



OFF THE SHELF BIOLOGICS CATALOG

ORF BIOLOGICS
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Recombinant Proteins for Reliable
and Reproducible Research



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WELCOME TO ORF BIOLOGICS

At ORF Biologics, we are dedicated to empowering researchers with tools that elevate the precision, reproducibility, and impact of their work. Our mission is to deliver reliable, high-quality recombinant proteins that accelerate discovery and enable innovation across life sciences. Whether you are exploring fundamental biological mechanisms or developing next-generation therapeutics, our off-the-shelf biologics are designed to support your research with consistency, purity, and verified performance.

Through years of scientific experience and technological advancement, we have built a trusted reputation for producing biologics that meet the highest standards of purity, activity, and reproducibility. Every product we make reflects our commitment to rigorous validation, meticulous quality control, and genuine partnership with the scientific community.



+ OUR EXPERTISE

Our expertise lies in the design, expression, and purification of recombinant proteins, including cytokines, growth factors, antibodies, and other biologically active molecules. Using optimized expression systems including mammalian (CHO and HEK), E. coli, Bacillus Subtilis and Pichia, we ensure accurate folding, glycosylation, and post-translational modification for every protein we produce.

Our state-of-the-art production pipeline integrates biochemical analysis, functional testing, and stability profiling to deliver products that perform consistently from experiment to experiment. This combination of molecular precision and process control makes ORF Biologics a trusted partner for researchers seeking reliable proteins for cell culture, signaling assays, regenerative medicine, and immunological studies.

+ APPLICATIONS ACROSS RESEARCH

Our recombinant proteins are widely used across diverse fields of biology. From the study of cellular signaling pathways to the development of biotherapeutics, our biologics support critical applications such as:

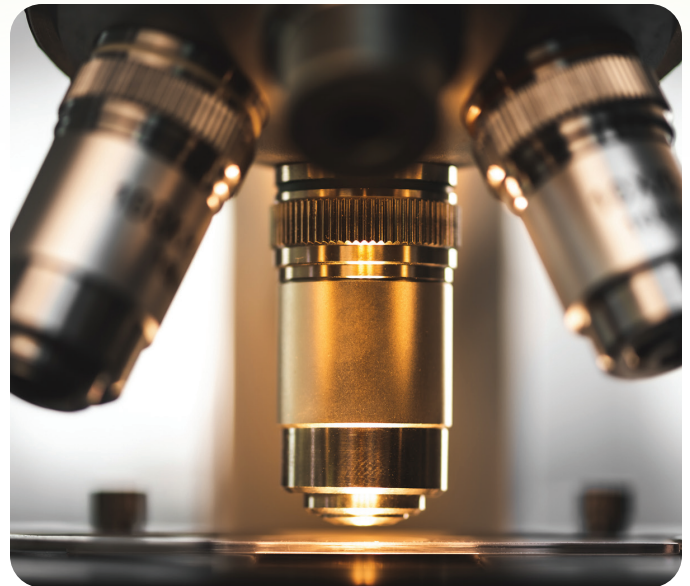
- + Cell proliferation and differentiation studies
- + Immune system modeling and cytokine response assays
- + Angiogenesis and wound-healing research
- + Cancer biology and tumor microenvironment analysis
- + Stem cell maintenance and directed differentiation
- + Regenerative medicine and tissue engineering

Each protein is fully characterized for activity in validated bioassays, ensuring that your experiments begin with confidence in the materials you use.

+ COMMITMENT TO QUALITY

Every ORF Biologics product undergoes rigorous quality assurance testing at multiple stages of production. We verify identity and purity through SDS-PAGE, confirm bioactivity using appropriate cell-based assays and endotoxin levels are carefully monitored.

Our lot-to-lot consistency protocols ensure that every batch meets the same stringent specifications, minimizing experimental variability and maximizing reproducibility. From raw material sourcing to final lyophilization, every step of our process is designed to deliver trusted, publication-ready reagents that you can depend on.



+ SUPPORTING YOUR SCIENCE

We understand that research demands flexibility. That's why we offer custom formulations, bulk quantities, and collaborative development options for laboratories with specialized requirements. Our technical support team, composed of experienced scientists, is always available to provide assistance with product selection, assay design, and troubleshooting.

