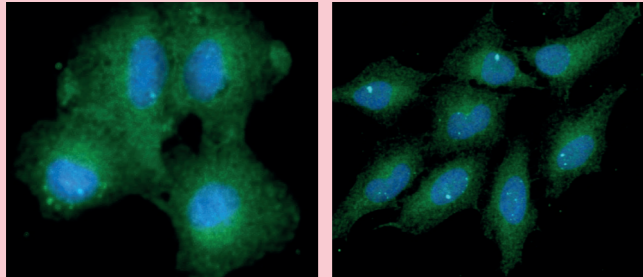
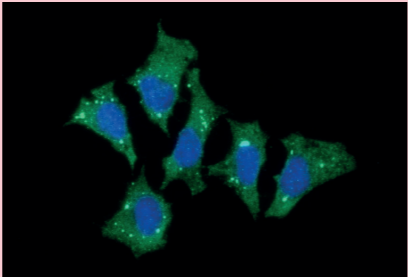
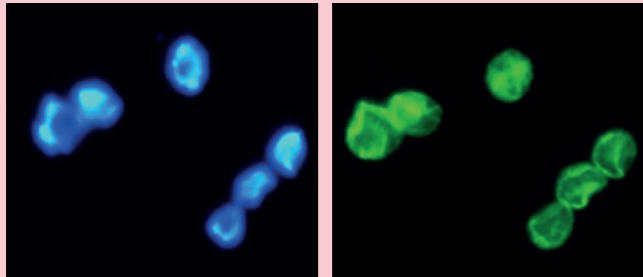
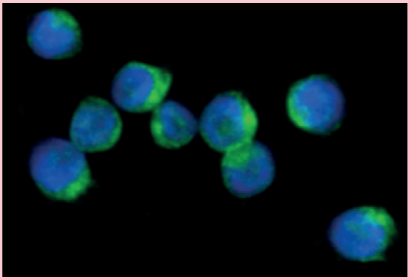
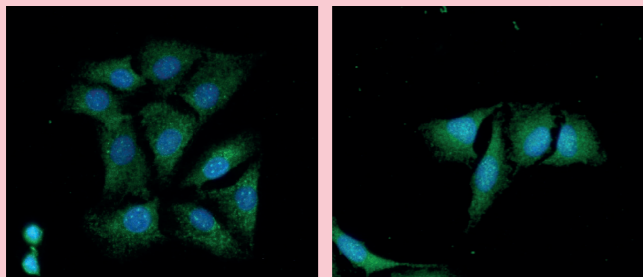


Cytokine related Antibodies

Product name	Clone No.	Applications	Isotype	Host	Cat No.
IL-6	AT1H6	ELISA, WB, FACS, ICC/IF	IgG2a, k	M	ATGA0123
	AT1F10	ELISA, WB	IgG1, k	M	ATGA0313
BEST IL-32	AT2F9	ELISA, WB, ICC/IF	IgG1, k	M	ATGA0170
BEST IL-33	4E9	ELISA, WB, FACS, ICC/IF	IgG2b, k	M	AIL0824
BEST Lymphotoxin-alpha/ TNF-beta	AT15A3	ELISA, WB, ICC/IF	IgG2b, k	M	ATGA0177
BEST MIF	4E4	ELISA, WB, ICC/IF	IgG1, k	M	AMF0608

IL-6 (AT1H6) (Cat No. ATGA0123)	Lymphotoxin-alpha/TNF-beta (AT15A3) (Cat No. ATGA0177)
	
ICC/IF analysis of IL-6 in A549(Left) and HeLa(Right) cell line, stained with DAPI(Blue) for nucleus staining and monoclonal anti-human IL-6 antibody (1:100) with goat anti-mouse IgG-alexa fluor 488 conjugate (Green).	Immunofluorescence of human HeLa cell line stained with monoclonal anti-human Lymphotoxin-alpha/TNF-beta antibody (1:500) with Texas Red (Red). Nucleus was stained by Hoechst 33342 (Blue).

