 hour treatment with hCD40L, cells were incubated with a tetrazolium salt and the OD₄₅₀ - OD₆₅₀ was determined.

Downstream Signaling



Western blot analysis of extracts from THP-1 cells, untreated or treated with increasing amounts of hCD40L for 15 minutes, using Phospho-SAPK/JNK (Thr183/Tyr185) (81E11) Rabbit mAb #4668 (upper) and SAPK/JNK (56G8) Rabbit mAb #9258 (lower).



Cell Signaling
TECHNOLOGY®

USA Headquarters

Cell Signaling Technology

Technical Support: (toll-free) 1-877-678-8324

Tel: 978-867-2300 / Fax: 978-867-2400

E-mail: info@cellsignal.com / www.cellsignal.com

In the U.S. for Bulk Volumes or Pricing Information,
contact our sales team: sales@cellsignal.com

International Subsidiaries

Cell Signaling Technology (China) Limited

Technical Support: (toll-free) 4006-473287

Tel: (86) 21-5835-6288 / Fax: (86) 21-5835-6116

E-mail: info@cst-c.com.cn / www.cst-c.com.cn

Cell Signaling Technology Japan, K.K.

Tel: 03 (5652) 0213 / Fax: 03 (3249) 1170


E-mail: info@cstj.co.jp / www.cstj.co.jp

Cell Signaling Technology Europe

Tel: +31 (0)71 568 1060 / Fax: +31 (0)71 568 1065

E-mail: info@cellsignal.eu / www.cellsignal.eu

ANTIBODIES AND RELATED REAGENTS FOR SIGNAL TRANSDUCTION RESEARCH

 Printed in the USA on recycled paper using soy inks and processed chlorine free.

© 09/2010 Cell Signaling Technology, Inc. Cell Signaling Technology® and CST™ are trademarks of Cell Signaling Technology, Inc.