At ORF Biologics, we view every customer relationship as a partnership. Our goal is not just to supply reagents, but to contribute to your success by providing reliable, well-characterized tools that let you focus on what truly matters: making discoveries that advance human health and knowledge.

+ OUR VISION

We envision a future where scientific progress is driven by accessibility, quality, and integrity in research tools. By combining innovation in protein engineering with unwavering quality standards, ORF Biologics strives to make high-performance biologics available to every scientist, everywhere.

Through our dedication to precision, transparency, and scientific collaboration, we aim to empower researchers to achieve breakthroughs that advance scientific discoveries. When you choose ORF Biologics, you choose a partner committed to building a foundation of reliability in every experiment.



RECOMBINANT PROTEINS

Recombinant Human Activin A

Size / Catalog Number

10 µg: ORF.GF.ACTIVINA-10 50 µg: ORF.GF.ACTIVINA-50 100 µg: ORF.GF.ACTIVINA-100
500 µg: ORF.GF.ACTIVINA-500 1000 µg: ORF.GF.ACTIVINA-1000

Activin A is a key member of the TGF-β superfamily, essential for proper development and produced by various cell types. It functions as a bioactive disulfide-linked homodimer, binding to Activin receptors (RIA, RIB, RIIA, RIIIB) to activate SMAD signaling pathways. This signaling regulates processes such as stem cell maintenance, differentiation, B-cell proliferation, wound healing, metabolism, and gonadal development.

It is synthesized as a precursor, then cleaved to form a mature A chain, which dimerizes to become active. Its activity is tightly regulated by decoy receptors, secreted inhibitors (e.g., Follistatin), and alternative subunit incorporation. In research, recombinant Activin A is widely used to support stem cell proliferation and drive differentiation into endodermal and pancreatic lineages.

Product Specs

Species:	Human	Molecular Weight:	13 kDa (Expected)
Amino Acid Sequence:	GLECDGKVNI CCKKQFFVSF KDIGWNDWII APSGYHANYC EGECPHSIAG TSGSSLSFHS TVINHYRMRG HSPFANKKSC CVPTKLRPMS MLYYDDGQNI IKKDIQNMIV EECGCS	Purity:	> 95% by SDS-PAGE gel
		Endotoxin Concentration:	< 1 EU/µg
		Biologically Active:	Yes
		Formulation:	Lyophilized

Applications

- + Mesoderm induction in stem cells
- + Endoderm and pancreatic differentiation
- + Reproductive biology studies
- + Tumor microenvironment modeling
- + Neural development



Recombinant Human Brain-Derived Neurotrophic Factor (BDNF)

Size / Catalog Number

10 µg: ORF.GF.BDNF-10 50 µg: ORF.GF.BDNF-50 100 µg: ORF.GF.BDNF-100
500 µg: ORF.GF.BDNF-500 1000 µg: ORF.GF.BDNF-1000

Brain-Derived Neurotrophic Factor (BDNF) is a member of the neurotrophin family, essential for the development, survival, and plasticity of neurons in the central and peripheral nervous systems. It binds primarily to the TrkB receptor, triggering intracellular signaling cascades such as MAPK, PI3K, and PLCγ pathways, which regulate neuronal differentiation, synaptic growth, and long-term potentiation—key mechanisms underlying learning and memory.

BDNF is initially produced as a precursor protein (proBDNF), which is proteolytically cleaved to generate mature BDNF. Both forms have distinct biological functions: mature BDNF promotes survival and synaptic strengthening, while proBDNF can induce apoptosis or synaptic pruning through p75NTR signaling. BDNF expression is tightly regulated by neuronal activity and is influenced by environmental stimuli such as exercise and stress. Recombinant BDNF is commonly used in vitro and in vivo to study neural development, neurodegenerative diseases, psychiatric disorders, and to support the survival and growth of neurons in culture.

