Sino Biological

Research Toolkits for Autoimmune and Inflammatory Diseases

Autoimmune and Inflammatory Disease Research

Autoimmune diseases are a group of disorders characterized by uncontrolled inflammation associated with dysregulation of the adaptive immune system. Examples of these disorders include rheumatoid arthritis (RA), inflammatory bowel disease (IBD), psoriasis, multiple sclerosis (MS), and systemic lupus erythematosus (SLE). Over the last decades, a steady rise in autoimmune diseases has been observed throughout Westernized societies.

Current therapies for autoimmune disease are associated with a broad spectrum of unmet medical needs due to the unsatisfactory efficacy and numerous side effects. As the award-winning protein supplier in 2021 and 2022, Sino Biological has developed a broad collection of recombinant proteins and high-quality antibodies to support autoimmune disease research.

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Featured Products for Cytokine/Cytokine Receptor Targets

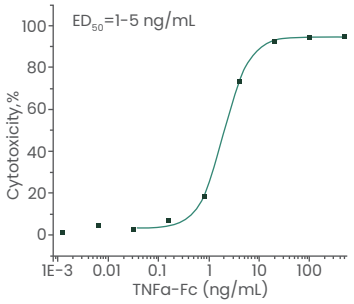
In autoimmune pathologies, the compromised immune tolerance disrupts the equilibrium of the cytokine milieu in disease target tissues. This shifts the local environment towards a pro-inflammatory state, resulting in tissue damage. Targeting cytokines and their receptors with monoclonal antibodies have become a mainstream therapeutic approach for autoimmune disorders. Sino Biological has developed numerous proteins and antibodies for anti-cytokine therapeutics.

TNFα

TNFα is considered a master mediator in the pathogenesis of autoimmune inflammatory diseases. The FDA has approved a variety of anti-TNFα antibodies such as adalimumab and golimumab for the treatment of RA, Crohn's disease (CD), and ankylosing spondylitis (AS).

Human TNFα Protein (hFc Tag)

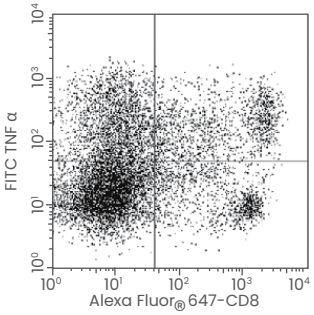
Cat#: 10602-H01H



Measured in a cytotoxicity assay using L929 mouse fibrosarcoma cells in the presence of the metabolic inhibitor actinomycin D.

Anti-Human TNFα Antibody (FITC)

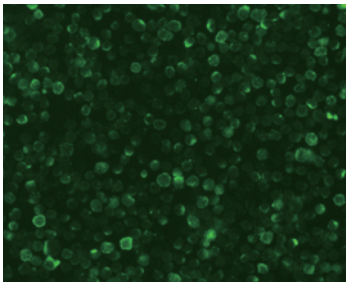
Cat#: 10602-R101-F



Flow cytometric analysis of anti-human TNFα on stimulated PBMC.

Anti-Rat TNFα Antibody

Cat#: 80045-R141



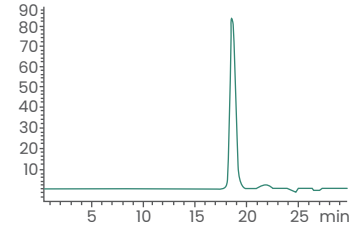
Immunofluorescence staining of rat TNFα in rat spleen cells.

IL-1 & IL-1R

The IL-1 family cytokines and receptors play a role in acute and chronic inflammation. Research has found that IL-1 inhibitory strategies have therapeutic effects in reducing inflammatory conditions.

Mature Human IL1β Protein

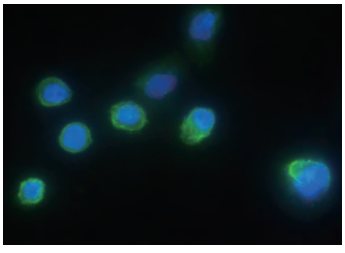
Cat#: 10139-HNAE



Purity ≥ 95 % as determined by SEC-HPLC.

Anti-Human IL1RA Antibody

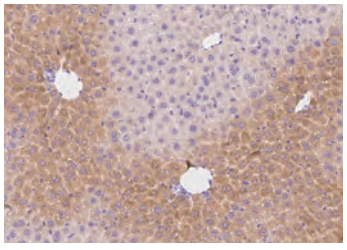
Cat#: 10123-R004



Immunofluorescence staining of Human IL1Ra in A431 cells.