IL-33 (4E9) (Cat No. AIL0824)	IL-32 (AT2F9) (Cat No. ATGA0170)
	
ICC/IF analysis of IL-33 in Jurkat cell line, stained with DAPI(Blue) for nucleus staining and monoclonal anti-human IL-33 antibody (1:100) with goat anti-mouse IgG-alexa fluor 488 conjugate (Green).	ICC/IF analysis of IL-32 in Jurkat cell line, stained with DAPI(Blue) for nucleus staining and monoclonal anti-human IL-32 antibody (1:100) with goat anti-mouse IgG-alexa fluor 488 conjugate (Green).

MIF (4E4) (Cat No. AMF0608)

ICC/IF analysis of MIF in HeLa(Left) and Balb/3T3(Right) cell line, stained with DAPI(Blue) for nucleus staining and monoclonal anti-human MIF antibody (1:100) with goat anti-mouse IgG-alexa fluor 488 conjugate (Green).

References
 Koizumi M. et al. Exposure to cigarette smoke impacts myeloid-derived regulatory cell function and exacerbates airway hyper-responsiveness. *Lab Invest.* 2014 94(12): 1312-25. [PMID 25365203] **IL-33(4E9), WB.**
 Koizumi M. et al. Positive correlations of age and parity with plasma concentration of macrophage migration inhibitory factor in Japanese black cows. *J Reprod Dev.* 2016 62(3): 257-63. [PMID 26853787] **MIF(4E4), WB.**
 Meyer-Siegler KL. et al. Macrophage migration inhibitory factor anti-thrombin III complexes are decreased in bladder cancer patient serum: Complex formation as a mechanism of inactivation. *Cancer Lett.* 2010 290(1): 49-57. [PMID 19762145] **MIF(4E4), WB.**
 Huang MC. et al. Human CD4-8- T cells are a distinctive immunoregulatory subset. *FASEB J.* 2010 24(7): 2558-66. [PMID 20154266] **MIF(4E4).**

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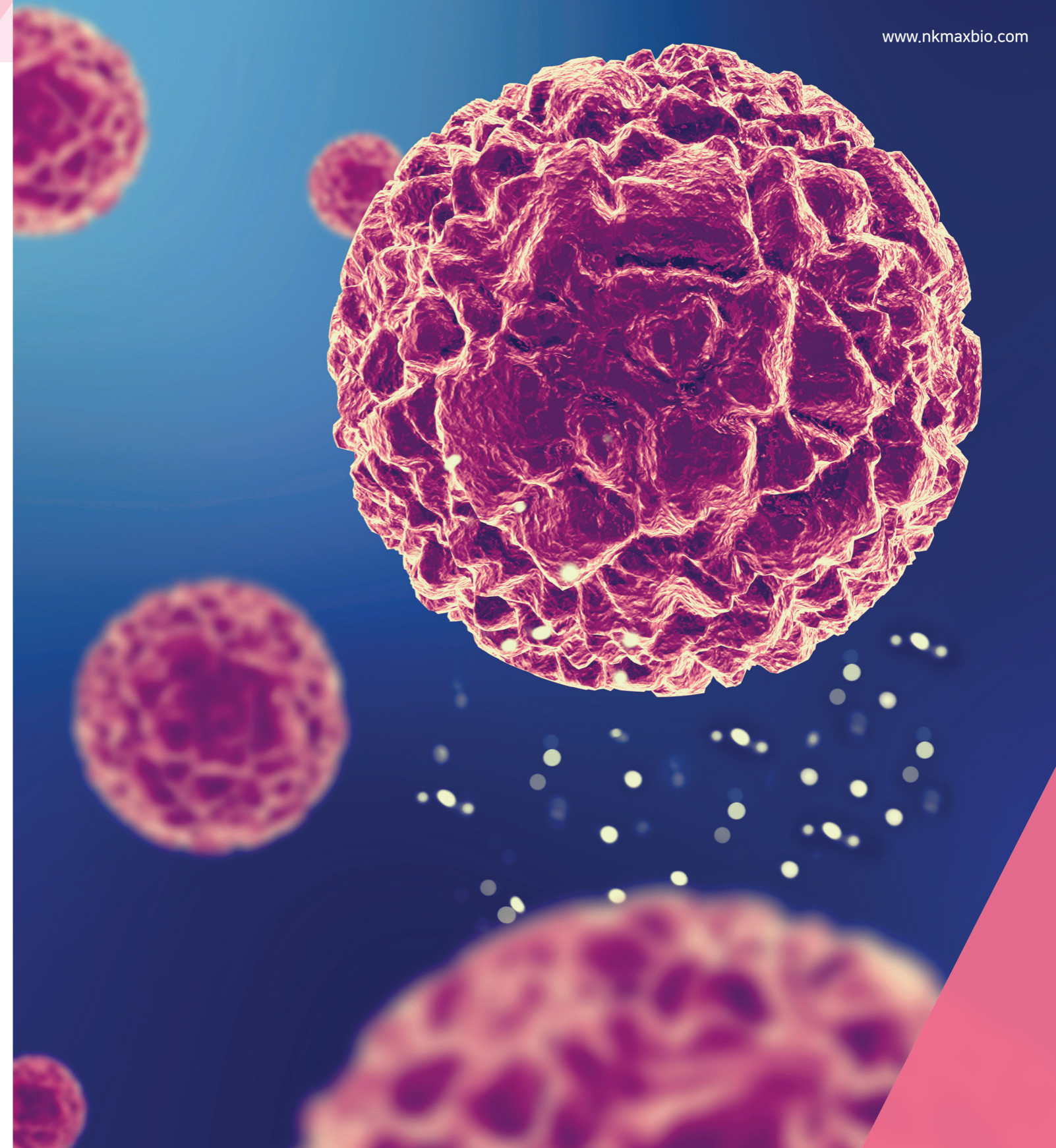
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Cytokines

