

Excellence in Native Human Proteins For Superior Cell Culture Performance

When successful cell growth and proliferation is critical to your business, every component matters. For four decades, Athens Research & Technology, Inc. ("Athens") has been the trusted source of native human proteins that help media manufacturers deliver consistent, superior results to their customers.



The Athens Advantage

Our strong industry reputation is a result of helping customers meet their challenges year after year and order after order.

- **Purity & Consistency** Our rigorous isolation and purification processes deliver native human proteins with superior batch-to-batch consistency. Each lot is tested to ensure it meets the high standards of purity and biological activity that we are known for.
- **Decades of Protein Expertise** Founded by biochemists; Athens brings deep scientific understanding to protein production. Our team doesn't just manufacture proteins – we understand how they function in your applications and can help optimize their use in your specific media formulations.
- **Advanced Technical Support** Our technical support team includes Ph.D. scientists with extensive experience in cell culture applications. We're not just a manufacturer and supplier, we're your partner in solving complex biological challenges.

We understand the Challenges You Face

In cell culture media development:

- **Batch-to-batch variability**
can compromise months of research
- **Inconsistent protein activity levels**
lead to unreliable results
- **Supply chain interruptions**
disrupt production schedules
- **Technical challenges**
require rapid, expert support

Experience the Athens Difference

Join the leading biopharmaceutical and research organizations that trust Athens for their critical protein needs. Contact us today to discuss your specific requirements and learn how our proteins can enhance your cell culture media performance. Athens native proteins are manufactured to provide a consistent high-quality bioactive product, suitable for a variety of applications such as cell proliferation and cell functional studies.

Culture media Growth Supplements

- Albumin
- Catalase
- Inter Alpha Inhibitor Protein
- Superoxide Dismutase (SOD)
- Vitronectin

Lipoproteins

- High Density (HDL)
- Low Density (LDL)
- Very Low Density (VLDL)

Transferrin

- ApoTransferrin
- Holo - Transferrin
- Partially Iron Saturated Transferrin

Proteins used to Study Cellular Function

- Alpha 1 Antitrypsin
- Alpha 2 HS Glycoprotein
- Alpha 2 Macroglobulin
- Apolipoproteins
- Ceruloplasmin
- Haptoglobin
- Hemopexin
- GC Globulin
- Lactoferrin
- Lipoprotein a [Lp(a)]
- Low Density Lipoprotein - Oxidized LDL

Academic research highlights the integral role that proteins from Athens can play in cell culture studies. Transferrin, produced by Athens, has been used as a key supplemental growth factor in chemically defined media used for cell line development related to biotherapeutics production^{1,2}. Athens' Vitronectin has been used as a cell adhesion protein for research related to cancer and bleeding disorders^{3,4}. Athens lipoproteins, such as Lp(a)⁵ & ox-LDL⁶, have been used as media supplements to study their effects on cardiovascular disease at the cellular level. Many of Athens' other proteins, such as GC Globulin⁸, Hemopexin⁷, Haptoglobin⁹, and Ceruloplasmin⁹, have been used as components to study cellular function related to neurogenesis⁷, kidney function in a microgravity environment⁸, and cellular uptake and degradation of plasma proteins⁹.



Contact Us Today

Visit us at www.athensresearch.com to learn more about our product offerings or speak to our experts to see how Athens Research and Technology can support your cell culture media solutions.