Anti-Mouse IL1α Antibody

Cat#: 105996-T08



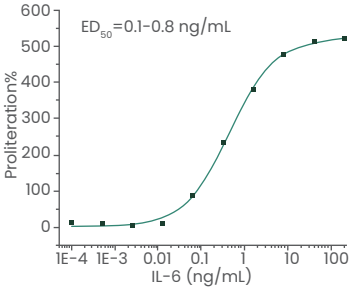
Immunochemical staining of mouse IL1A in mouse liver.

IL-6 & IL-6R

The IL-6/IL-6R signaling pathway is a critical therapeutic target in inflammatory diseases. Tocilizumab and sarilumab, two anti-IL-6 receptor (IL-6R) monoclonal antibodies, have proven successful in treating RA.

Mature Human IL-6 Protein

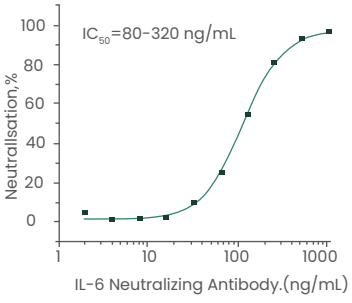
Cat#: 10395-HNAE



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

IL-6 Neutralizing Antibody

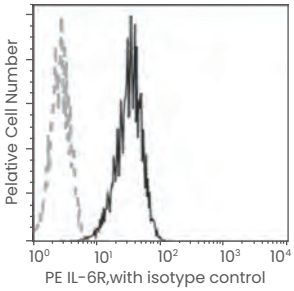
Cat#: 10395-R508



Ability to neutralize IL-6 induced proliferation in the T1165 mouse plasmacytoma cells.

Anti-Human IL-6R Antibody (PE)

Cat#: 10398-R502-P



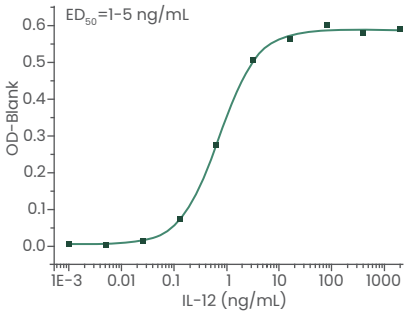
Flow cytometric analysis of Human IL-6R expression on U266 cells.

IL-12 & IL-23

The IL-12/IL-23 pathway plays a determinant role in inducing inflammation in adaptive immune responses. Targeting IL-12 and IL-23 may have therapeutic value for psoriasis, RA, and other inflammatory disorders.

Human IL-12 Protein (His Tag)

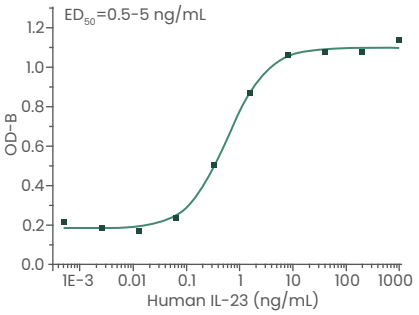
Cat#: CT050-H08H



Ability to induce IFN-γ secretion by human natural killer lymphoma NK-92 cells.

Human IL-23 Protein (His Tag)

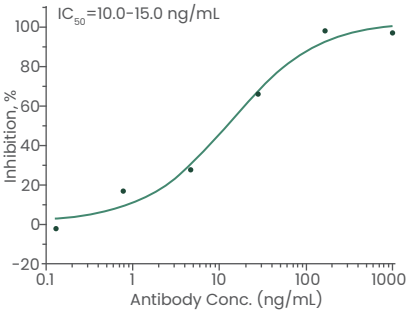
Cat#: CT048-H08H



Ability to induce IL17 secretion by mouse splenocytes.

IL-23A Neutralizing Antibody

Cat#: CT035-mh066



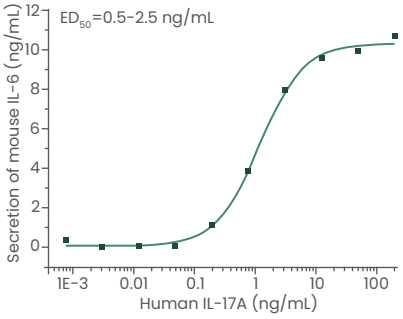
Ability to neutralize IL17A secretion induced by human IL23.

IL-17

Interleukin-17 (IL-17/IL-17A) is a pro-inflammatory cytokine produced by T helper 17 (Th17) cells. Because of its crucial roles in immune regulation, IL-17 is now a target for an array of therapeutic monoclonal antibodies and inhibitors to treat various inflammatory diseases and cancer.