Recombinant Proteins & Monoclonal Antibodies

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Interleukins & Interleukin Receptors

Interleukins (ILs) are a group of cytokines (secreted proteins and signal molecules) that were first seen to be expressed by white blood cells (leukocytes). ILs can be divided into four major groups based on distinguishing structural features. However, their amino acid sequence similarity is rather weak (typically 15–25% identity). The human genome encodes more than 50 interleukins and related proteins. The function of the immune system depends in a large part on interleukins, and rare deficiencies of a number of them have been described, all featuring autoimmune diseases or immune deficiency.

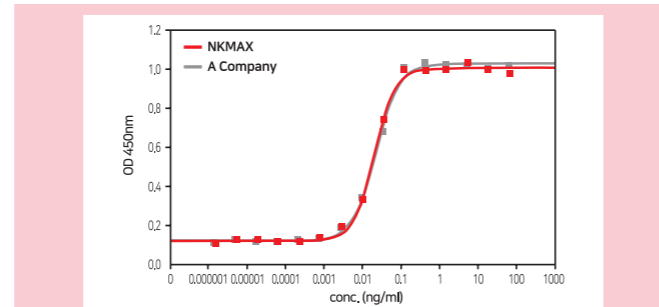
Product name	Species	Expression system	Cat No.
IL-1 alpha	H	<i>E. coli</i>	ATGP3864
	M	<i>E. coli</i>	ATGP2863(D)
	M	Baculovirus	ATGP3778
	R	<i>E. coli</i>	ATGP3192
IL-1 beta	R	<i>E. coli</i>	ATGP3846
	H	<i>E. coli</i>	ILB0701
	M	<i>E. coli</i>	ATGP3398
IL-2(C145S)	M	<i>E. coli</i>	ILB0801
	H	<i>E. coli</i>	ILB0501
IL-2(C160S)	M	<i>E. coli</i>	ATGP2987
IL-2	R	<i>E. coli</i>	ATGP3889
IL-2(C147S)	C	<i>E. coli</i>	ATGP3544
IL-2(C146S)	F	<i>E. coli</i>	ATGP3611
IL-3	H	<i>E. coli</i>	ILC0702
	H	Baculovirus	ATGP3365
	M	Baculovirus	ATGP3211
IL-4	H	<i>E. coli</i>	ILD0905
	H	<i>E. coli</i>	ATGP3421
IL-5	H	Baculovirus	ATGP3510
	H	<i>E. coli</i>	ATGP3256
	H	<i>E. coli</i>	ATGP0352
	H	Baculovirus	ATGP3278
IL-6	M	<i>E. coli</i>	ATGP2828(D)
	M	Baculovirus	ATGP3154
	R	Baculovirus	ATGP3711
	C	Baculovirus	ATGP3543
IL-7	H	Baculovirus	ATGP3442
IL-8	H	<i>E. coli</i>	ILH0501
IL-9	H	Baculovirus	ATGP3912
	H	<i>E. coli</i>	ILJ0904
IL-10	H	Baculovirus	ATGP3920
	H	Baculovirus	ATGP2843
IL-12	M	Baculovirus	ATGP3739
	H	Baculovirus	ATGP1483
IL-12B	H	Baculovirus	ATGP1483
	H	<i>E. coli</i>	ATGP3844
IL-15	M	<i>E. coli</i>	ATGP3883
	H	<i>E. coli</i>	ILP0801
IL-16	H	<i>E. coli</i>	ATGP3017
	H	Baculovirus	ATGP3083
IL-17A	M	Baculovirus	ATGP3280
	H	<i>E. coli</i>	ATGP2077(D)
IL-17B	H	Baculovirus	ATGP3535
	H	Baculovirus	ATGP3535
IL-17E/IL-25	H	<i>E. coli</i>	SFT0904
IL-17F	H	<i>E. coli</i>	ATGP2215(D)
	H	Baculovirus	ATGP3605
IL-18	M	<i>E. coli</i>	ATGP0271
	M	<i>E. coli</i>	ATGP3006