Product Specs

Species:	Human	Molecular Weight:	13.4 kDa (Expected)
Amino Acid Sequence:	HSDPARRGEL SVCDSISEWV TAADKKTAVD MSGGTVTVLE KVPVSKGQLK QYFYETKCNP MGYTKEGCRG IDKRHWNSQC RTTQSYVRAL TMSKKRIGW RFRIDTSCV CTLTIKRGR	Purity:	> 95% by SDS-PAGE gel
		Endotoxin Concentration:	< 1 EU/µg
		Biologically Active:	Yes
		Formulation:	Lyophilized

Applications

- + Neuronal differentiation and outgrowth assays
- + Neural stem cell maintenance
- + Neuroprotection in in vitro or in vivo models
- + Screening of neuroactive compounds
- + Research in neuroscience applications such as depression, Alzheimer's disease, and TBI



Recombinant Human Fibroblast Growth Factor Basic (FGF-2)

Size / Catalog Number

10 µg: ORF.GF.FGF2-10 50 µg: ORF.GF.FGF2-50 100 µg: ORF.GF.FGF2-100
500 µg: ORF.GF.FGF2-500 1000 µg: ORF.GF.FGF2-1000

Fibroblast Growth Factor 2 (FGF-2), also known as basic FGF, is a potent mitogenic and angiogenic cytokine that plays a crucial role in cell proliferation, survival, and differentiation across various tissue types. It exerts its biological effects by binding to FGF receptors (FGFRs) in the presence of heparan sulfate proteoglycans, activating downstream signaling pathways such as MAPK, PI3K/AKT, and PLC γ . These pathways regulate diverse cellular processes including stem cell self-renewal, neurogenesis, and vascular development.

FGF-2 is expressed in a wide range of tissues and is essential during embryogenesis for mesoderm induction, neural patterning, and organogenesis. In adult tissues, it supports wound healing, angiogenesis, and tissue regeneration. Due to its broad bioactivity, recombinant FGF-2 is widely used *in vitro* to maintain pluripotent stem cells, promote proliferation of mesenchymal and neural progenitors, and support endothelial cell expansion. It is also a critical component in tissue engineering, cancer biology, and regenerative medicine research.

Product Specs

Species:	Human	Molecular Weight:	17.1 kDa (Expected)
Amino Acid Sequence:	AAGSITLPA LPEDGGSGAF PPGHFKDKPKR LYCKNGGFFL RIHPDGRVDG VREKSDPHIK LQLQAEERGV VSIKGVCANR YLAMKEDGRL LASKCVTDEC FFFERLESNN YNTYRSRKYT SWYVALKRTG QYKLGSKTGP GQKAILFLPM SAKS	Purity:	> 95% by SDS-PAGE gel
		Endotoxin Concentration:	< 1 EU/µg
		Biologically Active:	Yes
		Formulation:	Lyophilized

Applications

- Maintenance and expansion of iPSCs in defined, feeder-free culture systems
- Pluripotent and multipotent stem cell proliferation, including hESCs and MSCs
- Neural stem cell growth and differentiation in developmental and disease models
- Angiogenesis and vascular biology research, including endothelial cell expansion
- Wound healing and tissue regeneration studies
- Cancer biology investigations, particularly in tumor growth and angiogenesis
- Mesodermal and ectodermal lineage specification in differentiation protocols
- Tissue engineering and biomaterial development for regenerative applications

Recombinant Human Noggin

Size / Catalog Number

10 µg: ORF.GF.NOGGIN-10 50 µg: ORF.GF.NOGGIN-50 100 µg: ORF.GF.NOGGIN-100
500 µg: ORF.GF.NOGGIN-500 1000 µg: ORF.GF.NOGGIN-1000

Noggin is a secreted glycoprotein that plays a critical role in embryonic development by modulating bone morphogenetic protein (BMP) signaling. It binds directly to BMPs such as BMP2, BMP4, and BMP7, preventing them from interacting with their receptors and thereby inhibiting downstream SMAD signaling. This antagonism is essential for proper patterning of the neural tube, somites, and other tissues, as well as for regulating skeletal development and joint formation.

Noggin is expressed in the notochord, neural plate, and other key developmental regions, where it contributes to the balance of BMP activity required for cell fate decisions. Its biological activity is tightly controlled *in vivo* by spatial and temporal expression patterns and interactions with extracellular matrix components. In experimental models, recombinant Noggin is widely used to promote neural induction, maintain pluripotency in stem cell cultures, and suppress mesodermal and endodermal differentiation, making it a vital tool in developmental biology and regenerative medicine research.



