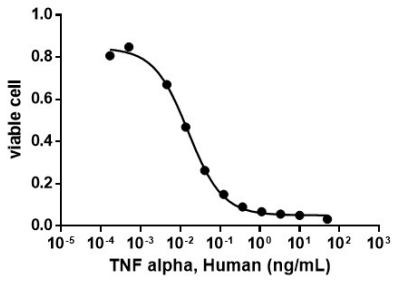
Bioactive | CellTx™ | GMP Grade

TNF (Human) Recombinant Protein

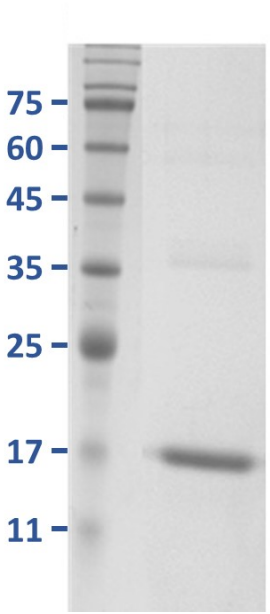
Catalog # P7004 Size 100 ug

Applications



Functional Study

The ED_{50} for this effect is <0.1 pg/mL, measured by the induction of cytotoxicity in L929 cells in the presence of actinomycin D.



Specification

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Product Description	Human TNF recombinant protein with polyhistidine tag at the C-terminus expressed in *Escherichia coli*.
Host	Escherichia coli
Theoretical MW (kDa)	Calculated MW: 18.3
Form	Lyophilized
Preparation Method	*Escherichia coli* expression system
Purification	Ni-NTA chromatography
Purity	> 97% by SDS-PAGE
Endotoxin Level	< 0.05 EU/ug
Activity	The ED_{50} for this effect is < 0.1 ng/mL, measured by the induction of cytotoxicity in L929 cells in the presence of actinomycin D. The specific activity of recombinant human TNF alpha is approximately ≥ 1×10^7 IU/mg, which is calibrated against the human TNF Alpha WHO International Standard (NIBSC code: 12/154).
Quality Control Testing	SDS-PAGE Stained with Coomassie Blue
Recommend Usage	SDS-PAGE The optimal working dilution should be determined by the end user.
Regulatory Status	GMP grade
Storage Buffer	Lyophilized from PBS (500 mM NaCl, pH 8.0). Reconstitute the lyophilized protein in sterile H_2O to a concentration of at least 0.5 mg/mL and incubate the stock solution for at least 20 min to ensure sufficient redissolution. Please use the protein within one month after reconstitution.
Storage Instruction	Store at -20°C for 12 months in lyophilized state. After reconstitution with deionized water, store at -20 or -80°C for 1 month. Aliquot to avoid repeated freezing and thawing.

Applications

- Functional Study

  The ED_{50} for this effect is <0.1 pg/mL, measured by the induction of cytotoxicity in L929 cells in the presence of actinomycin D.

- SDS-PAGE

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Gene Info — TNF

Entrez GeneID	7124
Gene Name	TNF
Gene Alias	DIF, TNF-alpha, TNFA, TNFSF2
Gene Description	tumor necrosis factor (TNF superfamily, member 2)
Omim ID	157300 191160 248310 600807 611162
Gene Ontology	Hyperlink
Gene Summary	This gene encodes a multifunctional proinflammatory cytokine that belongs to the tumor necrosis factor (TNF) superfamily. This cytokine is mainly secreted by macrophages. It can bind to, and thus functions through its receptors TNFRSF1A/TNFR1 and TNFRSF1B/TNFBR. This cytokine is involved in the regulation of a wide spectrum of biological processes including cell proliferation, differentiation, apoptosis, lipid metabolism, and coagulation. This cytokine has been implicated in a variety of diseases, including autoimmune diseases, insulin resistance, and cancer. Knockout studies in mice also suggested the neuroprotective function of this cytokine. [provided by RefSeq
Other Designations	APC1 protein|OTTHUMP00000029281|OTTHUMP00000037669|TNF superfamily, member 2|TNF, macrophage-derived|TNF, monocyte-derived|cachectin|tumor necrosis factor alpha