Mature Human IL-17A (T26A mutation, His Tag)

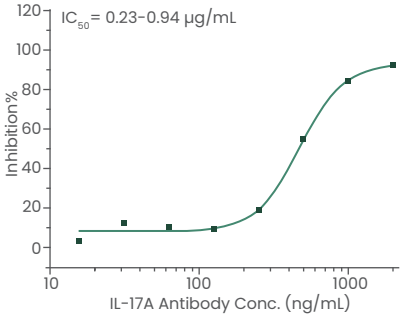
Cat#: 12047-H07B



Ability to induce IL-6 secretion by NIH-3T3 mouse embryonic fibroblast cells in the presence of 20 ng/mL TNFα.

Human IL17A Neutralizing Antibody

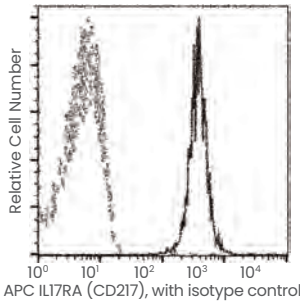
Cat#: 12047-M237



Ability to inhibit IL-17A-induced IL-6 production.

Anti- Human IL17RA Antibody (APC)

Cat#: 10895-MM06-A



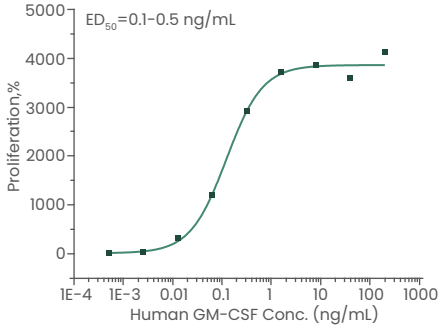
Flow cytometric analysis of Human IL17RA (CD217) expression on human whole blood granulocytes.

GM-CSF

GM-CSF plays critical roles in the development of many autoimmune diseases. For example, GM-CSF depletion or neutralization suppresses many autoimmune disease development in many disease models, including arthritis, arthritis-related interstitial lung disease, nephritis, or psoriasis.

Human GM-CSF Protein

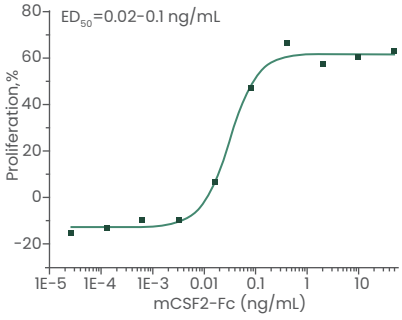
Cat#: 10015-HNAH



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

Mouse GM-CSF Protein (hFc Tag)

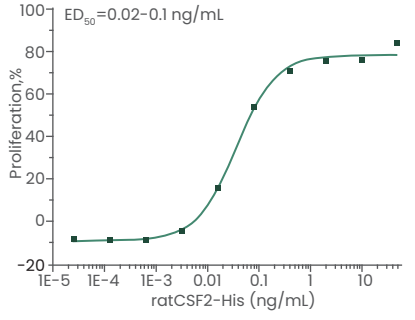
Cat#: 51048-M01H



Measured in a cell proliferation assay using FDC-P1 cells.

Rat GM-CSF Protein (His Tag)

Cat#: 80020-R07H



Measured in a cell proliferation assay using FDC-P1 cells.

More Proteins and Antibodies for Cytokine/Cytokine Receptor Targets (Partial)