Product Specs

Species:	Human	Molecular Weight:	23 kDa (Expected)
Amino Acid Sequence:	QHYLHIRPAP SDNLPLVDLI EHPDPIFDPK EKDLNETLLR SLLGGHYDPG FMATSPPEDR PGGGGGAAGG AEDLAELDQL LRQRPSGAMP SEIKGLEFSE GLAQGKKQRL SKLRRKLQM WLWSQTFPCV LYAWNDLGSR FWPRYVKVGS CFSKRSCSVP EGMVCKPSKS VHLTCLRWRRC QRRGGQRCGW IPIQYPISE CKCSC	Purity:	> 95% by SDS-PAGE gel
		Endotoxin Concentration:	< 1 EU/ μ g
		Biologically Active:	Yes
		Formulation:	Lyophilized

Applications

- + Neural induction in stem cell differentiation
- + Pluripotency maintenance in hPSC cultures
- + Skeletal and cartilage development studies
- + Embryonic patterning and early morphogenesis
- + Organoid and organogenesis models
- + BMP pathway regulation in cancer research
- + Tissue repair and fibrosis in regenerative medicine
- + BMP signaling modulation in developmental studies

Recombinant Human Platelet Derived Growth Factor $\beta\beta$ (PDGF- $\beta\beta$):

Size / Catalog Number

10 μ g: ORF.GF.PDGFBB-10	50 μ g: ORF.GF.PDGFBB-50	100 μ g: ORF.GF.PDGFBB-100
500 μ g: ORF.GF.PDGFBB-500	1000 μ g: ORF.GF.PDGFBB-1000	

Platelet-Derived Growth Factor- $\beta\beta$ (PDGF- $\beta\beta$) is a biologically active homodimeric isoform of the PDGF family, playing a critical role in cell proliferation, migration, and tissue repair. It functions by binding to PDGF receptors (PDGFR- α and PDGFR- β), triggering receptor dimerization and activation of downstream signaling pathways such as MAPK, PI3K/AKT, and JAK/STAT. These pathways regulate the behavior of mesenchymal cells, smooth muscle cells, fibroblasts, and pericytes, contributing to processes like angiogenesis, wound healing, and tissue remodeling.

PDGF- $\beta\beta$ is highly expressed during embryogenesis and in response to tissue damage, where it supports vascular stabilization, extracellular matrix formation, and recruitment of supportive cells to nascent blood vessels. In adult tissues, it continues to influence repair and fibrosis pathways. Recombinant PDGF- $\beta\beta$ is widely used in vitro to promote proliferation and migration of mesenchymal and vascular cells, stimulate tissue regeneration, and model fibrotic and oncogenic signaling. It is a powerful tool in regenerative medicine, cancer biology, and biomaterial-based therapeutic development.



Product Specs

Species:	Human	Molecular Weight:	12.3 kDa (Expected)
Amino Acid Sequence:	SLGSLTIAEP AMIAECKTRT EVFEISRRLI DRTNANFLVW PPCVEVQRCS GCCNNRNVQC RPTQVQLRPV QVRKIEIVRK KPIFKKATVT LEDHLACKCE TVAAARPVT	Purity:	> 95% by SDS-PAGE gel
		Endotoxin Concentration:	< 1 EU/ μ g
		Biologically Active:	Yes
		Formulation:	Lyophilized

Applications

- + Mesenchymal cell proliferation and migration studies
- + Fibroblast activation and extracellular matrix production
- + Angiogenesis and vascular stabilization research
- + Wound healing and tissue regeneration models
- + Smooth muscle cell biology and vascular remodeling studies
- + Pericyte recruitment and vessel maturation in co-culture systems
- + Fibrosis modeling in liver, lung, kidney, and cardiac tissues
- + Cancer research, including tumor stroma interactions and PDGF signaling
- + Tissue engineering and biomaterial integration studies

Recombinant Human Receptor Activator of Nuclear Factor- κ B Ligand (RANKL)

Size / Catalog Number

10 μ g: ORF.GF.RANKL-10 50 μ g: ORF.GF.RANKL-50 100 μ g: ORF.GF.RANKL-100
500 μ g: ORF.GF.RANKL-500 1000 μ g: ORF.GF.RANKL-1000

Receptor Activator of Nuclear Factor Kappa-B Ligand (RANKL) is a key member of the tumor necrosis factor (TNF) superfamily, known for its critical role in regulating cell differentiation, proliferation, and survival. RANKL exists as a type II homotrimeric transmembrane protein and can be found in both membrane-bound and soluble forms.