H : Human M : Mouse R : Rat C : Canine F : Feline D : Denature form

Product name	Species	Expression system	Cat No.
IL-21	H	<i>E. coli</i>	ATGP3861
	H	Baculovirus	ATGP3802
IL-22	H	Baculovirus	ATGP3842
IL-23	H	Baculovirus	ATGP3598
IL-28A/IFN-lambda 2	H	<i>E. coli</i>	ATGP2563(D)

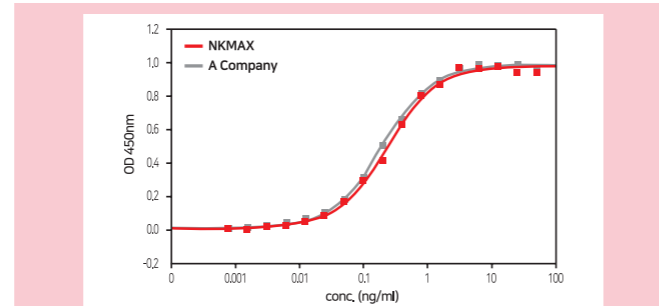
Proliferation Assay

Human IL-1 beta (ILB0701)



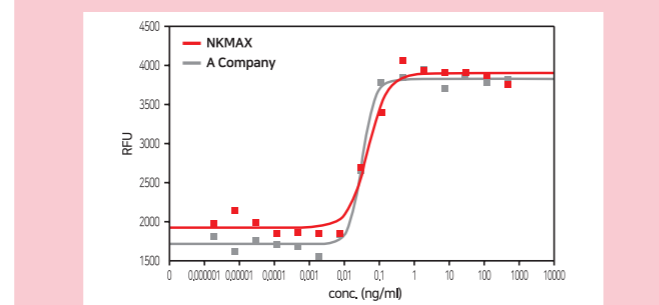
Measured in a cell proliferation assay using D10.G4.1 mouse helper T cells.

Mouse IL-2 (ATGP2987)



Measured in a cell proliferation assay using CTLL-2 mouse T lymphocyte.

Human IL-3 (ATGP3365)



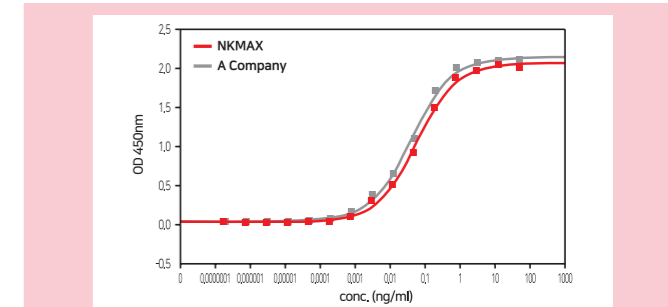
Measured in a cell proliferation assay TF-1 human erythroleukemic cells.