Pathway

- Adipocytokine signaling pathway
- Allograft rejection
- Amyotrophic lateral sclerosis (ALS)
- Apoptosis
- Asthma
- Cytokine-cytokine receptor interaction
- Fc epsilon RI signaling pathway
- Graft-versus-host disease
- Hematopoietic cell lineage
- Hypertrophic cardiomyopathy (HCM)

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- MAPK signaling pathway
- Natural killer cell mediated cytotoxicity
- Systemic lupus erythematosus
- T cell receptor signaling pathway
- TGF-beta signaling pathway
- Toll-like receptor signaling pathway
- Type I diabetes mellitus
- Type II diabetes mellitus

Disease

- Abortion
- Abscess
- Absenteeism
- Acne Vulgaris
- Acquired Immunodeficiency Syndrome
- Acute Disease
- Acute Lung Injury
- Adenocarcinoma
- Adenoma
- Adenomatous Polyps
- Adrenal Gland Neoplasms
- Aggressive Periodontitis
- AIDS Dementia Complex
- AIDS-Related Opportunistic Infections

- Albuminuria

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- Alcoholism
- alpha 1-Antitrypsin Deficiency
- Alpha-1-antitrypsin deficiency
- alpha-Thalassemia
- Alphavirus Infections
- Alveolar Bone Loss
- Alveolitis
- Alzheimer disease
- Amphetamine-Related Disorders
- Amyloidosis
- Amyotrophic lateral sclerosis
- Anemia
- Aneurysm
- Angina
- Angina Pectoris
- Anorexia
- Anorexia Nervosa
- Anthracosis
- Antiphospholipid Syndrome
- Anus Diseases
- Aortic Aneurysm
- Aortic Diseases
- Aortic Rupture
- Appendicitis
- Appetite
- Arterial Occlusive Diseases

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- Arteriosclerosis
- Arteriovenous Malformations
- Arthritis
- Aspergillosis
- Asphyxia Neonatorum
- Asthenozoospermia
- Asthma
- Atherosclerosis
- Atrial Fibrillation
- Atrophy
- Attention
- Attention Deficit Disorder with Hyperactivity
- Autistic Disorder
- Autoimmune Diseases
- Autoimmune polyglandular syndrome
- Bacteremia
- Bacterial Infections
- Behcet Syndrome
- Berylliosis
- beta-Thalassemia
- Biliary Tract Neoplasms
- Bipolar Disorder
- Birth Weight
- Blood Coagulation Disorders
- Body Weight
- Bone Marrow Diseases

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- Bone Resorption
- Boutonneuse Fever
- Brain Ischemia
- Breast cancer
- Breast Diseases
- Breast Neoplasms
- Bronchial Hyperreactivity
- Bronchiectasis
- Bronchiolitis
- Bronchiolitis Obliterans
- Bronchitis
- Bronchopneumonia
- Bronchopulmonary Dysplasia
- Brucellosis
- Burkitt lymphoma
- Burns
- Byssinosis
- Cachexia
- Cadaver
- Calcinosis
- Carcinoma
- Cardiomyopathies
- Cardiomyopathy
- Cardiovascular Diseases
- Carotid Artery Diseases
- Carotid Stenosis

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- Celiac Disease
- Cerebral Hemorrhage
- Cerebral Infarction
- Cerebral Palsy
- Cerebrovascular Accident
- Cerebrovascular Disorders
- Cervical Intraepithelial Neoplasia
- Chagas Cardiomyopathy
- Chagas Disease
- Chlamydia Infections
- Chlamydophila Infections
- Cholangitis
- Choreatic Disorders
- Chorioamnionitis
- Chronic Disease
- Chronic Periodontitis
- Clonorchiasis
- Cognition
- Colitis
- Colon cancer
- Colonic Neoplasms
- Colonic Polyps
- Colorectal Neoplasms
- Common Cold
- Communicable Diseases
- Community-Acquired Infections