RANKL specifically binds to its receptor, RANK (Receptor Activator of Nuclear Factor Kappa-B), to initiate downstream signaling pathways, including the AKT pathway, which governs cell survival and function. The decoy receptor osteoprotegerin (OPG) also interacts with RANKL, competitively inhibiting its binding to RANK and thereby modulating RANKL activity.

Functionally, RANKL plays a central role in osteoclast differentiation and activation, contributing to bone remodeling and resorption. Beyond the skeletal system, RANKL also participates in immune regulation, including T cell activation and broader immune signaling processes.

ORF Biologics' recombinant RANKL is produced to deliver high purity, biological activity, and batch-to-batch consistency, making it ideal for research applications in bone metabolism, immune cell regulation, and TNF superfamily signaling.

Product Specs

Species:	Human	Molecular Weight:	19.7 kDa (expected)
Amino Acid Sequence:	EKAMVDGSWL DLAKRSKLEA QPFAHLTINA TDIPSGSHKV SLSSWYHDRG WAKISNMTFS NGKLIVNQDG FYYLYANICF RHHETSGDLA TEYLQLMVYV TKTSIKIPSS HTLMKGGSTK YWSGNSEFHF YSINVGGFFK LRSGEEISIE VSNPSLLDPD QDATYFGAFK VRDID	Purity:	> 95% by SDS-PAGE gel
		Endotoxin Concentration:	< 1 EU/ μ g
		Biologically Active:	Yes
		Formulation:	Lyophilized

Applications

- + Osteoclast Differentiation – Induces osteoclast formation and activity from precursor cells in vitro
- + Bone Metabolism Research – Supports studies of bone remodeling, osteoporosis, and related disorders
- + Immune Regulation – Enables investigation of RANKL-mediated T cell activation and dendritic cell survival
- + Cancer Research – Used to model RANKL-driven bone metastasis and tumor-bone interactions
- + Drug Discovery – Suitable for screening and evaluating RANKL inhibitors or therapeutic candidates

Recombinant Human Receptor Activator of Nuclear Factor - κ B Ligand, His Tag

(RANKL, His Tag)

Size / Catalog Number

10 μ g: ORF.GF.RANKLH-10 50 μ g: ORF.GF.RANKLH-50 100 μ g: ORF.GF.RANKLH-100
500 μ g: ORF.GF.RANKLH-500 1000 μ g: ORF.GF.RANKLH-1000

Receptor Activator of Nuclear Factor Kappa-B Ligand (RANKL) is a key TNF superfamily cytokine essential for osteoclast differentiation, bone remodeling, and immune regulation. RANKL functions as a soluble or membrane-associated homotrimer that binds the RANK receptor to activate downstream pathways, including AKT-mediated survival signaling. Its activity is naturally modulated by the decoy receptor OPG.

ORF Biologics' recombinant RANKL with a C-terminal His tag is engineered for efficient affinity purification, improved handling, and straightforward detection in biochemical assays. This biologically active protein is produced to deliver high purity, structural integrity, and reliable batch-to-batch performance. It is ideal for studies involving osteoclastogenesis, bone biology, immune signaling, and TNF superfamily receptor-ligand interactions.



Product Specs

Species: Human
Amino Acid Sequence: EKAMVDGSWL DLAKRSKLEA QPFAHLTINA TDIPSGSHKV
SLSSWYHDRG WAKISNMTFS NGKLIVNQDG FYYLYANICF
RHHETSGDLA TEYLQLMVYV TKTSIKIPSS HTLMKGGSTK
YWSGNSEFHF YSINVGGFVK LRSGEISIE VSNPSLLDPD
QDATYFGAFK VRDIDHHHHH H

Molecular Weight: 20.4 kDa (Expected)
Purity: > 95% by SDS-PAGE gel
Endotoxin Concentration: < 1 EU/ μ g
Biologically Active: Yes
Formulation: Liquid

Applications

- + Osteoclast Differentiation Assays
- + Supports in-vitro induction, maturation, and functional analysis of osteoclasts from primary cells or cell lines
- + RANK-RANKL Signaling Studies
- + Enables investigation of downstream pathways such as NF- κ B, AKT, and MAPK in bone, immune, and cancer biology models
- + Protein-Protein Interaction and Binding Assays
- + Ideal for studying interactions with RANK or OPG using ELISA, BLI/SPR, pull-down assays, or Ni-NTA-based immobilization
- + Immune Cell Activation and Differentiation Models
- + Facilitates research on T cell activation, dendritic cell function, lymph node development, and broader TNF superfamily signaling