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- 1 Zhang, et al. Generation of Functional Brown Adipocytes from Human Pluripotent Stem Cells via Progression through a Paraxial Mesoderm State. *Cell Stem Cell* 27, 784–797. November 5, 2020. <https://doi.org/10.1016/j.stem.2020.07.013> University of Georgia, USA
- 2 Singh, et al. Human beige adipocytes for drug discovery and cell therapy in metabolic diseases. *NATURE COMMUNICATIONS* (2020) 11:2758. <https://doi.org/10.1038/s41467-020-16340-3> University of Georgia, USA
- 3 Wihadmadayati, et al. Immunisation against $\alpha\text{IIb}\beta_3$ and $\alpha\text{v}\beta_3$ in a type 1 variant of Glanzmann's thrombasthenia caused by a missense mutation Gly540Asp on β_3 . *Thromb Haemost* 2016; 116(02): 262–271 DOI: 10.1160/TH15-12-0982 Justus-Liebig University Giessen, Germany
- 4 Wihadmadayati, et al. Ethanolic extract *Ocimum sanctum* Linn. induces an apoptosis in human lung adenocarcinoma (A549) cells. *Heliyon* 5 (2019) e02772. <https://doi.org/10.1016/j.heliyon.2019.e02772>. Universitas Gadjah Mada, Indonesia
- 5 Yu, et al. Pathological significance of lipoprotein(a) in aortic valve stenosis. *Atherosclerosis* 272 (2018) 168e174. <https://doi.org/10.1016/j.atherosclerosis.2018.03.025> McGill University, Canada
- 6 Kim, et al. P62 Links the Autophagy Pathway and the Ubiquitin–Proteasome System in Endothelial Cells during Atherosclerosis. *Int. J. Mol. Sci.* 2021,22, 7791. <https://doi.org/10.3390/ijms22157791> Kyonggi University, South Korea
- 7 Zhu, et al. Hemopexin is required for adult neurogenesis in the subventricular zone/ olfactory bulb pathway. *Cell Death and Disease* (2018) 9:268. DOI: 10.1038/s41419-018-0328-0 Second Military Medical University, China
- 8 Lidberg, et al. Modeling cellular responses to serum and vitamin D in microgravity using a human kidney microphysiological system. *npj Microgravity* 10, 75 (2024). <https://doi.org/10.1038/s41526-024-00415-2> University of Washington, USA
- 9 hao, et al. HK2 Proximal Tubule Epithelial Cells Synthesize and Secrete Plasma Proteins Predominantly Through the Apical Surface. *J. Cell. Biochem.* 118: 924–933, 2017. <https://doi.org/10.1002/jcb.25786> Veterans Affairs Greater Los Angeles Healthcare System, USA



INVITRO DIAGNOSTICS

Delivering High-Quality Native Proteins to Drive Innovation in IVD

We are dedicated to providing the In Vitro Diagnostic (IVD) industry and researchers with premium-grade, highly pure, and highly active native proteins. Our rigorous manufacturing processes and commitment to quality assurance enable our clients to develop reliable, accurate diagnostic tools for today's healthcare demands.



Why Choose Athens?

- 1 Proven Success in Diagnostic Applications**

Athens is a trusted provider of high-purity reagents for essential diagnostic applications, including Lipoprotein and Globulin panels, Hemoglobin A1c standards, and targeted disease tests for cardiovascular, pulmonary, and autoimmune disorders. Our proteins are carefully manufactured to ensure the accuracy and sensitivity essential to advanced diagnostics.
- 2 Superior Purity & Activity**

Our native proteins are produced to achieve exceptional levels of purity and activity, enhancing performance in critical diagnostic applications. Each product is rigorously tested to meet the stringent quality standards our clients depend on.
- 3 Reliable Sourcing & Consistent Supply**

With a dependable supply chain and a commitment to reliable delivery, Athens ensures that IVD manufacturers can count on a steady supply of premium proteins, maintaining continuity for their production needs.
- 4 Expertise You Can Trust**

With decades of experience in protein purification, Athens has developed a reputation for scientific excellence. Since 1985 our knowledgeable team has worked hand-in-hand with clients, providing the insights and expertise needed to help them succeed.
- 5 Customization to Meet Unique Requirements**

Recognizing that each diagnostic solution is unique, Athens offers customized protein products tailored to meet specialized client needs, ensuring our proteins integrate smoothly into various diagnostic assays and workflows.
- 6 Comprehensive Product Support**

From initial selection to application, our team provides comprehensive support, guiding you through each phase. We are dedicated to the success of your diagnostic solutions, every step of the way.

Our Role in Global Health Progress

Driven by a mission to elevate diagnostic science, Athens Research continuously improves the performance and precision of IVD solutions. By delivering superior proteins, Athens Research plays a crucial role in empowering researchers and diagnostic companies to create IVDs that keep pace with the dynamic needs of global healthcare. Below is a list of Athens' proteins currently used or poised to be used as biomarkers in the IVD Industry.