Target	Human Protein	Anti-human Antibody
TNFα	10602-HNAE, 10602-HNAE-B	10602-MM01-F (FCM), 10602-MM0N1 (Neutralization), 10602-R211 (ELISA)
IL-1α	10128-HNCE, 10128-HNCH	10128-MM74 (ELISA), 10128-T16 (ELISA)
IL-1β	10139-H07E	10139-MM39 (IHC-P), 10139-M201 (ELISA, IHC-P), 10139-R101 (ELISA)
IL1R1	10126-H02H, 10126-H08H	10126-MM10 (ELISA), 10126-RP01 (ELISA)
IL1R2	10111-H02H, 10111-H08H	10111-MM04 (ELISA), 10111-R020 (ELISA)
IL1RA	10123-H01H, 10123-HNAE	10123-MM02 (FCM, ICC/IF), 10123-T24 (ELISA, IHC-P), 10123-MM12 (ELISA)
IL-2	11848-H08H, 11848-HNAE-B	11848-MM03 (ELISA), 11848-MM03-A (FCM), 11848-MM03-P (FCM)
IL-2RA	10165-H02H, 10165-H08H	10165-MM17-C (FCM), 10165-R216 (FCM), 10165-T24 (ELISA, IHC-P)
IL-2RB	10696-H02H, 10696-H05H	
IL-2RG	10555-H02H, 10555-H08B	105167-T40 (WB, IHC-P), 10555-MM10 (ELISA), 10555-RP01 (ELISA)
IL-3	11858-H08B, 11858-H08H	106308-T32 (WB), 11858-MM35-H (ELISA), 11858-T48 (WB, ELISA)
IL-4	11846-HNAE, 11846-HNAE-B	11846-M401 (WB), 11846-MM04-H (ELISA), 11846-T48 (WB,ELISA)
IL-6		10395-mhK23 (Neutralization), 10395-MM02 (ELISA), 10395-MM10 (IHC-P)
IL-6R	10398-H02H, 10398-H08H	10398-MM08 (Neutralization), 10398-MM01 (ELISA), 10398-R502 (FCM)
IL-7	11821-HNAE	11821-MM20 (ELISA), 11821-R022 (ELISA)
IL-10	10947-H07H, 10947-HNAE	10947-MM19 (ELISA), 10947-R001 (ELISA)
IL-10RA	10419-H08H	
IL-10RB	10945-H03H, 10945-H08H	10945-RP01 (ELISA), 10945-T48 (WB, ELISA)
IL-12	CT050-HNAH, CT011-H08H	
IL-12 p35	10021-H02H, 10021-H08H	10021-R006 (ELISA), 10021-RP01 (ELISA), 10021-RP02 (WB, ELISA, IHC-P)
IL-12B	10052-H02H, 10052-H08H	10052-MM01 (ELISA), 10052-MM11 (ELISA)
IL12RB1	11674-H08H	101340-T36 (WB, IP), 11674-MM05 (ELISA), 310291-T08 (IHC-P)
IL-15	10360-H07E, 10360-HNCE	10360-MM04 (ELISA), 10360-RP01 (ELISA)
IL-17A	12047-H07B, 12047-H07Y	12047-MM06T (ELISA),12047-MM31-B (ELISA)
IL17A & IL17F Heterodimer	CT047-H08H, CT047-HNAE	
IL-17B	11939-H02B	201270-T40 (WB, IHC-P)
IL-17C	10784-H02B	100571-T32 (WB)
IL-17RA	10895-H03H, 10895-H08H	10895-MM06 (ELISA, FCM), 10895-R004 (FCM, Neutralization)
IL-17RB	13091-H02H, 13091-H08H	13091-MM09 (ELISA), 13091-T16 (ELISA)
IL-17RC	11747-H02H, 11747-H08B	11747-MM02 (ELISA), 11747-RP01 (ELISA)
IL-18	10119-H09E, 10119-HNCE	10119-T52 (WB, ELISA, IP), 310203-T32 (WB), 310203-T44 (WB, IHC-P, IP)
IL-18Rα	11102-H02H, 11102-H08H	11102-MM05-H (ELISA), 11102-MM17-A (FCM), 200105-T08 (IHC-P)
IL-23	CT048-H27H-B, CT012-H08H	
IL23A	13062-H02H, 13062-H05H	310715-T08 (IHC-P), 310619-T08 (IHC-P)
IL-36α	10125-HNAE	10123-MM02 (FCM, ICC/IF), 10123-R001 (ELISA), 10123-T24 (ELISA, IHC-P)
IL-36β	10579-H07E1, 10579-HNAE	10579-RP01 (ELISA), 10579-T16 (ELISA)
IL-36γ	10124-H07E1, 10124-HNAE	10124-MM10 (ELISA), 10124-R013 (IHC-P), 310462-T40 (WB, IHC-P)
GM-CSF	10015-H07H, 10015-HNAH	10015-MM06-H (ELISA), 10015-RP02 (WB, ELISA),10015-R027 (ELISA)
IFN-γ	11725-HNAS	105908-T08 (IHC-P), 11725-M005 (WB), 11725-R003-C (FCM)

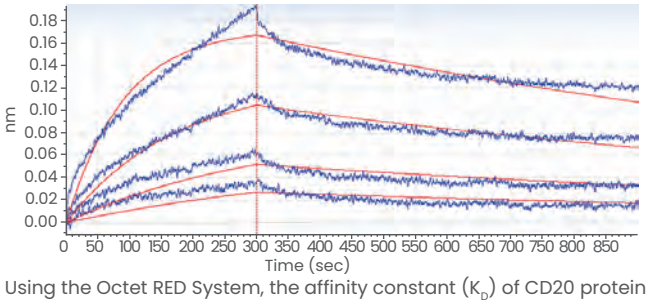
Featured Products for B Cell Targets

Targeting B cells is a powerful strategy for the treatment of multiple autoimmune diseases. Several B cell molecules such as CD19, CD20 and CD22, are key therapeutic protein targets for autoreactive B cell silencing and depletion. Sino Biological provides well-validated proteins and antibodies for the development of B cell depletion therapies.