Interleukin receptors are a family of cytokine receptors for interleukins. They belong to the immunoglobulin superfamily. There are two main families of interleukin receptors: Type 1, Type 2 and other types cytokine receptors.

Product name	Species	Expression system	Cat No.
IL-29/IFN-lambda 1	H	<i>E. coli</i>	ATGP2955(D)
	H	Baculovirus	ATGP3419
IL-31	C	Baculovirus	ATGP3570
	C	Baculovirus	ATGP3888
IL-32	H	<i>E. coli</i>	ATGP0266
IL-33	H	<i>E. coli</i>	ILC0701
	M	<i>E. coli</i>	ATGP2860
	R	<i>E. coli</i>	ATGP3167
IL-34	H	<i>E. coli</i>	ATGP1990(D)
	H	Baculovirus	ATGP3796
IL-36 alpha/IL-1F6	M	<i>E. coli</i>	ATGP2951(D)
	M	<i>E. coli</i>	ATGP3166
IL-36 gamma/IL-1F9	H	<i>E. coli</i>	ATGP2236
IL-1ra	H	<i>E. coli</i>	ILA0501
	M	<i>E. coli</i>	ATGP3884
	R	<i>E. coli</i>	ATGP3127
IL-1 R I	H	Baculovirus	ATGP3213
IL-1 R II	H	Baculovirus	ATGP3733
IL-2 R alpha	H	Baculovirus	ATGP3616
IL-2 R beta	H	Baculovirus	ATGP3822
IL-2 R gamma	H	Baculovirus	ATGP3069
IL-3 R alpha	H	Baculovirus	ATGP3712
IL-4 R alpha	H	Baculovirus	ATGP3710
IL-5 R alpha/CD125	H	Baculovirus	ATGP3781
	M	Baculovirus	ATGP3344
IL-6 R alpha	H	Baculovirus	ATGP3919
IL-7 R alpha/CD127	H	Baculovirus	ATGP3703
IL-10 R alpha	H	Baculovirus	ATGP3910
IL-10 R beta	H	Baculovirus	ATGP3664
IL-11 R alpha	R	Baculovirus	ATGP3422
IL-12 R beta 1	H	<i>E. coli</i>	ATGP2945(D)
	H	Baculovirus	ATGP3082
IL-13 R alpha 1	H	Baculovirus	ATGP3068
IL-13 R alpha 2	H	<i>E. coli</i>	ATGP2139(D)
	H	Baculovirus	ATGP3640
IL-15 R alpha	H	Baculovirus	ATGP3672
IL-17 RA	H	Baculovirus	ATGP3632
IL-17 RB	H	Baculovirus	ATGP3061
	M	Baculovirus	ATGP3472
IL-18 R alpha	H	Baculovirus	ATGP3821
IL-18 R beta/IL-1 R7	H	Baculovirus	ATGP3719
IL-21 R	H	Baculovirus	ATGP3182
IL-23 R	H	Baculovirus	ATGP3424
IL-36Ra/IL-1F5	H	<i>E. coli</i>	ATGP2819

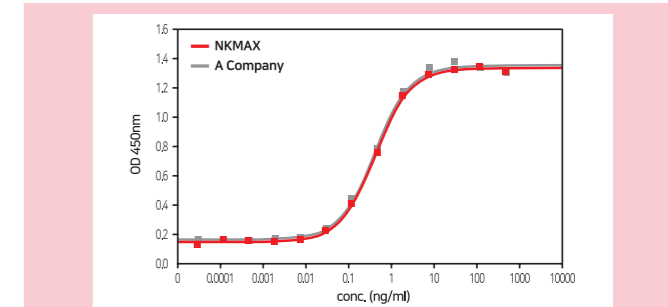
Proliferation Assay

Mouse IL-3 (ATGP3211)



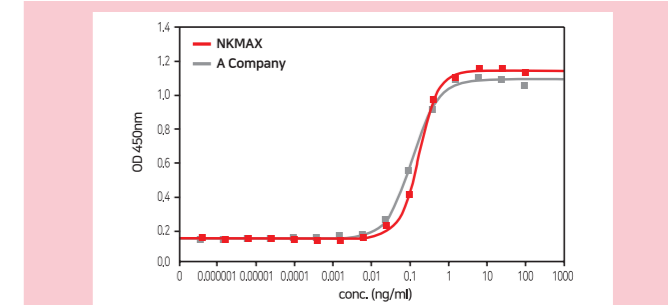
Measured in a cell proliferation assay using Ba/F3 mouse pre-B cells.