- **Albumin**
- **Alpha 1 Antitrypsin**
- **Alpha 1 Acid Glycoprotein**
- **Alpha 2 Macroglobulin**
- **Apolipoproteins**
 - AI & AII
 - B & E
 - CII & CIII
- **Butyrylcholinesterase (BChE)**
- **C-Reactive Protein (CRP)**
- **Catalase**
- **Ceruloplasmin**
- **Complement C3 & C4**
- **Haptoglobin (1-1, 2-2, Mixed)**
- **Hemoglobin A1c**
- **Hemopexin**
- **Immunoglobulins**
 - IgA (IgA1 and IgA2)
 - IgE
 - IgG (IgG 1 – 4, Fc, Fab)
 - IgM (Fc5 μ , Mu Chain)
 - RF-IgM
- **Lactoferrin**
- **Lipoproteins**
 - HDL & LDL
 - Lipoprotein(a)
- **Myeloperoxidase (MPO)**
- **Prealbumin/Transthyretin**
- **Proteinase 3 (PR3)**
- **Retinol Binding Protein**
- **Superoxide Dismutase (SOD)**
- **Transferrin**

Academic research highlights the pivotal contributions of proteins from Athens Research & Technology in driving forward in vitro diagnostic (IVD) technologies. Athens' proteins have enabled research into biomarkers like butyrylcholinesterase (BChE^{1,8}), a potential indicator of sudden infant death syndrome (SIDS)¹, and MPO², an antigen for autoimmune-related vasculitis. Furthermore, proteins such as defensins and lactoferrin have been used to validate preterm birth risk biomarkers³, and neutrophil elastase has supported biosensor validation for conditions linked to HNE⁴. Cutting-edge methods, including MALDI-TOF mass spectrometry⁵, and microfluidic devices^{3,6}, utilize Athens' proteins to advance diagnostic technology with greater sensitivity, speed, and accuracy.

Moreover, Athens' contributions extend to enabling innovative diagnostic approaches, including breath-based biosensors⁵, rapid ELISA assays⁷, and antibody production for a range of applications from Alzheimer's diagnostics⁸, Cardiovascular⁷ or Pulmonary Diseases⁵. Athens' proteins, crucial to the IVD industry, empower researchers and diagnostic companies worldwide to develop next-generation solutions that address evolving global healthcare challenges.



Contact Us Today

Visit us at **www.athensresearch.com** to learn more about our product offerings or speak to our experts to see how Athens Research & Technology can support your diagnostic solutions.



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1. Harrington, et al. Butyrylcholinesterase is a potential biomarker for Sudden Infant Death Syndrome. eBioMedicine 2022;80: 104041. <https://doi.org/10.1016/j.ebiom.2022.104041> The Children's Hospital at Westmead, Australia

2. McCall, et al. Inhibitory Anti-Peroxidase Antibodies in Pulmonary-Renal Syndromes. J Am Soc Nephrol 29: 2619–2625, 2018. <https://doi.org/10.1681/ASN.2018050519> Vanderbilt University Medical Center, USA & Burlingame, et al. (2016). Antineutrophil Cytoplasmic Antibodies (ANCA) and Strategies for Diagnosing ANCA-Associated Vasculitides. Manual of Molecular and Clinical Laboratory Immunology (eds B. Detrick, J.L. Schmitz and R.G. Hamilton). <https://doi.org/10.1128/9781555818722.ch94> USA

3. Bickham, et al. 3D Printed Microfluidic Devices for Solid-Phase Extraction and On-Chip Fluorescent Labeling of Preterm Birth Risk Biomarkers. Anal. Chem. 2020, 92, 12322–12329. <https://dx.doi.org/10.1021/acs.analchem.0c01970> Brigham Young University, USA

4. González-Fernández, et al. Electrochemical sensing of human neutrophil elastase and polymorphonuclear neutrophil activity. Biosensors and Bioelectronics, Volume 119, 2018, Pages 209–214, <https://doi.org/10.1016/j.bios.2018.08.013> / University of Edinburgh, Scotland

5. Chen, et al. A breath-based in vitro diagnostic assay for the detection of lower respiratory tract infections. PNAS Nexus, 2024, 3, pgae350. <https://doi.org/10.1093/pnasnexus/pgae350> / Maryland, USA

6. Achille, et al. 3D Printing of Monolithic Capillarity-Driven Microfluidic Devices for Diagnostics. Adv. Mater. 2021, 2008712. <https://doi.org/10.1002/adma.202008712> / KU Leuven, Belgium

7. Contois, et al. Lipoprotein(a) particle number assay without error from apolipoprotein(a) size isoforms. Clinica Chimica Acta 505 (2020) 119–124. <https://doi.org/10.1016/j.cca.2020.02.030> / Sun Diagnostics, USA

8. Wang, et al. Butyrylcholinesterase-Activated Near-Infrared Fluorogenic Probe for In Vivo Theranostics of Alzheimer's Disease. J. Med. Chem. 2024, 67, 6793–6809. <https://doi.org/10.1021/acs.jmedchem.4c00355> / China Pharmaceutical University