Recombinant Human Transforming Growth Factor Beta 1 (TGF- β 1)

Size / Catalog Number

10 μ g: ORF.GF.TGFBI-10 50 μ g: ORF.GF.TGFBI-50 100 μ g: ORF.GF.TGFBI-100
500 μ g: ORF.GF.TGFBI-500 1000 μ g: ORF.GF.TGFBI-1000

Transforming Growth Factor Beta 1 (TGF- β 1) is a multifunctional cytokine that plays a central role in regulating cell growth, differentiation, immune response, and extracellular matrix production. It signals primarily through type I and type II TGF- β receptors, leading to activation of SMAD-dependent and SMAD-independent pathways, which control diverse cellular processes including epithelial-mesenchymal transition (EMT), fibrosis, and immune modulation.

TGF- β 1 is synthesized as a latent precursor complex consisting of a propeptide (LAP) and the mature cytokine, which requires activation through proteolytic cleavage or conformational changes. Once active, TGF- β 1 orchestrates tissue homeostasis and repair and is essential for embryonic development and immune tolerance. Dysregulation of TGF- β 1 signaling is implicated in various diseases, including cancer, fibrosis, and autoimmune disorders. Recombinant TGF- β 1 is widely used in vitro to study EMT, stem cell differentiation, wound healing models, and immune cell regulation, making it a key tool in both basic and translational biomedical research.



Product Specs

Species: Human
Amino Acid Sequence: ALDTNYCFSS TEKNCCVRQL YIDFRKDLGW KWIHEPKGYH
ANFCLGPCPY IWSLDTQYSK VLALYNQHNP GASAAPCCVP
QALEPLPIVY YVGRKPKVEQ LSNMIVRSCK CS

Molecular Weight: 12.8 kDa (Expected)
Purity: > 95% by SDS-PAGE gel
Endotoxin Concentration: < 1 EU/ μ g
Biologically Active: Yes
Formulation: Lyophilized

Applications

- + Epithelial-Mesenchymal Transition (EMT) modeling in cancer and developmental studies
- + Fibrosis research in liver, lung, kidney, and cardiac tissues
- + Stem cell differentiation, particularly into mesodermal and endodermal lineages
- + Immune regulation and T cell differentiation (e.g., Treg induction)
- + Wound healing and tissue repair models
- + Tumor microenvironment studies, including stromal remodeling and immune evasion
- + Organogenesis and morphogenesis during early development
- + Extracellular matrix (ECM) production and remodeling in regenerative biology
- + Maintenance and expansion of iPSCs in defined culture systems

Recombinant Human Vascular Endothelial Growth Factor 165 (VEGF-165):

Size / Catalog Number

10 µg: ORF.GF.VEGF165-10 50 µg: ORF.GF.VEGF165-50 100 µg: ORF.GF.VEGF165-100
500 µg: ORF.GF.VEGF165-500 1000 µg: ORF.GF.VEGF165-1000

Vascular Endothelial Growth Factor 165 (VEGF 165) is a major isoform of the VEGF-A family and a key mediator of angiogenesis, vasculogenesis, and endothelial cell function. It exerts its biological activity by binding to VEGF receptors (VEGFR-1 and VEGFR-2) in the presence of co-receptors such as neuropilin-1, initiating downstream signaling cascades including the MAPK, PI3K/AKT, and PLC β pathways. These pathways regulate endothelial cell proliferation, migration, survival, and new blood vessel formation.

VEGF 165 is abundantly expressed during embryonic development and in response to tissue injury or hypoxia, where it plays a vital role in establishing and remodeling the vascular system. In adult tissues, it continues to support angiogenesis, vascular permeability, and tissue regeneration. Recombinant VEGF 165 is widely used in vitro for endothelial cell culture, angiogenesis assays, and tissue engineering. It is also a valuable tool in cancer biology, wound healing studies, and the development of pro- and anti-angiogenic therapeutics in regenerative medicine and disease modeling.