CD20

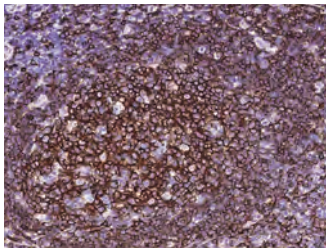
CD20, a pan B-cell surface marker, is expressed on the majority of B lineage cells, including immature, mature, and memory B cells. It is an important drug target for B cell depletion therapies in autoimmune diseases, such as RA and MS, and anti-CD20 treatments have shown significant clinical success in these disorders.

Human CD20 Protein (TrxA Tag)
Cat#: 11007-H34E-B

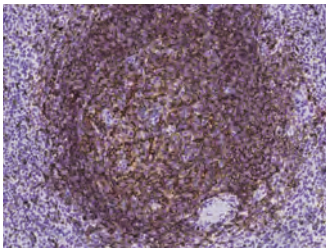


Using the Octet RED System, the affinity constant (K_D) of CD20 protein bound Mabthera was 0.04 μM.

Anti-Human/Cynomolgus CD20 Antibody
Cat#: 11007-MM06



Immunochemical staining of CD20 in human tonsil.

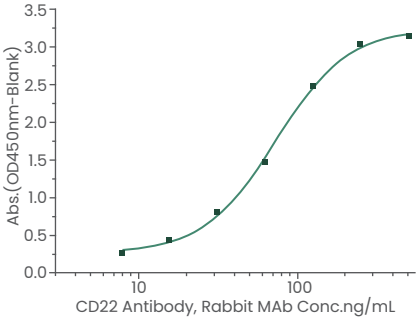


Immunochemical staining of CD20 in cynomolgus spleen.

CD22

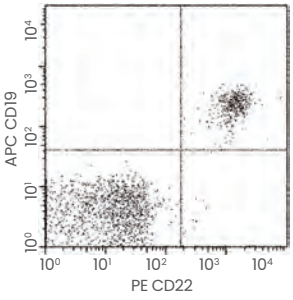
CD22, an inhibitory co-receptor of the B-cell receptor (BCR), is predominantly expressed on the surface of activated B cells and memory cells. CD22 is an attractive target for B cell depletion in treating autoimmune diseases and B-cell-derived malignancies.

Human CD22 Protein (His Tag)
Cat#: 11958-H08H



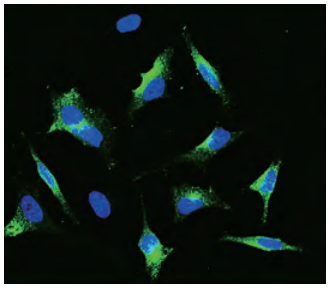
Ability to bind anti-human CD22 mAb with a linear range of 0.2-50 ng/ml.

Anti-Human CD22 Antibody (PE)
Cat#: 11958-MM13-P



Flow cytometric analysis of human CD22 expression on human whole blood lymphocytes.

Anti-Human CD22 Antibody
Cat#: 11958-T26



Immunofluorescence staining of CD22 in HeLa cells.

More Proteins and Antibodies for B Cell Targets (Partial)

Target	Human Protein	Anti-human Antibody
CD19	11880-H02H, 11880-H08B	11880-MM05 (WB, ELISA), 11880-MM17 (FCM, ICC/IF)
CD20	11007-H34E, 11007-H07H2	11007-MM03 (IHC-P), 11007-R001 (FCM), 11007-T60 (WB, ELISA, IHC -P, IP)
CD22	11958-H02H, 11958-H08H-B	11958-RP01 (ELISA), 201878-T08 (IHC-P), 11958-MM13-F (FCM)
BLyS/BAFF	10056-H01H, 10056-H42H-B	10056-R001 (ELISA), 10056-R182 (WB, FCM, IP), 10056-R182-P (FCM)
BCMA	10620-H15H, 10620-H03H-B	10620-R049 (ELISA), 10620-RP01 (ELISA)
TACI	11937-H08H, 29965-H02H	11937-R006 (ELISA), 201404-T08 (IHC-P)
BAFF-R	16079-H02H, 16079-H41H-B	200139-T08 (IHC-P)

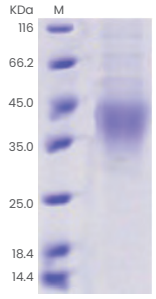
Featured Products for T Cells and Co-stimulatory Targets

T cells play a critical role in the pathogenesis of autoimmune diseases. T cells require two signals to be fully activated: 1) an antigen specific signal and 2) a co-stimulatory signal. Targeting T cell activation is an effective therapeutic strategy for preventing and treating autoimmune disorders. Sino Biological provides high quality proteins and antibodies associated with T cells and co-stimulatory molecules.