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- Connective Tissue Diseases
- Constipation
- Constriction
- Coronary Aneurysm
- Coronary Artery Disease
- Coronary Disease
- Coronary Restenosis
- Coronary Stenosis
- Coronary Vessel Anomalies
- Critical Illness
- Crohn Disease
- Cross Infection
- Cutaneous Fistula
- Cystic fibrosis
- Cytomegalovirus Retinitis
- Delayed Graft Function
- Dementia
- Dengue
- Dengue Hemorrhagic Fever
- Dental Plaque
- Depressive Disorder
- Dermatitis
- Dermatomyositis
- Diabetes
- Diabetes Complications
- Diabetes Mellitus

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- Diabetic Angiopathies
- Diabetic Nephropathies
- Diabetic Neuropathies
- Diabetic Retinopathy
- Diarrhea
- Discrimination (Psychology)
- Disease Models
- Disease Progression
- Disease Susceptibility
- Diseases in Twins
- Down Syndrome
- Drug Eruptions
- Drug Hypersensitivity
- Drug Toxicity
- Ductus Arteriosus
- Duodenal Diseases
- Duodenal Ulcer
- Dyslipidemias
- Eclampsia
- Eczema
- Edema
- Embryo Loss
- Encephalitis
- Encephalomyelitis
- Endometriosis
- Endotoxemia

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- Enterocolitis
- Epidermal Necrolysis
- Epilepsy
- Epstein-Barr Virus Infections
- Erythema
- Erythema Nodosum
- Esophageal Neoplasms
- Esophagitis
- Exanthema
- Exfoliation Syndrome
- Eye Diseases
- Fabry Disease
- Familial Mediterranean fever
- Fatigue
- Fatigue Syndrome
- Fatty Liver
- Femur Head Necrosis
- Fetal Diseases
- Fetal Growth Retardation
- Fetal Membranes
- Fever
- Fibrocystic Breast Disease
- Fibrosis
- Food Hypersensitivity
- Fractures
- Fungemia

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- Gallbladder Neoplasms
- Gastritis
- Gastroenteritis
- Gastroesophageal Reflux
- Gastrointestinal Diseases
- Gastrointestinal Neoplasms
- Genetic Diseases
- Genetic Predisposition to Disease
- Genomic Instability
- Gingival Hemorrhage
- Gingivitis
- Glaucoma
- Glomerulonephritis
- Glomerulosclerosis
- Glossitis
- Glucose Intolerance
- Glucose Metabolism Disorders
- Glucosephosphate Dehydrogenase Deficiency
- Gout
- Graft vs Host Disease
- Gram-Negative Bacterial Infections
- Granuloma
- Graves Disease
- Graves Ophthalmopathy
- Growth Disorders

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- Guillain-Barre Syndrome
- Hantavirus Pulmonary Syndrome
- Hashimoto Disease
- Head and Neck Neoplasms
- Hearing Loss
- Heart Block
- Heart Defects
- Heart Diseases
- Heart Valve Diseases
- Helicobacter Infections
- HELLP Syndrome
- Hematologic Diseases
- Hematologic Neoplasms
- Hemochromatosis
- Hemophilia A
- Hemorrhage
- Hemorrhagic Fever with Renal Syndrome
- Hepatitis
- Hepatitis B
- Hepatitis C
- Hereditary hemochromatosis
- HIV Infections
- HIV Seropositivity
- HIV-Associated Lipodystrophy Syndrome
- Hodgkin Disease
- HTLV-I Infections
- Hyperglycemia

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- Hyperlipidemias
- Hypersensitivity
- Hypertension
- Hypertriglyceridemia
- Hypertrophy
- Hyperuricemia
- Hypoxia-Ischemia
- Idiopathic Pulmonary Fibrosis
- IgA Deficiency
- Infant
- Infection
- Infectious Mononucleosis
- Infertility
- Inflammation
- Inflammatory Bowel Diseases
- Insulin Resistance
- Intervertebral Disk Displacement
- Intracranial Aneurysm
- Intracranial Arteriosclerosis
- Intracranial Arteriovenous Malformations
- Intracranial Hemorrhages
- Iridocyclitis
- Iron Overload
- Irritable Bowel Syndrome
- Kidney Diseases
- Kidney Failure