Human IL-6 (ATGP0352)



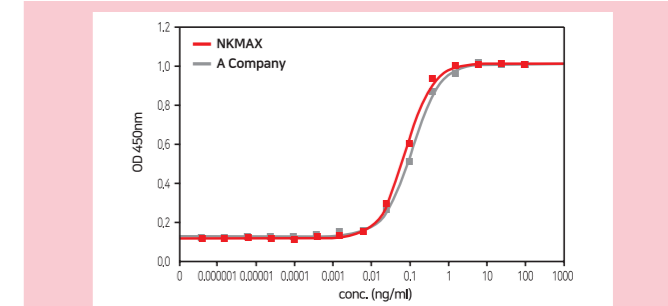
Measured in a cell proliferation assay TF-1 human erythroleukemic cells.

Human IL-33 (ILC0701)



Measured in a cell proliferation assay using D10.G4.1 mouse helper T cells.

Mouse IL-33 (ATGP2860)



Measured in a cell proliferation assay using D10.G4.1 mouse helper T cells.

Interferons

Interferons (IFNs) are a group of signaling proteins made and released by host cells in response to the presence of several pathogens, such as viruses, bacteria, parasites, and also tumor cells. In a typical scenario, a virus-infected cell will release interferons causing nearby cells to heighten their anti-viral defenses.

IFNs belong to the large class of proteins known as cytokines, molecules used for communication between cells to trigger the protective defenses of the immune system that help eradicate pathogens. Interferons are named for their ability to "interfere" with viral replication by protecting cells from virus infections.

Product name	Protein Domain	Species	Expression system	Tagging	Purity	Endotoxin Test	Bioactivity	Cat No.
IFN-alpha 1	24-189aa	H	<i>E.coli</i>	non	>95%	P	NA	IFN0501
IFN-alpha 2b	24-188aa	H	<i>E.coli</i>	non	>95%	P	NA	IFN0502
IFN-alpha 7	24-189aa	H	<i>E.coli</i>	His	>90%	NA	NA	ATGP1873(D)
	24-189aa	H	Baculovirus	His	>90%	P	NA	ATGP3810
IFN-alpha 14	24-189aa	H	<i>E.coli</i>	His	>90%	NA	NA	ATGP1500
IFN-beta	22-182aa	M	<i>E.coli</i>	His	>95%	P	NA	ATGP0317
IFN-gamma	24-166aa	H	<i>E.coli</i>	non	>95%	P	●	IFG4001
	24-161aa	H	<i>E.coli</i>	non	>95%	P	●	ATGP2808
	24-161aa	H	<i>E.coli</i>	His	>90%	P	●	ATGP3723
	23-155aa	M	<i>E.coli</i>	His	>90%	NA	NA	ATGP3513
	24-166aa	C	<i>E.coli</i>	His	>95%	P	NA	ATGP3626
	24-166aa	C	<i>E.coli</i>	non	>95%	P	NA	ATGP3453
	24-167aa	F	<i>E.coli</i>	His	>95%	NA	NA	ATGP3505
IFN-alpha /beta R1	28-436aa	H	Baculovirus	His	>95%	P	NA	ATGP3894
	27-429aa	M	Baculovirus	His	>90%	P	NA	ATGP3450
IFN-gamma R1 /CD119	18-245aa	H	Baculovirus	His	>90%	P	NA	ATGP3807

H : Human M : Mouse R : Rat C : Canine F : Feline P : Pass NA : Not Analyzed D : Denature form