CD28

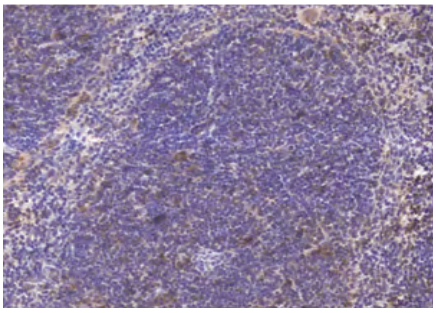
CD28, predominantly expressed on activated T cells, provides a critical co-stimulatory signal to T cells that make it a key therapeutic drug target in RA, SLE, PA, and other autoimmune diseases.

Human/Cynomolgus/Rhesus CD28 Protein (His Tag)
Cat#: 90182-C08H



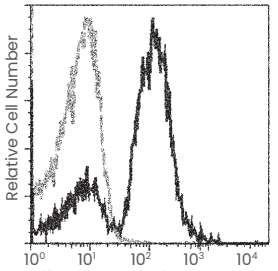
Purity > 90% as determined by SDS-PAGE.

Anti-Mouse CD28 Antibody
Cat#: 50103-RP02



Immunochemical staining of mouse CD28 in mouse spleen.

Anti-Human CD28 Antibody
Cat#: 11524-R007



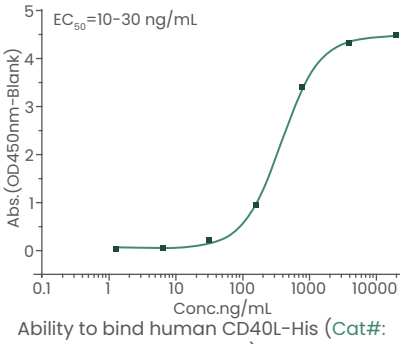
Purified CD28, with isotype control (FITC second step)

Flow cytometric analysis of human CD28 expression on human whole blood lymphocytes.

CD40

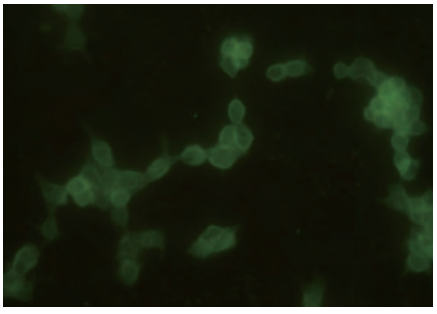
CD40 plays a pathogenic role in IBD, psoriasis, MS, RA, and SLE. Targeting the CD40-CD40L pathway has great potential for treating these autoimmune diseases.

Human CD40 Protein (Fc Tag)
Cat#: 10774-H02H



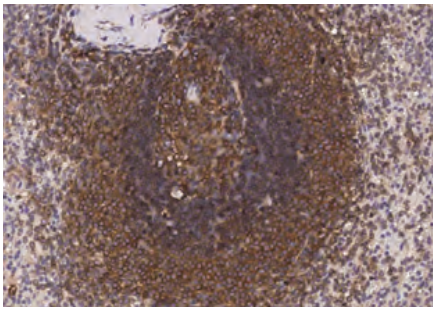
Ability to bind human CD40L-His (Cat#: 10239-H08E).

Anti-Human CD40 Antibody
Cat#: 10774-MM03



Immunofluorescence staining of Human CD40 in Hep G2 cells.

Anti-Human CD40 Antibody
Cat#: 10774-T24



Immunochemical staining of human CD40 in human spleen.

More Reagents for T Cells and Co-stimulatory Targets (Partial)

Target	Human Protein	Anti-human Antibody
CD2	10982-H08H, 10982 -H02H	10982-M127-F (FCM), 10982-MM02 (ELISA), 10982-MM05 (IHC-P)
CD11a		100394-T08 (IHC-P), 310413-T08 (IHC-P)
CD25	10165-H08H, 10165-H27H-B	10165-MM17-P (FCM), 10165-MM14 (ELISA), 10165-T24 (ELISA, IHC-P)
CD28	11524-H02H, 11524-H41H-B	11524-H001 (FCM, Func/A), 11524-MM04-H (ELISA), 11524-R007-F (FCM)
CD40	10774-H03H, 10774-H08H-B	101510-T32 (WB), 10774-MM03-A (FCM), 10774-MM17 (FCM, ICC/IF)
CTLA-4	11159-HNAH, 11159-H08H-B	11159-MM06-B (ELISA), 11159-RP02 (WB, ELISA), 11159-R060 (ELISA)
ICOS	10344-H31H, 10344-H03H	
CD80	10698-H08H, 10698-H02H	10698-MM01-F (FCM), 10698-T24 (ELISA, IHC-P), 10698-MM01 (ELISA, FCM)
CD86	10699-H08H, 10699-H03H-B	10699-MM06-A (FCM), 10699-R118-B (ELISA), 10699-R269 (IHC-P)