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- Kidney Neoplasms
- Laryngeal Neoplasms
- Leiomyoma
- Leishmaniasis
- Leprosy
- Leptospirosis
- Leukemia
- Leukemia-Lymphoma
- Lichen Planus
- Limb Deformities
- Lipodystrophy
- Liver Cirrhosis
- Liver Diseases
- Liver Failure
- Liver Neoplasms
- Low Tension Glaucoma
- Lung carcinoma
- Lung Diseases
- Lung Neoplasms
- Lupus Erythematosus
- Lupus Vasculitis
- Lymphadenitis
- Lymphatic Metastasis
- Lymphocytosis
- Lymphohistiocytosis
- Lymphoma

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- Lymphoproliferative Disorders
- Malaria
- Malignant melanoma
- Measles
- Melanoma
- Memory
- Memory Disorders
- Meningococcal Infections
- Mental Disorders
- Mental Processes
- Mental Recall
- Metabolic Syndrome X
- Metaplasia
- Migraine Disorders
- Migraine with Aura
- Migraine without Aura
- Mixed Connective Tissue Disease
- Mood Disorders
- Mouth Neoplasms
- Mucocutaneous Lymph Node Syndrome
- Multiple endocrine neoplasia
- Multiple Myeloma
- Multiple Organ Failure
- Multiple Sclerosis
- Multiple System Atrophy
- Multiple Trauma

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- Mumps
- Muscular Atrophy
- Muscular Diseases
- Musculoskeletal Diseases
- Myasthenia Gravis
- Mycobacterium avium-intracellulare Infection
- Mycobacterium Infections
- Myelodysplastic Syndromes
- Myocardial Infarction
- Myocardial Ischemia
- Myocarditis
- Myositis
- Narcolepsy
- NARP
- Nasal Polyps
- Nasopharyngeal Neoplasms
- Neoplasm Invasiveness
- Neoplasm Metastasis
- Neoplasm Recurrence
- Neoplasms
- Nephrosis
- Nephrotic Syndrome
- Neuroendocrine Tumors
- Neurofibromatosis
- Neuropsychological Tests

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- Neutropenia
- Nuchal Cord
- Obesity
- Obsessive-Compulsive Disorder
- Obstetric Labor
- Occupational Diseases
- Ocular Hypertension
- Oligospermia
- Ophthalmia
- Oral Submucous Fibrosis
- Oral Ulcer
- Osteoarthritis
- Osteolysis
- Osteomyelitis
- Osteoporosis
- Osteosarcoma
- Otitis Media
- Otorhinolaryngologic Neoplasms
- Ovarian cancer
- Ovarian Failure
- Ovarian Neoplasms
- Overweight
- Pain
- Pancreatic cancer
- Pancreatic Neoplasms
- Pancreatitis

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- Papillomavirus Infections
- Paracoccidioidomycosis
- Paraparesis
- Paraproteinemias
- Parasitemia
- Parasitic Diseases
- Paratyphoid Fever
- Parkinson disease
- Parvoviridae Infections
- Pelvic Pain
- Pemphigoid
- Pemphigus
- Peptic Ulcer
- Periapical Periodontitis
- Periodontal Attachment Loss
- Periodontal Diseases
- Periodontal Pocket
- Periodontitis
- Peripheral Vascular Diseases
- Pharyngeal Neoplasms
- Photosensitivity Disorders
- Picornaviridae Infections
- Pneumoconiosis
- Pneumonia
- Polycystic kidney disease
- Polycystic Ovary Syndrome