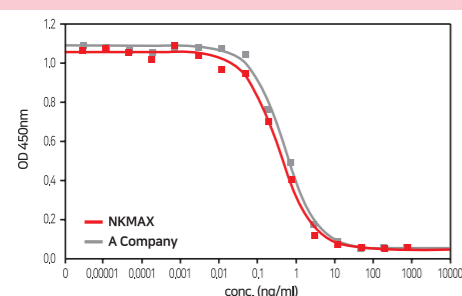
Other Cytokine products

Product name	Protein Domain	Species	Expression system	Tagging	Purity	Endotoxin Test	Bioactivity	Cat No.
TNF-alpha	77-233aa	H	<i>E.coli</i>	non	>95%	P	●	TNF0501
	77-233aa	H	Baculovirus	His	>90%	P	●	ATGP3152
	80-235aa	M	Baculovirus	His	>90%	P	●	ATGP3184
	80-235aa	M	<i>E.coli</i>	non	>95%	P	●	ATGP3651
	80-235aa	R	<i>E.coli</i>	His	>90%	P	●	ATGP3736
	78-234aa	B	<i>E.coli</i>	non	>90%	P	●	ATGP3857
Lymphotoxin-alpha /TNF-beta	35-205aa	H	<i>E.coli</i>	His	>90%	P	●	ATGP0517
	35-205aa	H	Baculovirus	His	>90%	P	●	ATGP3420
M-CSF	33-190aa	H	<i>E.coli</i>	His	>90%	P	NA	ATGP0432
	33-255aa	H	Baculovirus	His	>95%	P	●	ATGP3565
G-CSF	33-187aa	M	Baculovirus	His	>90%	P	●	ATGP3904
	31-204aa	H	<i>E.coli</i>	non	>95%	P	●	CSF4001
GM-CSF	18-144aa	H	<i>E.coli</i>	non	>95%	P	●	MSF0501
	18-141aa	M	<i>E.coli</i>	non	>95%	P	●	MSF0801
MIF	1-115aa	H	<i>E.coli</i>	His	>95%	P	NA	MIF0501
	1-115aa	H	<i>E.coli</i>	non	>99%	P	NA	MIF0801
	1-115aa	H	<i>E.coli</i>	GST	>90%	NA	NA	ATGP3101
	1-115aa	M	<i>E.coli</i>	His	>90%	NA	NA	ATGP3091
Oncostatin M	26-234aa	H	<i>E.coli</i>	His	>95%	P	NA	ATGP1123
Osteopontin(OPN)	17-314aa	H	<i>E.coli</i>	His	>90%	NA	NA	ATGP0274

H : Human M : Mouse R : Rat C : Canine F : Feline P : Pass NA : Not Analyzed D : Denature form

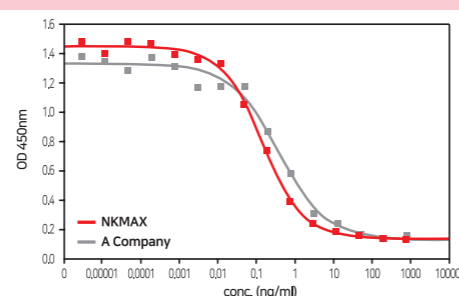
Cytotoxicity Assay

Human IFN-gamma (IFG4001)



Measured in a cytotoxicity assay using WiDr human colon adenocarcinoma cells.

Human IFN-gamma (ATGP2808)



Measured in a cytotoxicity assay using WiDr human colon adenocarcinoma cells.