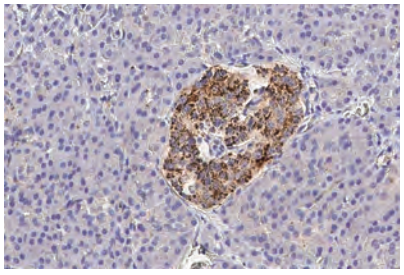
Featured Products for Chemokine/Chemokine Receptor Targets

Chemokines and chemokine receptors contribute to inflammation via mediated inflammatory cell recruitment, cell migration, and angiogenesis. Their involvement with many autoimmune diseases, including RA, MS, and SLE, makes these molecules attractive drug targets. Sino Biological offers a broad panel of recombinant proteins and antibodies targeting chemokines and chemokine receptors.

Fractalkine

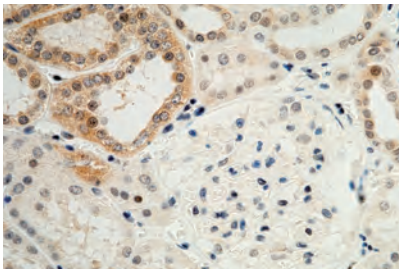
Fractalkine (CX3CL1), the only member of the CX3C chemokine family, is potentially a major drug target for the treatment of autoimmune diseases and cancer.

Anti-Human Fractalkine
Cat#: 10636-R409



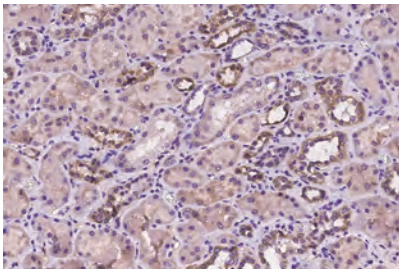
Immunochemical staining of human CX3CL1 in human pancreas.

Anti-Human Fractalkine
Cat#: 10636-RP03



Immunochemical staining of human CX3CL1 in human kidney.

Anti-Human Fractalkine
Cat#: 201213-T08

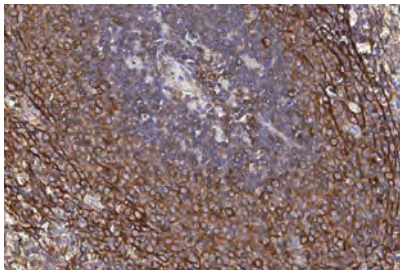


Immunochemical staining of human CX3CL1 in human kidney.

CCR1

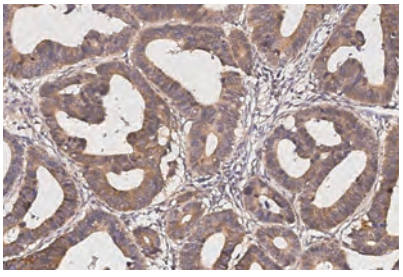
CCR1, a receptor for CCL3, CCL5, CCL7, CCL14, and CCL15, is involved in initiating and exacerbating inflammatory conditions and is identified as a promising therapeutic target for autoimmune and inflammatory disorders.

Anti-Human CCR1 Antibody
Cat#: 100449-R003



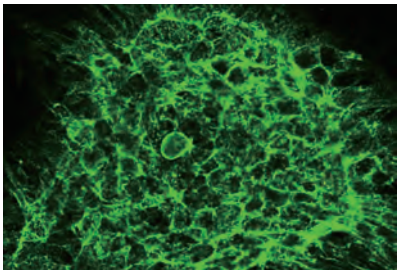
Immunochemical staining of human CCR1 in human spleen.

Anti-Human CCR1 Antibody
Cat#: 102262-T08



Immunochemical staining of human CCR1 in human colon carcinoma.

Anti-Human CCR1 Antibody
Cat#: 100449-T46



Immunofluorescence staining of CCR1 in HESS9 cells.

More Reagents for Chemokine/Chemokine Receptor Targets (Partial)

Target	Human Protein	Anti-human Antibody
Fractalkine	10636-H08H	10636-MM02 (ELISA), 10636-T16 (ELISA)
CXCL10	10768-HNAE	10768-MM07 (ELISA), 10768-MM10-H (ELISA)
CCL2	10134-H08Y	10134-MM07 (ELISA), 10134-T26 (ELISA, IHC-P, ICC/IF), 201199-T08 (IHC-P)
CCR1		100449-R002 (WB, IP), 100449-T44 (WB, IHC-P, IP)
CXCL12	10118-H01H, 13511-H07E	10118-T08 (IHC-P)
CCR2		100450-MM02-F (FCM), 100450-T34 (WB, ICC/IF), 100450-T36 (WB, IP)
CCR5		310266-T32 (WB)
CXCR5		100411-T32 (WB)

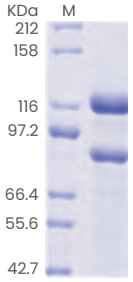
Additional Products for Autoimmune Disease Drug Targets

Similar to cytokine targets, other important proteins also play critical roles in the pathogenesis of autoimmune disorders, such as Janus Kinase (JAK) and Bruton's tyrosine kinase (BTK). A broad collection of recombinant proteins and antibodies are available to support the discovery of therapeutic agents against autoimmune disorders.