Product Specs

Species:	Human	Molecular Weight:	23 kDa (Expected)
Amino Acid Sequence:	QHYLHIRPAP SDNLPLVDLI EHPDPFIDPK EKDLNETLLR SLLGGHYDPG FMATSPPEDR PGGGGGAAGG AEDLAELDQL LRQRPSGAMP SEIKGLEFSE GLAQGKKQRL SKLRRKLQM WLWSQTFCPV LYAWNDLGSR FWPRYVKVGS CFSKRSCSVP EGMVCKPSKS VHLTVLRWRC QRRGGQRCGW IPIQYPIISE CKCSC	Purity:	> 95% by SDS-PAGE gel
		Endotoxin Concentration:	< 1 EU/µg
		Biologically Active:	Yes
		Formulation:	Lyophilized

Applications

- ✦ Endothelial cell proliferation and migration assays
- ✦ Angiogenesis studies in vitro and in vivo, including tube formation and sprouting models
- ✦ Vasculogenesis and vascular remodeling during development and regeneration
- ✦ Wound healing and tissue repair research
- ✦ Cancer biology, including tumor angiogenesis and metastasis models
- ✦ Hypoxia response and ischemia models for cardiovascular research
- ✦ Tissue engineering and biomaterial vascularization
- ✦ Retinal and ocular disease studies involving neovascularization

Recombinant Human Wnt-3a

Size / Catalog Number

10 µg: ORF.GF.WNT3A-10 50 µg: ORF.GF.WNT3A-50 100 µg: ORF.GF.WNT3A-100
500 µg: ORF.GF.WNT3A-500 1000 µg: ORF.GF.WNT3A-1000

Wnt-3a is a key member of the Wnt family of secreted glycoproteins that regulate essential processes in embryonic development, tissue regeneration, and stem cell maintenance. Wnt-3a activates the canonical Wnt/ β -catenin signaling pathway by binding to Frizzled and LRP5/6 receptors, leading to β -catenin stabilization and transcriptional activation of Wnt target genes involved in cell proliferation, differentiation, and fate determination.

Wnt-3a is produced as a lipid-modified precursor and undergoes post-translational modifications critical for its secretion and bioactivity. It plays a vital role in anterior-posterior patterning, neural crest development, and limb formation. In adult tissues, Wnt-3a continues to influence cell renewal and homeostasis, particularly in the intestinal epithelium and hematopoietic systems. Recombinant Wnt-3a is widely used in vitro to maintain pluripotency in stem cells, drive mesodermal and endodermal lineage differentiation, and study cancer, developmental biology, and tissue engineering applications.



Product Specs

Species: Human
Amino Acid Sequence: APLGYFLLL CSLKQALGSY PIWWSLAVGP QYSSLGSQPI
LCASIPGLVP KQLRFCRNYV EIMPSVAEGI KIGIQECQHQ
FRGRRWNCTT VHDSLAIFGP VLDKATRESA FVHAIASAGV
AFAVTRSCAE GTAAICGCSS RHQGSFGKGW KWGGCSEIDIE
FGGMVSREFA DARENRPDAR SAMNRHNNEA GRQAIASHMH
LKCKCHGLSG SCEVKTCWWS QPDFRAIGDF LKDKYDSASE
MVVEKHRESR GWVETLRPRY TYFKVPTERD LVYYEASPNF
CEPNPETGSF GTRDRTCNVS SHGIDGCDLL CCGRGHNARA
ERRREKRCV FHWFCCYVSCQ ECTRVYDVHT CK

Molecular Weight: 37.4 kDa
Purity: > 95% by SDS-PAGE gel
Endotoxin Concentration: < 1 EU/ μ g
Biologically Active: Yes
Formulation: Lyophilized

Applications

- ✦ **Pluripotent Stem Cell Maintenance:** Supports self-renewal and maintenance of human embryonic and induced pluripotent stem cells via activation of canonical Wnt/ β -catenin signaling.
- ✦ **Directed Differentiation:** Promotes mesoderm and endoderm lineage specification during early-stage differentiation protocols in stem cell cultures.
- ✦ **Organoid Development:** Essential for the growth and maturation of organoids, including intestinal, hepatic, and neural models, by mimicking in vivo Wnt signaling environments.
- ✦ **Cancer and Developmental Biology Studies:** Used to investigate Wnt pathway dysregulation in tumor progression and to model signaling pathways involved in embryogenesis and tissue patterning. Tissue repair and fibrosis in regenerative medicine. BMP signaling modulation in developmental studies.



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