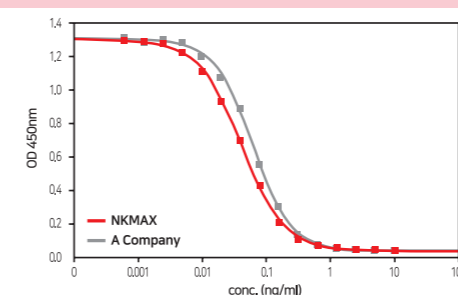
References

Okumura F, et al. Activation of Double-stranded RNA-activated Protein Kinase (PKR) by Interferon-stimulated Gene 15 (ISG15) Modification Down-regulates Protein Translation. *J Biol Chem*. 2013 288(4): 2839-47. [PMID 23229543] **Recombinant IFN-beta**.
 Kusakabe Y, et al. A standardized blood test for the routine clinical diagnosis of impaired GM-CSF signaling using flow cytometry. *J Immunol Methods*. 2014 413: 1-11. [PMID 25068538] **Recombinant GM-CSF**.
 Jung SH, et al. Integrative Proteomic Profiling of Protein Activity and Interactions Using Protein Arrays. *Mol Cell Proteomics*. 2012 11(11): 1167-76. [PMID 22843993] **Recombinant Osteopontin**.
 Sun YN, et al. Nuclear Factor Kappa B Activation and Peroxisome Proliferator-activated Receptor Transactivational Effects of Chemical Components of the Roots of Polygonum multiflorum. *Pharmacogn Mag*. 2016 12(45): 31-5. [PMID 27019559] **Recombinant TNF-alpha**.

Thao NP, et al. Inhibition of NF-κB transcriptional activation in HepG2 cells by diterpenoids from the soft coral *Sinularia maxima*. *Arch Pharm Res*. 2014 37(6): 706-12. [PMID 23934574] **Recombinant TNF-alpha**.
 Li W, et al. Anti-Inflammatory and PPAR Transactivational Effects of Oleanane-Type Triterpenoid Saponins from the Roots of *Pulsatilla koreana*. *Biomol Ther (Seoul)*. 2014 22(4): 334-40. [PMID 25143813] **Recombinant TNF-alpha**.
 Song SB, et al. Inhibition of TNF-α-mediated NF-κB Transcriptional Activity in HepG2 Cells by Damarane-type Saponins from *Panax ginseng* Leaves. *J Ginseng Res*. 2012 36(2): 146-52. [PMID 23717114] **Recombinant TNF-alpha**.
 Nhiem NX, et al. Inhibition of Nuclear Transcription Factor-κB and Activation of Peroxisome Proliferator-Activated Receptors in HepG2 Cells by Cucurbitane-Type Triterpene Glycosides from *Momordica charantia*. *J Med Food*. 2012 15(4): 369-77. [PMID 22248180] **Recombinant TNF-alpha**.

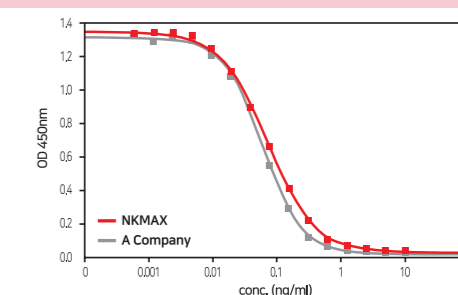
Cytotoxicity Assay

Human TNF-alpha (TNF0501)



Measured in a cytotoxicity assay using L-929 mouse fibrosarcoma cells in the presence of the metabolic inhibitor actinomycin D.

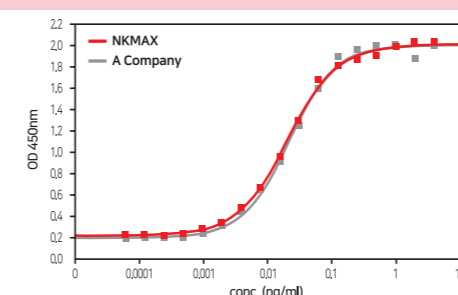
Human TNF-alpha (ATGP152)



Measured in a cytotoxicity assay using L-929 mouse fibrosarcoma cells in the presence of the metabolic inhibitor actinomycin D.

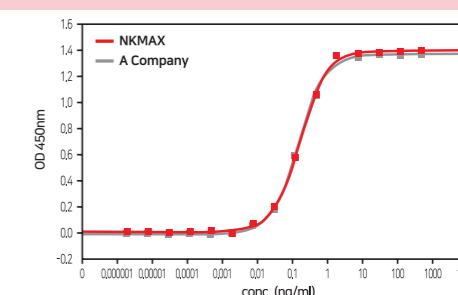
Proliferation Assay

Human GM-CSF (MSF0501)



Measured in a cell proliferation assay using TF-1 human erythroleukemic cells.

Mouse GM-CSF (MSF0801)



Measured in a cell proliferation assay using MC/9 mouse mast cells.