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- Polyendocrinopathies
- Polymyalgia Rheumatica
- Polymyositis
- Postoperative Complications
- Postoperative Hemorrhage
- Pouchitis
- Precancerous Conditions
- Prediabetic State
- Pre-Eclampsia
- Pregnancy Complications
- Premature Birth
- Prenatal Exposure Delayed Effects
- Prostate cancer
- Prostatic Hyperplasia
- Prostatic Neoplasms
- Prostatitis
- Prosthesis Failure
- Proteinuria
- Prurigo
- Pseudomonas Infections
- Psoriasis
- Psychiatric Status Rating Scales
- Psychometrics
- Psychomotor Performance
- Psychotic Disorders
- Pterygium

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- Puberty
- Puerperal Disorders
- Pulmonary Disease
- Pulmonary Emphysema
- Pulmonary Fibrosis
- Purpura
- Q Fever
- Radiation Injuries
- Radiation Pneumonitis
- Radius Fractures
- Rectal Fistula
- Rectal Neoplasms
- Recurrence
- Reflex Sympathetic Dystrophy
- Renal Artery Obstruction
- Renal Insufficiency
- Reperfusion Injury
- Respiratory Distress Syndrome
- Respiratory Hypersensitivity
- Respiratory Insufficiency
- Respiratory Sounds
- Respiratory Syncytial Virus Infections
- Respiratory Tract Diseases
- Respiratory Tract Infections
- Retinal Detachment
- Retinal Vein Occlusion

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- Retinopathy of Prematurity
- Retroperitoneal Fibrosis
- Rhabdomyolysis
- Rheumatic Diseases
- Rheumatic Fever
- Rheumatic Heart Disease
- Rheumatoid Nodule
- Rhinitis
- Rubella
- Rupture
- Sarcoidosis
- Sarcoma
- Schistosomiasis japonica
- Schistosomiasis mansoni
- Schizophrenia
- Schizophrenic Psychology
- Sciatica
- Scleroderma
- Seizures
- Seminoma
- Sepsis
- Severe Acute Respiratory Syndrome
- Severe combined immunodeficiency
- Shock
- Silicosis
- Sinusitis

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- Skin Diseases
- Skin Neoplasms
- Skin Ulcer
- Sleep Apnea
- Sleep Apnea Syndromes
- Sleep Deprivation
- Sleep Disorders
- Small Cell Lung Carcinoma
- Spondylarthritis
- Spondylarthropathies
- Spondylitis
- Staphylococcal Infections
- Stevens-Johnson Syndrome
- Stomach Diseases
- Stomach Neoplasms
- Stomach Ulcer
- Stomatitis
- Streptococcal Infections
- Stress
- Stroke
- Subarachnoid Hemorrhage
- Substance Withdrawal Syndrome
- Substance-Related Disorders
- Sudden Infant Death
- Surgical Wound Infection
- Syndrome

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- Systemic Inflammatory Response Syndrome
- Systemic Vasculitis
- Temporal Arteritis
- Tension-Type Headache
- Testicular Neoplasms
- Thalassemia
- Thoracic Neoplasms
- Thrombophilia
- Thrombosis
- Thymoma
- Thymus Neoplasms
- Thyroid Diseases
- Thyroiditis
- Tobacco Use Disorder
- Tooth Diseases
- Tooth Loss
- Trachoma
- Translocation
- Trypanosomiasis
- Tuberculosis
- Tumor Virus Infections
- Typhoid Fever
- Urinary Bladder Neoplasms
- Urinary Calculi
- Urinary Tract Infections
- Urticaria

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- Uterine Cervical Dysplasia
- Uterine Cervical Incompetence
- Uterine Cervical Neoplasms
- Uterine Neoplasms
- Uveitis
- Vaginal Diseases
- Vaginosis
- Vascular Diseases
- Vasculitis
- Venous Thrombosis
- Ventricular Dysfunction
- Verbal Learning
- Vesico-Ureteral Reflux
- Viremia
- Vitiligo
- Vitreoretinopathy
- Waldenstrom Macroglobulinemia
- Wegener Granulomatosis

- Weight Gain
- Weight Loss
- Werner syndrome
- Wounds
- Wounds and Injuries

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