C5

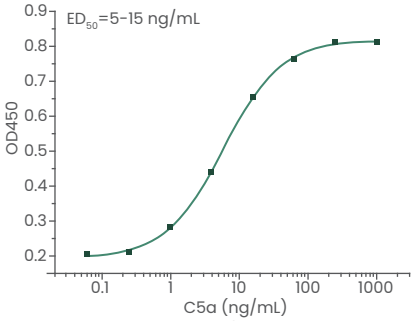
Targeting C5 limits the potency of complement activation and prevents the pro-inflammatory effects of C5a and C5b. This approach has shown therapeutic effects in paroxysmal nocturnal hemoglobinuria (PNH) and other complement-driven inflammatory diseases.

Human C5 Protein
(His & FLAG Tag)
Cat#: 13416-H18H



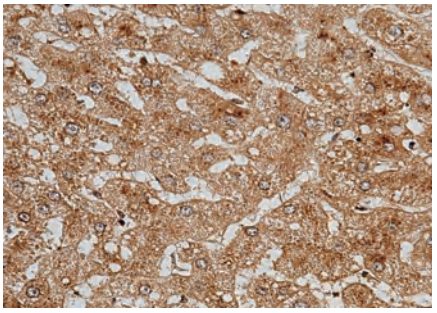
Purity > 95% as determined by SDS-PAGE.

Human C5a Protein
Cat#: 10604-HNAE



Ability to induce N-acetyl-β-D-glucosaminidase release from differentiated U937 human histiocytic lymphoma cells.

Anti-Human C5a Antibody
Cat#: 10604-R215

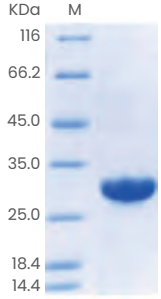


Immunochemical staining of human C5a in human cirrhosis.

Galectin 3

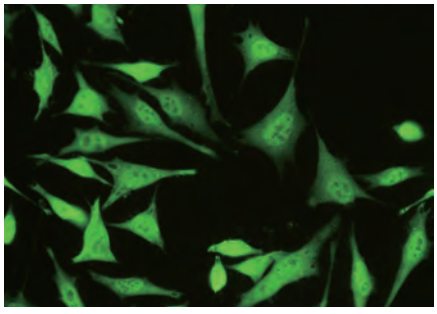
Galectin 3 participates in cellular activation, proliferation, differentiation, migration and apoptosis. It's a potential therapeutic target for treating patients affected with some autoimmune disorders and cancer.

Human Galectin 3 Protein
Cat#: 10289-HNAE-E



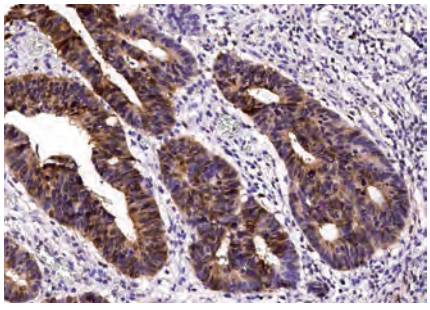
Purity > 97% as determined by SDS-PAGE.

Anti-Human Galectin 3 Antibody
Cat#: 10289-R024



Immunofluorescence staining of human Galectin 3 in Hela cells.

Anti-Human Galectin 3 Antibody
Cat#: 10289-R102



Immunofluorescence staining of human Galectin 3 in Hela cells.

More Reagents for Autoimmune Disease Drug Targets (Partial)

Target	Human Protein	Anti-human Antibody
TNFR2	10417-H03H, 10417-H08H	10417-MM05 (ELISA), 10417-R00N6 (Neutralization), 10417-RP01 (ELISA)
C1QB	10941-H08B	
C5		10604-MM04 (ELISA), 10604-R241 (ELISA)
BTK	10578-H08B	10578-T16 (ELISA), 10578-T52 (WB, ELISA, IP)
JAK1		310501-T08 (IHC -P)
JAK3		207564-T32 (WB)
Galectin 1	10290-HNAE	10290-MM01 (IHC-P), 10290-RP02 (WB, ELISA), 10290-RP01 (ELISA)
Galectin 3	10289-H08H1	10289-R078 (WB, IP), 203092-T36 (WB, IP), 10289-MM01 (WB, ELISA, IP)

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